

# AfIDA Insider

AFRICA INFRASTRUCTURE DEVELOPMENT ASSOCIATION

## MOBILISING PRIVATE SECTOR INVESTMENTS FOR RENEWABLE ENERGY AND TRANSMISSION INFRASTRUCTURE IN AFRICA

### INSIDE THIS ISSUE

#### INVESTING IN RENEWABLE ENERGY Catalysing Private Sector Investments for Renewable Energy In Africa

“ Our view is that countries need to implement a mix of technologies to meet its energy gap and improve energy security to sustain growth, including higher penetration of intermittent renewables such as wind and solar, combined with baseload technologies such as geothermal and gas access to new markets with strong returns potential.

Fabio Borba  
MANAGING DIRECTOR, Globeleq

#### ACCELERATING AFRICA'S TRANSMISSION INFRASTRUCTURE Mobilising Public-Private Partnerships for Power Transmission in Africa

“ First, to be successful in attracting private sector investment in transmission infrastructure, the government need indeed to adopt clear policies and regulations. Introducing private finance in transmission is a major shift for a number of African authorities.

Philippe Miquel  
Managing Director, Fieldstone Africa

# CONTENTS

Welcome Note	03
About AfIDA – Why Join	04
AfIDA Membership Benefits	05
Meet the AfIDA Board of Directors	06
AfIDA Member Networking Platforms	07
AfIDA to Host Kenya Country Engagement	
AfIDA Networking Exchange – 14 November 2018, London	
Feature Interview	12
Andrew Johnstone on Renewables as The Default Option for Africa's Electricity Generation	
Feature Interview	14
Fabio Borba on the Synergistic Collaboration of Private Sector & DFI's for Investment in Renewables	
AfIDA Member News	16
AFC Announces Appointment of 3rd President & CEO	
AFC Landmark Seaport built after 2 Decades in West Africa	
Feature Interview	18
Scott Mackin on The Need for a Self-Sustaining, Enabled & Mandated Distribution Network In Africa	
Feature Interview	20
Bertrand Belben on The Need to De-risk Projects to Attract Private Sector Investments	
AfIDA Member News	22
BioTherm Cashes in on South Africa's REIPPPP Project	
AfIDA Member News	23
Phanes Group on bankrolling Africa's Solar Infrastructure	
Feature Interview	28
Philippe Miquel on Scaling Up "Investing in Investments" for Africa's Transmission Infrastructure	
AfIDA Member News	32
Zimbabwe's Government on the need to Prioritise Infrastructure Investments	
AfIDA Member News	33
DEG's efforts to drive Skills Development in Africa's Construction Sector	
Feature Interview	34
Marina Pannekeet on the Limited Investments Allocated to Africa's Transmission Infrastructure	
Feature Interview	36
Vuyo Ntoi on Preventing Transmission Losses in Africa	
AfIDA Member News	38
Eleqtra on Powering Mozambique Through Renewables	
AfIDA Member News	39
AELEX's Leadership Recognised for Exemplary Contributions to the Legal Energy Sector	
Feature Interview	40
Steven Wynter on the Focus on Generation Detracting from Investment in Transmission	
Feature Interview	42
Theophilus Sackey on the need for an Enabling Social, Economic & Political environment to Attract Private Sector Financing	
AfIDA Member News	44
IFC Partners with Gaia to Develop a Series of Renewable Projects in Africa.	
AfIDA Member & Partners	45



## FEATURES

### INVESTING IN RENEWABLE ENERGY 09

Catalysing Private Sector Investments for Renewable Energy In Africa

### ACCELERATING AFRICA'S TRANSMISSION INFRASTRUCTURE 25

Mobilising Public-Private Partnerships for Power Transmission in Africa



## Welcome Note

Dear AfIDA members and potential members. It is an honour to introduce the fourth edition of the African Infrastructure Development Associated (AfIDA) Newsletter.

As the third quarter of 2018 draws to a close, we are proud to announce that the Fourth Bid Window of the South African REIPPPP Program has finally been concluded with 27 projects reaching financial close and heading into construction. This represents a milestone investment into South African renewables after a three-year delay of what was once considered the most successful renewables program in the world. While the South African Government cancelled its unfortunately named "Expedited Window" in June 2018, it has announced plans for its Fifth Bid Window for the procurement of a further 1800 MW of renewable energy from Independent Power Producers which was approved outside of the proposed Integrated Resource Plan that is currently out for public comment.

Other than this milestone, very few infrastructure projects have closed on the African continent in 2018. This no doubt raises continued concern around the slow pace of African infrastructure development, as we have all heard the sound bites about the need for short-term, affordable infrastructure in order to alleviate the existing bottleneck for Africa to truly realise its potential.

However, the recent announcements from the China Africa Investment Summit held in Shanghai in September 2018, does raise questions in terms of the future of private infrastructure development on the continent. Infrastructure development is seen as the cornerstone of the China-Africa relationship, and it is expected that significant funding will be directed to this need. With constrained capacity from African governments, China's Africa policy will certainly shift the current landscape for non-Chinese infrastructure development. This then begs questions in terms of how other infrastructure development initiatives will be pursued against a framework of highly competitive funding, and inter-government relationships.

This raises the debate on whether the private sector led projects could be side-lined by governments because of the upsurge of



JASANDRA NYKER  
BIOTHERM ENERGY - CEO

China funding commitments to some African countries, or this is yet another win for the sector as more and more investment is needed to close Africa's current infrastructure deficit. We commend all the AfIDA member institutions for their continued efforts in driving investments especially in sectors like Renewable energy in Africa and look forward to more achievements.

Finally, we pay tribute to Mr Kofi Annan, who sadly passed away on 18th August 2018.

Jasandra Nyker



Photo Credit - Shutterstock.com



# AfIDA - Who We Are

The Africa Infrastructure Development Association (“AfIDA” or “the Association”) is an association of project developers and development stakeholders in Africa.

The objective of AfIDA is to enhance the vibrancy of project development (PD) activities in infrastructure, with a view to ensuring that more projects achieve bankability and become available for financing and investment

The association aims to play an important role in the PD industry by providing members with industry updates (via newsletters and relevant research publications), workshop programs, and networking opportunities and serving as an advocacy platform.

AfIDA members include (but not limited to) project developers/ sponsors, regulators, development finance institutions and other financiers. The common goal amongst all members is to have a developmental impact in Africa by the enhancement of infrastructure development on the continent.



Photo Credit - Shutterstock.com

## VISION & MISSION STATEMENT

### 01 VISION

Enhancing the vibrancy of project development activities in the infrastructure sector in Africa.

### 02 MISSION

Africa Infrastructure Development Association (AfIDA), is an association of project developers and development stakeholders in Africa, aimed at advancing the development of more bankable projects on the continent.

### 03 MOTTO

ADVOCACY, INCLUSIVENESS, INNOVATION & GROWTH

The AfIDA will promote and enable Project Development work in Africa, by creating a platform that will foster continuous dialogue amongst members, benchmark project development documents, develop market norms, conduct independent research and serve as a policy advocacy forum for the industry with a view to ensuring more projects on the continent achieve bankability.

# Objectives Of The AfIDA

The objectives of the AfIDA are to **PREP** the development of projects in Africa:

### 01 PROMOTE

The development of power and infrastructure assets in Africa; capacity building in the industry through training and knowledge sharing; transparency through information sharing and dialogue between members; and ethical and professional standards amongst its members.

### 02 REPRESENT

A common voice for developers on a wide range of development interests in a manner as inclusive as possible; the industry by facilitating advocacy and sector representation; the views of its members by being an industry interface to the market; and the African power and infrastructure sector to all stakeholders.

### 03 ESTABLISH

Tools for information gathering and dissemination between members; standardised templates for basic agreements between members; standardised templates for basic agreements between stakeholders; norms, guidelines and codes of conduct to govern project development in Africa; and regular meetings, conferences and workshops to further AfIDA's objectives.

### 04 PROPOSE

Recommendations for improvement in the legal and regulatory environment for project development and finance in Africa to the relevant authorities within governments; greater participation from government in order to be able to deliver bankable projects; benchmarks for market terms in certain key areas of development; and reports and results of industry research following market analysis of key indices.

## WHY YOU SHOULD JOIN AfIDA

### 01 COUNTRY ENGAGEMENTS & POLICY ADVOCACY

Participate in AfIDA's country engagement efforts aimed at driving advocacy and inclusiveness through collaboration between public and private sector developmental stakeholders. The country engagements are aimed at addressing project development bottlenecks and identifying opportunities for development.

### 02 SKILLS TRANSFER

Participate in workshops and conferences where industry issues and market norms are developed.

### 03 THOUGHT LEADERSHIP

Gain access to AfIDA's Industry data, analyses, research and share your input on key discussion topics in the associations newsletter.

### 04 CAPACITY BUILDING

Access to specialised resource hubs that assist members with expertise on deal structuring, project finance, legal documentation, health and safety and other identified developmental gaps.

### 05 DIALOGUE & INFO SHARING PLATFORM

Network with leading industry influencers and stakeholders.

### 06 MARKET BENCHMARKS

Participate in the development of market standards, industry benchmarks and industry template document.





# Meet The AfIDA Board of Directors



**OLIVER ANDREWS**  
AFC  
EXECUTIVE DIRECTOR & CIO  
AfIDA CHAIRMAN



**ALEX KATON**  
INFRACO AFRICA  
EXECUTIVE DIRECTOR & CIO  
AfIDA VICE CHAIRMAN



**DAVID DONALDSON**  
IFC  
HEAD INFRASTRUCTURE AFRICA



**GAD COHEN**  
ELEQTRA  
CEO



**MARINA PANNEKEET**  
FMO  
INVESTMENT OFFICER



**RAGNAR GERIG**  
AFRICA & LATIN AMERICA, DEG  
DIRECTOR ENERGY



**VUYO NTOI**  
SOUTHERN CENTRAL AFRICA, AIIM  
REGIONAL DIRECTOR



**STEVEN WYNTER**  
THEMIS ENERGY  
DIRECTOR ENERGY



**ANDREW JOHNSTONE**  
CLIMATE FUND MANAGERS  
CEO



**JASANDRA NYKER**  
BIOTHERM ENERGY  
CEO

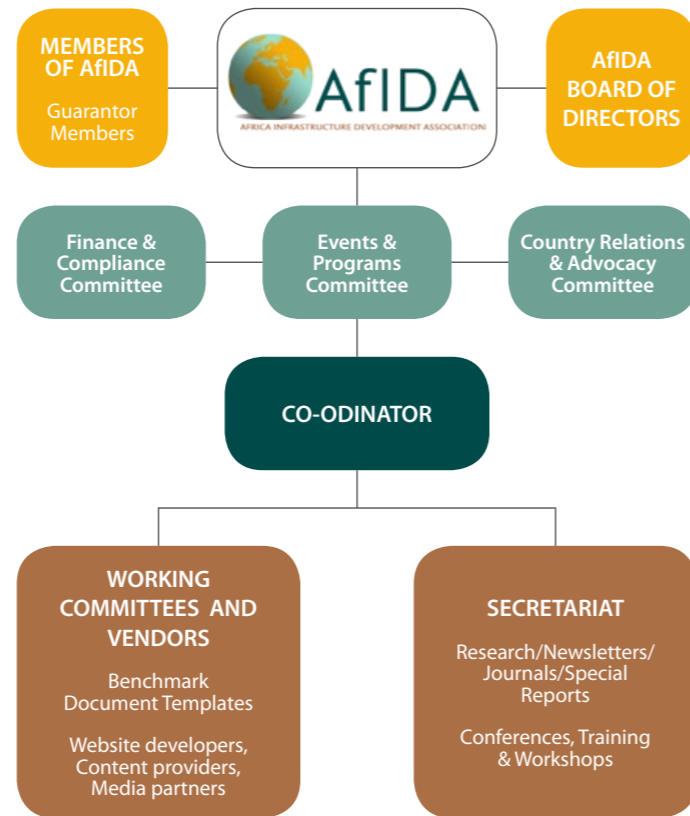


**PAUL BIGGS**  
TRINITY  
SENIOR PARTNER



**SUZANNE GUJADHUR BELL**  
INTERNATIONAL PROXIMITY  
MANAGING DIRECTOR

## LEGAL AND OPERATIONAL STRUCTURE



## THE OPERATING MODEL

- This association is registered in Mauritius (as a not for profit).
- The AfIDA is headed and made up of Board of Directors, with each member being a representative of the pioneer institutions: AFC, AIIM, CIO, Eleqtra, FMO, Infraco, Themis Energy, Trinity etc.
- The Board of Directors have appointed the coordinator who is responsible for the day to day running of the association.



Board Member Institutions

# The Co-ordinators Report Back



Precious oversees the management and operations of AfIDA, supported by the board of directors. In this role, she provides a vital link between the members, the secretariat and the working committees, and other parts of the association.

Precious brings a wealth of experience to the role, having worked in the past with infrastructure project developers and governments and a wide range of investors – including institutional investors, sovereign wealth funds, pension funds and family offices – to facilitate partnerships and investment opportunities.

She has also worked closely with African development finance institutions and other organisations seeking to gain access to international capital by providing them with investor relations, communication and media support as well as business development services. The knowledge gained from this background puts her in an ideal position to help AfIDA make progress with meeting its objectives and ensuring that Africa's project development space remains vibrant.

"I'm excited to be part of a team of industry leaders who are already playing a catalytic role in driving Africa's projects to achieve bankability, helping with skills transfer and serving as a collective voice of developers on the continent" she says.

## AfIDA Events and Advocacy Programs



### KENYA TO HOST AfIDA COUNTRY ROUNDTABLE NAIROBI, KENYA

AfIDA, in partnership with the government of Kenya, Kenya Investment Authority and other key stakeholders will be hosting a roundtable to explore investment opportunities in the transport, energy and industrial infrastructure sectors. The roundtable will host project developers, financiers and policy makers.

### SAVE THE DATE- AfIDA NETWORKING EXCHANGE, 14 NOVEMBER 2018 LONDON, UK

AfIDA will host a Member networking event on the 14th of November 2018, on the sidelines of the AIX- Renewables Exchange, scheduled for the 14th-15th November, 2018 in London.

The event will host AfIDA members and key sector stakeholders.

For more information on participation and AfIDA membership details, please contact Precious Nkandu on: [precious.nkandu@afida-africa.org](mailto:precious.nkandu@afida-africa.org)





# Investing In Renewable Energy - Catalysing Private Sector Investments for Renewable Energy In Africa

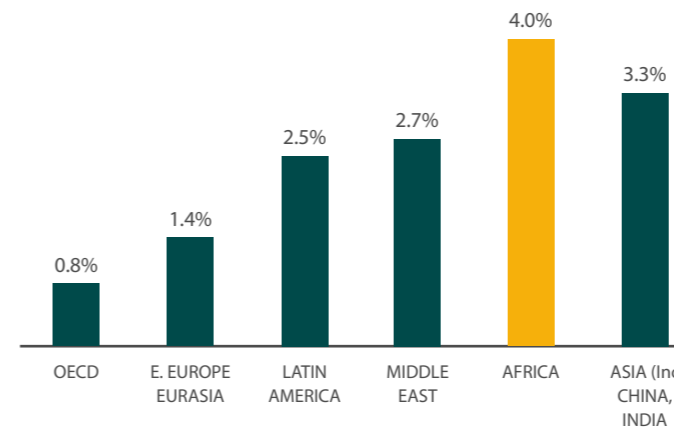
Africa's power sector has experienced incredible transformation over the last decade to catalyse private sector investments. Reports show that several countries like Uganda, Kenya and Nigeria have restructured their sectors to facilitate private sector participation in innovative generation and distribution opportunities and initiatives. South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) has mobilised substantive private investment in the renewable energy sector by allowing power producers to be first on the grid.

The renewables sector has benefitted from the implementation of various return-seeking investments which could also be credited for the rise in private sector funding. Kenya's automatic tariff adjustments is a fascinating example of the opportunity for private generation companies to mitigate forex and the global energy price risks, while regional power pools like the SAPP, WAPP and EAPP continue to drive interconnected energy markets which provide additional distribution markets. South Africa, the Democratic Republic of Congo, Zambia, Botswana and Zimbabwe's partnership on the Grand Inga Hydropower project shows the benefits interconnected markets.

A report by the International Energy Agency argues that an approximate 1.3 billion people lack access to electricity globally, of which an estimated 600 million are in sub-Saharan Africa. It is expected that Africa's demand for electricity will increase by more than two-thirds between 2016 and 2040 and therefore substantial investment is required to; build new capacity, restore, rehabilitate, and reinforce existing power assets. The reports emphasise the need for a generation mix that includes the collective use of natural gas and renewables and that Africa's rural population presents increased opportunities for micro grids installation in decentralised market approaches.

According to a report by Ernest & Young, the global demand for electricity is expected to increase at 2.1% CAGR through to 2040, with most growth coming from emerging markets. The most growth in demand is expected to come from West and East Africa, at 7.7% and 7.6%, respectively and that South Africa remains the largest electricity consumer in sub-Saharan Africa while demand in Central Africa remains lowest across the region.

## GROWTH IN ELECTRICITY DEMAND BY REGION, 2012-40 (CAGR)



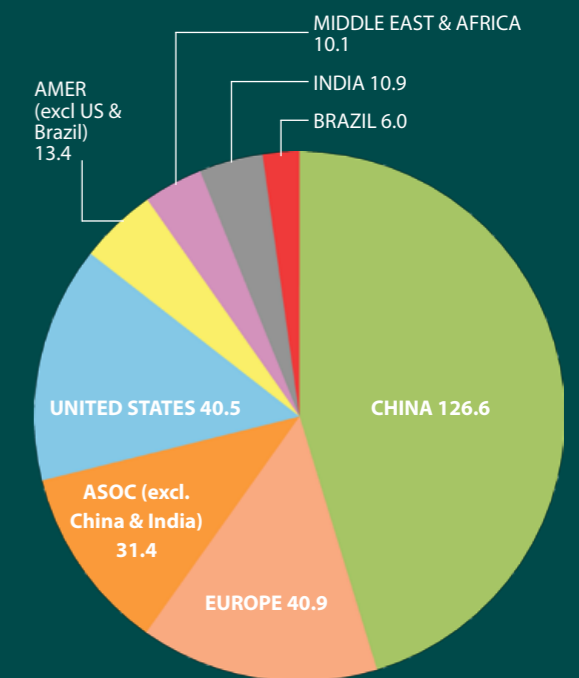
Source - World Energy Outlook (WEO 2014)

Reports show that an estimated US\$ 450-billion will be needed to build new power generation capacity on the continent over the next 25 years and that cost-effective revenue streams could mobilise investments in the power sector as Africa works towards accessing

the power of electricity in an acceptable, affordable, and accountable manner. It is therefore critical for both the public and the private sectors to recognise and adapt to the region's unique electricity challenges and opportunities to achieve Africa's long-term electricity objectives.

Continued on page 10

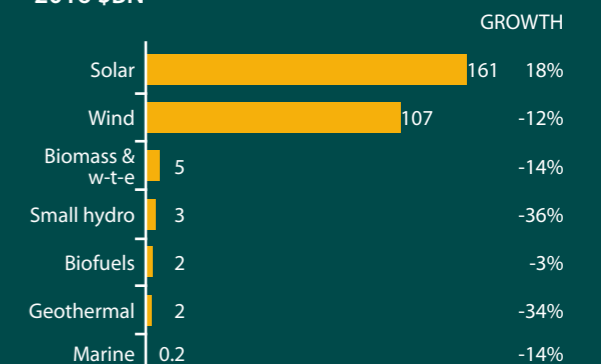
## GLOBAL NEW INVESTMENT IN RENEWABLE ENERGY BY REGION



New investment volume adjusts for re-invested equity. Total values include estimates for undisclosed deals

Source - GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018, UN Environment, Bloomberg New Energy Finance

## GLOBAL NEW INVESTMENT IN RENEWABLE ENERGY BY SECTOR, 2017, & GROWTH ON 2016 \$BN



Source - GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018, UN Environment, Bloomberg New Energy Finance

# INVESTING IN RENEWABLE ENERGY

## Catalysing Private Sector Investments for Renewable Energy In Africa



Continued from page 9

**UNLOCKING INVESTMENTS FOR RENEWABLE ENERGY**

According to the World Energy Outlook (WEO) and EY's Renewable Energy Country Attractiveness Index 2016, renewable energy could be regarded as Africa's immediate opportunity to address the continent's power shortage. The reports show that emerging countries could develop energy mix initiatives aimed at minimising wasted energy and maximising usage and that the reduction in technology costs for renewables make it a viable resource.

Critical to unlocking the investment in the power sector in Africa is the attainment of cost-effective revenue streams. This is transversal across the entire power sector value chain and remains the critical policy enabler to the long-term sustainability of the sector.

**REVIEWING THE CURRENT TRENDS**

According to the International Renewable Energy Agency (IRENA)'s 2018 Global Landscape of Renewable Energy Finance (this report looks at the critical aspects of renewable energy finance, with a focus on technology investment trends and the role of public and private actors in mobilising renewable energy finance), since 2012, renewable power capacity installations have surpassed non-renewables by an increasing margin, representing an estimated 60% of all new power-generating capacity added worldwide in 2016. The report also shows that global annual investment in renewable

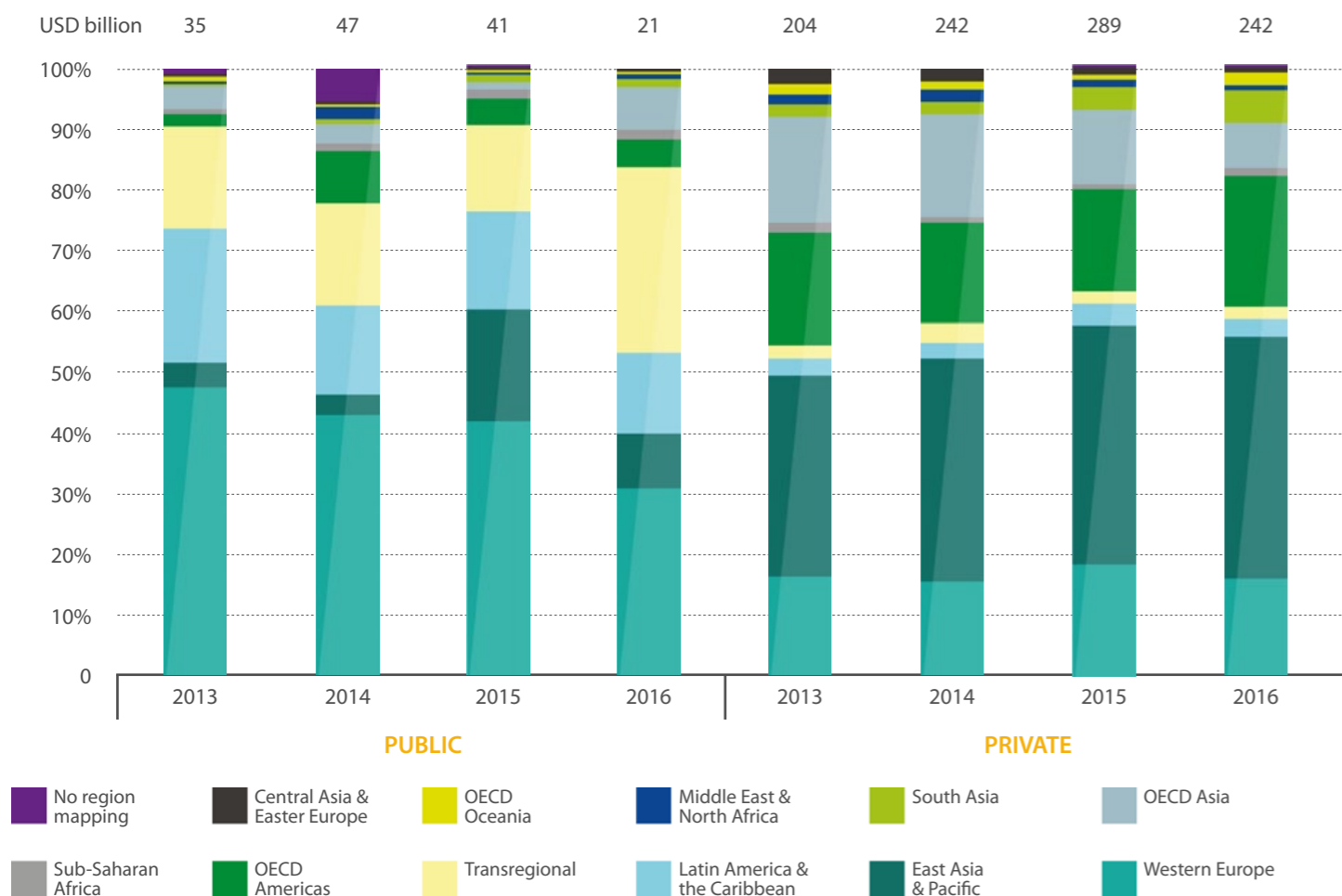
energy increased steadily between 2013-2015, peaking at USD 330 billion in 2015 before falling to USD 263 billion in 2016. The increased investments in renewables are attributed to reduced technology costs (solar and wind power) and policy changes.

**WHO IS FINANCING RENEWABLES**

According to a report by the International Center for Trade and Sustainable Development and findings shared in the Global Landscape of Renewable Energy Finance 2018, renewable energy will play a fundamental role in exertions to implement both the Sustainable Development Goals (SDGs) and the 2015 Paris Agreement on climate change. The findings show that renewable energy could boost energy access in Africa and that there is a need for African countries to develop the right strategies in order to secure the required funding for the deployment of renewable energy solutions.

Reports show that private sources accounted for an estimated 87% of total renewable energy finance between 2013 and 2016, averaging USD 223 billion annually during 2013-2014 and USD 270 billion annually during 2015-2016, peaking at almost USD 300 billion in 2015. Findings demonstrate that project developers account for about two-fifths of private investment in the sector, Institutional investors (pension funds, insurance companies, sovereign wealth funds and others) only make up less than 5% of new investments and that public finance can play a vital enabling role by financing early-stage project risk and getting new markets to maturity.

**PUBLIC AND PRIVATE INVESTMENT IN RENEWABLE ENERGY BY REGION OF ORIGIN, 2013 - 2016**



Source - IRENA - Global Landscape of Renewable Energy Finance 2018

**Private sources accounted for an estimated 87% of total renewable energy finance between 2013 and 2016, averaging USD 223 billion annually during 2013-2014 and USD 270 billion annually during 2015-2016, peaking at almost USD 300 billion in 2015.**

**THE RENEWABLES OPPORTUNITY FOR AFRICA**

According to the African Development Bank (AfDB), Africa had an estimated 168GW total installed capacity in 2016 of which 33GW was installed renewable capacity. The installed renewables capacity is expected to triple by 2025. Roughly \$65-90 billion per year will be needed to achieve universal access to electricity across the continent and that investors continue to express caution when; Choosing the right country, Choosing the right technology and Choosing the right project to invest in.

International Renewable Energy Agency (IRENA) found that Africa's renewable power installed capacity could increase by 290 percent between 2015 and 2030, compared to 161 percent for Asia and 43 percent for Latin America. IRENA also estimates that the cost-effective potential for renewables on the continent is around 310 gigawatts by 2030.

According to the Africa Progress Panel and IRENA, an additional investment of US\$55 billion per year will be needed until 2030 to achieve universal access to electricity on the continent and that to fully exploit Africa's significant potential in renewables, US\$32 billion will be needed on average every year from 2015 to 2030. The Moroccan solar project (funded by resources from the German KfW development bank, the European Union, the European Investment Bank, and the Saudi Arabian ACWA Power group) is an excellent example of how African countries can mobilise various resources to achieve scale and secure the necessary project financing.

Collectively, there are a variety of funding options which provide both grants and loans (concessional and non-concessional) to countries depending on the nature of the specific projects they seek to finance. Other players such as the European Investment Bank, the European Union, the Japanese Development Agency, the United States Agency for International Development, the Swedish International Development Cooperation Agency, the Danish International Development Agency, the UK's Department for International Development, the Canadian International Development Agency, and other bilateral institutions also provide grants and loan schemes to African countries. Therefore, financing opportunities for SDGs, and renewable energy projects, in particular, are wide-ranging.

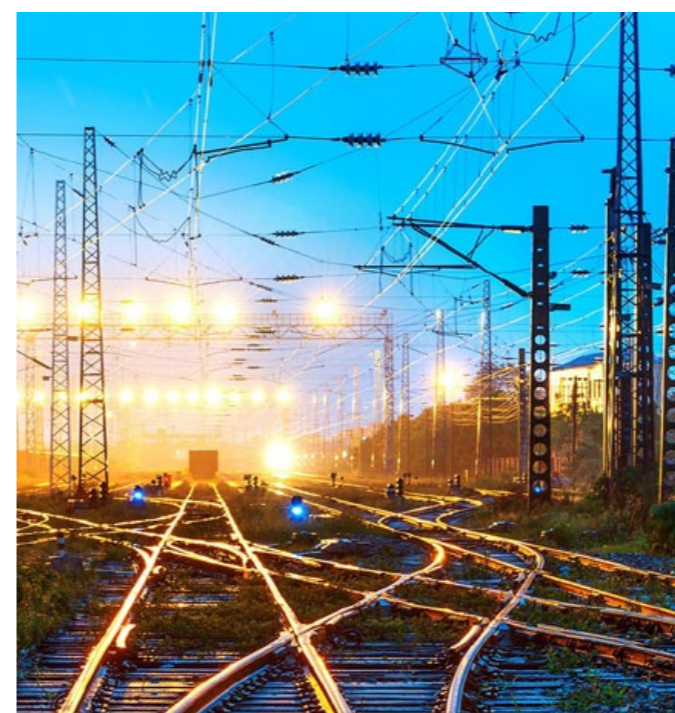


Photo Credit - Shutterstock.com

**HOW AFRICAN COUNTRIES CAN ACCESS FINANCING FOR RENEWABLES**

Various stakeholders have varying recommendations on the key steps countries (government) should take to ensure they attract and retain the required funding in the Renewables sectors, some proposals include;

- **Needs analysis** – There is a need for countries to define their needs accurately and in a manner that optimises their chances of achieving their sustainable development objectives. This is key to access funds, enhance their impact, and support country ownership. Most African countries have produced long-term visions and national development plans to guide medium-term strategies, but technocrats need to be focused and deliberate about accessing resources for renewable energy investments.
- **Driving private sector participation** – Collaborating with the private sector will be a critical factor. The private sector can play an important role in rolling out renewable energy investments speedily. These investments are a vital source of technology transfer and deployment of young talent at scale. The private sector can come in by providing implementation funding once projects are deemed bankable. A robust private sector could enhance the returns showing in the financial model of the project through its participation as counterparties in Power Purchase Agreements. The emergence of blended financing structures could also provide a prominent role for private sector funding which can be combined with financing from Development Finance Institutions (DFI's) and donors
- **Access to bankable projects** - There is a need to provide access to bankable projects. Coordinating institutions of government should drive the renewable energy agenda, as opposed to being driven from the supply side. This approach can spur countries into a proactive engagement with financiers by creating a demand for resources.
- **Providing an enabling environment** – There is a need to provide an enabling environment as a catalyst for attracting investments. Policies on taxation and feed-in-tariffs need to be structured with a view to driving project viability. Locally managed power companies should also play their role in reducing inefficiencies in electricity generation and thus help make the most of the financial resources that are already available.
- **Increased transparency** – There is a need for beneficiary institutions to meet internationally accepted fiduciary standards and have appropriate environmental and social safeguards in place. This entails professionalism, employing modern tools and systems of management, and efficient execution of projects. Government officials must engage with the experts from multilateral and bilateral funding institutions as equal partners for better deals. Africa has plenty of these experts, but they must be gathered at the negotiating table across from these partners to represent their country.



## Andrew Johnstone on Renewables As The Default Option For Africa's Electricity Generation

**Is your organisation currently active in the Renewable Energy sector in Africa? What changes in investment trends have you experienced over the last decade?**

Yes, Climate Fund Managers is very active in the RE sector in Africa and have people and or projects on the ground in a number of regions including Kenya, Djibouti, Morocco, South Africa and Tanzania. Trends have followed sectors to a large extent, and have been guided by policy. Where a country has focused on a sector, such as power, or education, or transport and had put in place process, legislation and people - the private sector has typically responded with expertise, effort and investment capital. This has worked better in some instances than others, and broadly speaking programmes comprising multiple projects have been more successful in mobilising investment capital than stand-alone flagship projects.

Another trend is towards smaller projects, such as off-grid renewable energy, and the use of simpler forms of financing. Traditional project finance is sophisticated and presumes an ability to resolve to a high level of definition the risk associated with the investment. This is a time consuming and costly process and is often not appropriate either for the sums involved nor the risks associated with the project. This has resulted in more innovative financing models, less use of conventional lenders, and greater reliance on sponsors balance sheets and the ability to fund projects during the risky stages.

**“ One needs to separate the role of financing development and the role of doing the development. The private sector will always be better placed to do the development activity. They have the expertise, the flexibility and creativity, and tenacity to endure the challenges of the development stage. ”**



ANDREW JOHNSTONE

CLIMATE FUND MANAGERS - CEO

**By the end of 2016, an estimated 147 countries had renewable energy support policies in place, while feed-in tariffs and premiums continue to be implemented. What role does renewable energy play in addressing Africa's power deficit? Is it a more cost-effective and sustainable power generation approach?**

Renewable energy is a very flexible electricity generation technology. It can be established at large (Megawatt) utility-scale levels or at small (KiloWatt) household scale. It can be connected to the grid, or be implemented off-grid. Users can pay for electricity used through traditional billing means, or through new financial technology applications. So it is super flexible in the multiple ways it can be implemented.

This is very significant in the Africa context as it is well established that access to electricity for lighting, heating, technology and cooling is the most powerful tool available for poverty eradication and universal access to electricity is bedrock to a prosperous and stable Africa. Renewable energy is the best solution we have to achieve this objective.

Separately, Renewable Energy it is currently the cheapest way of generating new electricity. Massive reduction in cost, driven by technology and scale, an understanding of the true cost of coal including environmental damage, and the gradual removal of subsidies makes Renewable Energy the default option for electricity generation.

**Reports show that development finance institutions and donors continue to bridge the financing gap by providing development stage funding. What do you regard as the role of the private sector and where are the investment opportunities?**

One needs to separate the role of financing development and the role doing the development. The private sector will always be better placed to do the development activity. They have the expertise, the flexibility and creativity, and tenacity to endure the challenges of the development stage. Increasingly, however, the private sector is prepared to assume the financial risk of the failed development. Many developers contribute their time on risk with no compensation until the development is successful. The same goes for consultants who contribute their intellectual property and expertise on risk, and in the case of the unsuccessful development need to write off this risk. DFI's do provide considerable support to this stage by financing third-party costs, picking up some of the workloads in areas such as technical and environmental appraisals and similar.

Increasingly too are dedicated development facilities such as the Development Fund of Climate Investor One, which provided both expertise and funding to the development stage and activity assumes delivery responsibility to workstreams in the development process.

Notwithstanding, the development stage of projects remains a precarious time for both participants and financiers, and the mortality rate of projects remains unacceptably high. This is due to a number of factors including the binary and costs nature of procuring permits, the repetitive re-inventing of the wheel on issues such as power purchase agreements, letters of support and the unrealistic commercial expectations of early-stage participants.

**Is there an enabling regulatory environment to drive inter and intra African investments in the renewable energy sector in Africa?**

Not really. Each country appears to be setting their own agenda and policies, which is fine, however in so doing time is lost, and lessons are relearned. This has a cost, and often a wasteful cost, which the continent can ill afford.

There are some pan Africa programs promoted by multilateral development banks and development finance institutions, which they do seek to standardise processes and carry momentum across regions. I think however care need to be taken as in some cases these initiatives create an environment in which limited actors can operate, and the intervention then misses the opportunity to develop deep and sustainable industries with a variety of participant.

**How can public finance sources like concessional finance, grants, guarantees, and other risk mitigation instruments be scaled up in a targeted manner to drive new investment in the renewable energy sector, especially in emerging economies that are currently lagging behind?**

While it would be good for there to be more of this type of capital, I do not think the future of development relies on the scaling up of this type of capital. Instead, it depends on the success of what is sometimes referred to as "mobilisation" which is the deployment of commercial private sector capital alongside this enabling capital. For this to happen, the providers of enabling capital need to understand what the friction points are which are inhibiting private sector deployment and allow their capital to be structured to reduce or remove this friction. At the same time, the private sectors need to be more explicit in what they require this enabling capital to do and guard against talking in generalities.

**South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and Zambia's GET FiT could be regarded as pioneering the way for IPP's across Africa, could this be regarded as a replicable model for the rest of the continent?**

I have mentioned before a concern that the pursuit of standardisation sometimes results in creating a playing field which favours the few. This is the case where you have a single bidder winning 80% of the projects, which limits the development of a deep and resilient private sector market. There is a widely held view that DFI's and MBD's are at times too aggressive in pursuit of development outcomes, price risk inappropriately, and undercuts commercial sustainability. Programs, where commercial banks, investment funds and local capital are absent, reflect this.



Photo Credit - Shutterstock.com

**Some Independent Power Producers (IPP's) have highlighted challenges with retrospectively changing tariffs which could delay and deter investments in renewable energy across Africa, what do you propose as a mutually beneficial way forward for both developers and governments?**

It is not uncommon for tariff expectation to change during the process of development and bidding. This usually happens when the bidding period had been extended due to the difficulty to secure financing for the project. In the current climate of falling process and increasing familiarity with the sector (lower risk), a more extended timeline usually results in tighter economics and does not work to the developers/bidders advantage - not the financiers. While offtake tariffs may reduce with time, the economic and social cost of no power during the period of delay is far greater to government, so dragging out the process is false economy. Increasing investment (be-it time, money or other) hinges on increasing confidence, and confidence is built when parties do what they say they are doing to do.

**Before introducing or increasing local content levels in the development of renewable energy projects government and regulators need to consider available local skills and infrastructure to avoid frustrating project developers and increasing projects costs. Do you agree with this statement? What are your thoughts on the current impact of local content legislation on developers and projects across Africa?**

I think local content is a vital component to sustainable investing. Infrastructure assets are social assets, they serve the social good and need to be embraced and supported by the communities they serve. They must also deliver tangible and direct benefit to these same communities. During the construction and operations phase, this means job creation, skills training and improved quality of life. I think an area that does need special attention is the matter of occupational health and safety and the cost of skilling, implementing and monitoring is higher due to the lower skill level of local content. This investment in people must not be a sacrificial lamb in the pursuit of the lowest tariff.



## Fabio Borba on the Synergistic Collaboration Of Private Sector & DFI's For Investment In Renewables

**Is your organisation currently active in the renewable energy sector in Africa?**

Since 2002, Globeleq has been developing, investing and operating power generation assets in Africa. We own, operate and invest in nearly 1,300 MW on the continent and pursue new and exciting opportunities across the various spectrums of power plant technologies (gas, HFO, wind, solar, hydro, geothermal, etc.). Renewable energy plays an important role in our portfolio, and since 2014 we have successfully operated 238 MW of wind and solar plants.

Our proven track record in various generation technologies provide us with a competitive advantage. This experience, together with the strong support from our shareholders, CDC and Norfund, ensures that renewables are a core focus of our development strategy. In the coming years, renewable energy will continue to play a growing role in powering the continent, and Globeleq will structure projects with the most appropriate technologies for each country.

**What changes in investment trends have you experienced over the last decade?**

Investment in the African energy sector has shifted from traditional fossil fuels to a much larger focus on grid-scale renewable energy (especially solar) and off-grid renewable. Another shift has been



FABIO BORBA

GLOBELEQ - MANAGING DIRECTOR



South African 50 MW PV Solar farm at De Aar-De Aar Solar Power

from traditional negotiated deals to a 'feed-in' tariff model and energy auctions. We have also been following with great interest the beginning of local debt financing in local currencies.

**By the end of 2016, an estimated 147 countries had renewable energy support policies in place, while feed-in tariffs and premiums continue to be implemented. What role does renewable energy play in addressing Africa's power deficit? Is it a more cost-effective and sustainable power generation approach?**

Utility-scale renewable energy is playing a pivotal role in the global energy transformation as it offers an economically attractive answer to energy security and climate concerns. However, it is not the only solution. Off-grid can help in areas where the grid infrastructure is not available or reliable, and we have seen how once remote villages are now experiencing electricity for the first time. A combination of utility-scale and off-grid solutions can provide a more comprehensive benefit for countries adopting such an approach.

Renewable energy is still limited in terms of its capacity (compared to a gas-fired power station which can generate significantly more MWs) and fuel source availability, but the benefits of shorter construction

time for renewable plants, mean that more power can be brought online more quickly. We have also seen the rise of hybrid solutions and battery storage which will play a more significant role in the coming years. Our view is that countries need to implement a mix of technologies to meet its energy gap and improve energy security to sustain growth, including higher penetration of intermittent renewables such as wind and solar, combined with baseload technologies such as geothermal and gas.

**Reports show that development finance institutions and donors continue to bridge the financing gap by providing development stage funding. What do you regard as the role of the private sector and where are the investment opportunities?**

The private sector has been working closely with DFIs and the two complement each other to unlock bottlenecks collectively, generate growth and investment opportunities. Globeleq works with DFIs in all stages of the investment cycle, from early-stage development thru construction and operation and contribute to alleviating the public sector burden from borrowing more substantial sums for energy generation.

**Is there an enabling regulatory environment to drive inter and intra African investments in the renewable energy sector in Africa?**

Africa has various regional power pools already established, and some countries already export power to their neighbours. Recent investments in transmission lines linking different power pools and countries are being constructed throughout the continent. In some cases, legislation is not entirely in place yet, but we already see countries coming together to work on supra-national projects and energy trading, and we foresee this trend will continue to grow.

**How can public finance sources like concessional finance, grants, guarantees, and other risk mitigation instruments be scaled up in a targeted manner to drive new investment in the renewable energy sector, especially in emerging economies that are currently lagging behind?**

As mentioned in an IRENA report, public funding is best placed to complement rather than push out private sector investment. One crucial role of these funds is through the creation of dedicated risk mitigation facilities. Support from concessional funding is also key for some of the work AfIDA has been championing, such as the standardisation of agreements, creating templates that can be used for more straightforward, smaller projects and working with Governments on policy. Another important role for the funds is to support the off-taker/governments with the right technical/legal advisors. We support the view of the report which suggests that even with limited public resources, working alongside private capital, they can help achieve a climate-safe, sustainable energy future.

**South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and Zambia's GET FIT could be regarded as pioneering the way for IPP's across Africa, could this be regarded as a replicable model for the rest of the continent?**

The success of these programmes is due to the creation of an enabling environment with strong policy & government support, a fair and transparent evaluation process along with the provision of a standard suite of documents that is accessible to all. They will continue to be an important part of unlocking renewable energy investments, and we expect them to grow alongside other initiatives. They are robust models because they put the onus on the developer to find the right sites and take risk within a predictable and transparent environment.

**Some Independent Power Producers (IPP's) have highlighted challenges with retrospectively changing tariffs which could delay and deter investments in renewable energy across Africa. What do you propose as a mutually beneficial way forward for both developers and governments?**

Governments must be careful about the Feed-in Tariff commitments they make to their preferred projects, but once they are made, they must adhere to the agreed tariff if the developer is progressing the project. Retrospectively (and unilaterally) change of tariff is short-sighted, as it may generate an initial gain, but it will be offset against the loss of investors and lenders willing to fund additional projects and the increase in costs in financing and guarantee products.

**Before introducing or increasing local content levels in the development of renewable energy projects government and regulators need to consider available local skills and infrastructure to avoid frustrating project developers and increasing projects costs. Do you agree with this statement? What are your thoughts on the current impact of local content legislation on developers and projects across Africa?**

This is always a balance. In one hand regulators may risk increasing project costs and, in some instances, even jeopardise investments in the country; but on the other hand, it is important to improve local content over time and maximise the benefit of infrastructure investments in the country and job creation. Globeleq investment policy favours maximising local content as much as possible, and we have a number of capacity building/training programs available for our employees in the countries we currently operate.

**“ Our view is that countries need to implement a mix of technologies to meet its energy gap and improve energy security to sustain growth, including higher penetration of intermittent renewables such as wind and solar, combined with baseload technologies such as geothermal and gas. ”**



## “ AFC Announces Appointment of 3rd President & CEO



www.africafc.org

### ABOUT AFC

AFC, an investment grade multilateral finance institution, was established in 2007 with an equity capital base of US\$1 billion, to be the catalyst for private sector-led infrastructure investment across Africa. With a current balance sheet size of approximately US\$4.2 billion, AFC is the second highest investment grade rated multilateral financial institution in Africa with an A3/P2 (Stable outlook) rating from Moody's Investors Service. AFC successfully raised US\$750 million in 2015 and US\$500 million in 2017; out of its Board-approved US\$3 Billion Global Medium-Term Note (MTN) Programme. Both Eurobond issues were oversubscribed and attracted investors from Asia, Europe and the USA.

corporate to actualize the Obajana Cement project and managed the watershed unbundling of Dangote Industries Limited to listed subsidiaries on the Nigerian Stock Exchange. He has led finance transactions for over US\$3 billion covering: green-field project finance facilities, acquisitions, corporate transformation initiatives, privatization and equity capital market transactions.

Samaila is an Eisenhower Fellow and sits on the Eisenhower Fellowship's Global Network Council as well as the President's Advisory Council. He is also an Advisory Board member for KSE Africa a leading Operations and Management provider of captive power plants in the mining sector of Botswana and Nigeria and is the Chairman of MDSA Nigeria Limited, a fintech company providing micro loans across sub-Saharan Africa. Samaila is the Independent Director and Chairman Statutory Audit Committee as well as a member of Finance and General-Purpose and Establishment and Governance Committees of Aiico Insurance Plc. He also serves as an Independent Director and Chairman of the Finance Committee for New Nigeria Commodity Marketing Company.

Dr. Okwu J. Nnanna, Chairman of AFC said: "On behalf of the Corporation, I am delighted to welcome Samaila Zubairu to AFC. In Samaila, we have identified an individual with the exceptional qualities across deal origination, execution, and capital raising that will continue to facilitate AFC's ability to deliver transformational change through infrastructure investment as it moves into a new era. "His track record of operational excellence will be of huge benefit to AFC and all its stakeholders as we build on a decade that has seen AFC become a market leader in Africa's infrastructure space, positively impacting millions of lives every day. I would like to thank Andrew Alli, who over the last decade has turned AFC from a start-up into the world class institution that it is today. His departure is truly our loss, and I am confident in saying I speak for all stakeholders to AFC in wishing Andrew the very best in his future endeavours."

"As the incoming President & CEO, I am confident of AFC's market position as being best placed to surmount Africa's multi-sectoral infrastructure challenges, and no doubt this success has been achieved in no small part, because of AFC's outgoing President & CEO, Mr. Andrew Alli and his team of exceptional professionals. I therefore look forward to joining AFC's highly reputable team, and together, enhancing AFC's position as an extremely capable project partner, able to deliver sustainable development projects across the Continent."

## “ AFC's Landmark Sea Port Built After 2 Decades in West Africa

### AFC COMPLETES THE CONSTRUCTION OF THE BEL AIR BAUXITE MINE IN GUINEA

Africa Finance Corporation ("AFC" or "the Corporation"), the leading infrastructure development finance institution in Africa, is pleased to announce the on-time completion of the Bel Air Mine in Guinea and loading of its first shipment of high grade bauxite to China. The construction of the mine was completed on time, to budget. Steady state production capacity will be 5.5 million tonnes of bauxite per annum, which will add to Guinea's average yearly exports of c.35 m tonnes of bauxite.

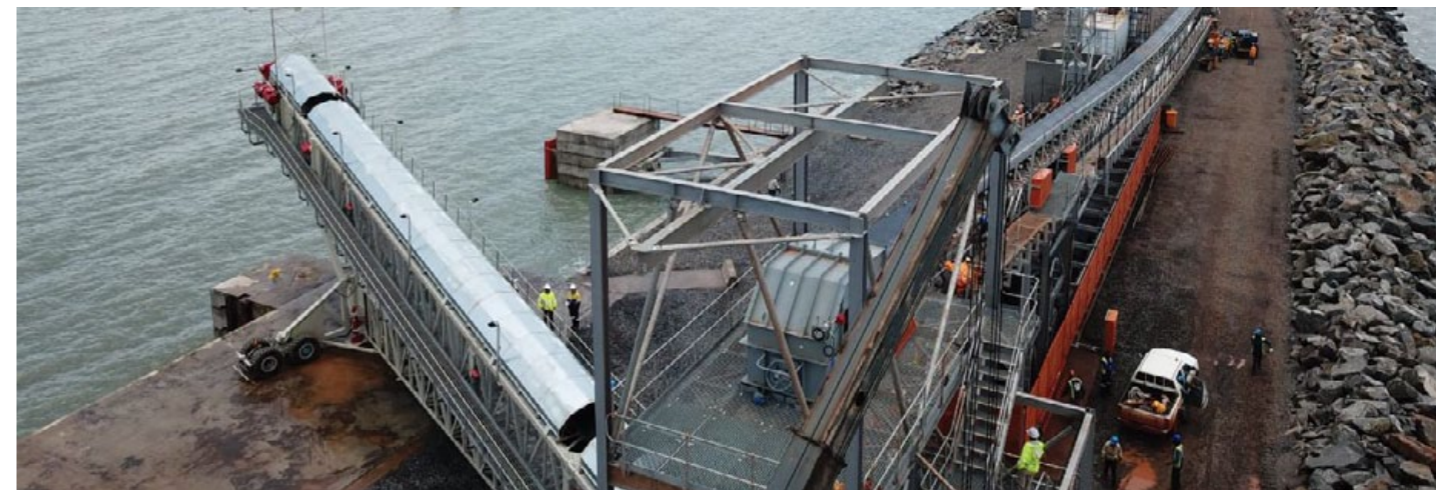
The Bel Air Mine, developed by Alufer Mining Ltd. ("Alufer"), is located in the Boffa region of Western Guinea. Alufer's Bel Air Mine was financed as part of an international investment consortium, which included AFC (the sole African private sector financier), Orion Mine Finance, with over US\$2.5 billion in assets under management, and Resource Capital Funds, a mining focused equity firm with over US\$2.5 billion under management.

The total invested by the consortium was US\$205m, making it the first and largest foreign investment in Guinea since the 2014 Ebola crisis. During construction, the project employed over 1,500 people, 85% of which were Guinean nationals and over half from local communities. This marks a significant milestone for the Corporation, demonstrating its commitment to investing across Africa and providing employment and sustainable economic growth for those who need it most.

Creating a net-positive impact on the surrounding communities formed a key tenet to the development goals of the project. To date, 40 community projects have been completed, including small infrastructure projects that focused on power, water and waste management. Long lasting livelihood projects have also played an important aspect for developing the local economy. The creation of a local development fund has been instrumental in supporting improvements to farming practices that enhance product yields.

Oliver Andrews, Executive Director & Chief Investment Officer of AFC commented:

"The scale of African demand for financing infrastructure investment and maintenance is high. Traditional sources of public financing and weakened economic conditions in many regions of the world including those ravaged by Ebola, have magnified the need for private capital. AFC was established to meet this need by investing in infrastructure assets. I am delighted to announce the timely and safe completion of construction of the Bel Air Mine and associated



Bel Air Bauxite Mine - Guinea



OLIVER ANDREWS

AFC - EXECUTIVE DIRECTOR & CIO

transport infrastructure, including the first sea port to be built offshore West Africa in the last two decades, which brings with it not only employment opportunities but also much-needed connections with international markets that will support sustainable growth for Guinea's mining industry.

Critically, a great deal of importance has been placed on developing a sustainable legacy and there has been significant engagement with the communities - which included over 2,000 meetings held throughout the construction phase - to ensure delivery of effective social and environmental initiatives. To date, 40 voluntary community projects have been completed, in addition to initiatives that will support local economies and provide sustainable development, employment and income generation, that will endure beyond the mine's lifetime."

Bernie Pryor, CEO of Alufer Mining commented: "AFC has been an integral partner in the success of the Bel Air Mine, forming an important component of not only the eventual financing of the project, but also contributing to the sustainable approach to which the project was to be delivered. We look forward to working closely with AFC to deliver substantial returns for all of our stakeholders and creating a positive and lasting legacy for the people of Guinea."



## Scott Mackin on the Need for a Self-Sustaining, Enabled & Mandated Distribution Network in Africa

**Is your organisation currently active in the Renewable Energy sector in Africa? What changes in investment trends have you experienced over the last decade?**

Denham is very active in the Renewable Energy sector in Africa, particularly through its portfolio companies Themis and BioTherm Energy, headed up by industry veterans Tas Anvaripour and Jasandra Nyker, respectively. BioTherm Energy has successfully developed and reached financial close on 333 MW's of wind and solar projects in South Africa, and Themis management has supported over 900MW of renewable projects throughout the team's career.

Over the ten years that Denham has been active in the Renewables Energy sector in Africa, we have seen the industry grow from concept to reality in many countries around the continent. This dynamic has undoubtedly been led by the Renewable Energy IPP program in South Africa but has taken root across the continent, in Cote d'Ivoire, Rwanda, Kenya, Egypt, Zambia and on and on.

Perhaps the biggest driver of this growth is the steep reduction in costs for wind and solar, where solar PV module prices have dropped over 80%, and wind turbines not only became much more efficient but also dropped 34% during the 2010-2017 period. This turns renewables from a "nice to have" into a "have to have" for the continent, providing the lowest cost energy source available. We find this to be an attractive coalescence of economics and meeting key United Nation Sustainable Development Goals.



SCOTT MACKIN

DENHAM CAPITAL - CO-PRESIDENT & MANAGING PARTNER



Photo Credit - Shutterstock.com

**By the end of 2016, an estimated 147 countries had renewable energy support policies in place, while feed-in tariffs and premiums continue to be implemented. What role does renewable energy play in addressing Africa's power deficit? Is it a more cost-effective and sustainable power generation approach?**

Denham has seen the installed cost/MW of solar power fall to less than 10% of what it was in our first solar investment, back in 2009. Wind manufacturers have made efficiency gains and noticeable reductions in cost per MW, as noted above. Renewable energy no longer needs feed-in tariffs or subsidies of any sort; it provides some of the lowest cost of power to Africa today. What Africa does need is a grid that is capable of managing its intermittency, and that is where gas-fired and hydro generation are key. We view these two energy sources as critical to the success of the grid across most, if not all, African countries. The competition for these sources is mostly coal and diesel-fired generation, with embedded environmental and cost considerations.

**Reports show that development finance institutions and donors continue to bridge the financing gap by providing development stage funding. What do you regard as the role of the private sector and where are the investment opportunities?**

In general, we believe the highest and best use of DFI and multi-lateral funding is not in development but project financing and related credit and insurance enhancements.

Africa has capable developers on the ground, and we don't find the kind of "additionality" (in short, the deal could not be done unless they are involved) that DFIs and multi-laterals should have in place to justify spending public money. Indeed, DFI and multilateral involvement in development can lead to an unfortunate situation where public monies compete with private initiatives, which distorts standard market practices.

On the other hand, given the continued difficulties with having creditworthy distribution companies in place to be off-takers for electricity supply projects, the credit side is clearly a place where DFIs and multilaterals play a necessary role. The data shows that DFIs and multilaterals play a meaningful role in a very successful track record

**"The clearest impediment to quick implementation of new clean energy projects in Africa is the state of the national grids, where distribution companies are not creditworthy counterparts and thus DFI's and multilaterals are needed to provide a "work around" – credit enhancements**

for project financed electricity supply projects across Africa. The private sector should be sponsoring projects – developing, putting together project financing, investing equity, constructing and operating.

**Is there an enabling regulatory environment to enable inter and intra African investments in the renewable sector in Africa?**

Each nation will have its own regulatory environment, based in its own set of circumstances. When we ask the question, "what would be the best regulatory environment for Africa", Denham's would be one where the distribution network is both enabled and mandated to be self-sustaining.

The clearest impediment to quick implementation of new clean energy projects in Africa is the state of the national grids, where distribution companies are not creditworthy counterparts and thus DFIs and multilaterals are needed to provide a "work around" – credit enhancements such as Partial Risk Guarantees and Political Risk, Insurance and basic lending, in each case with lengthy involvement of government to government negotiations - to what otherwise would be very straightforward project financing with commercial counterparts. Denham is hopeful that the tremendous efforts of DFIs, multilaterals, donor and advisory organisations could ensure the sustainability of the distribution off-takers are successful.

**How can public finance sources like concessional finance, grants, guarantees, and other risk mitigation instruments be scaled up in a targeted manner to drive new investment in the renewable energy sector, especially in emerging economies that are currently lagging behind?**

Denham sees this as a two-prong approach: first, get to the heart of the matter on making distribution companies sustainable through appropriate funding for smart-metering, equipment and procedure upgrades, transparent and supportive tariffs, privatisations of non-distribution assets, etc. secondly, continue to provide all the elements necessary to attain project financing for power projects in the meantime, until the distribution-related efforts bring about a transformation of the underlying credits.

**South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and Zambia's GET FiT could be regarded as pioneering the way for IPP's across Africa, could this be regarded as a replicable model for the rest of the continent?**

Each country has to take its own route to successfully bringing on new clean energy projects, and certainly both these programs provide good precedent. However, if one were to take a total "white board" approach, Denham would point to Brazil as another example for countries around the world, including Africa, to take into account. There, the entire electricity network has been privatised, and the government's role is as the regulator. Distribution licenses are held by numerous entities that have to meet financial and performance requirements to maintain their licenses and, thus, are self-sustaining. Rates are regulated and sustainable. The various distribution companies pool their power purchases from long-dated power

Countries need to consider near, medium and long-term objectives and their own economic situation. In the near term, many countries need power desperately. So, getting low-cost power on the grid as soon as possible is the top priority. That may involve competitive procurements, but, given the time it takes to put those in place, it may also involve single source negotiations where DFIs and multilaterals providing credit support to the projects add an additional layer of protection regarding project competitiveness. In the medium to long-term, countries have more liberty to establish policies and procedures that can take into account all of the precedent, including that of various African countries and Brazil.

**Some Independent Power Producers (IPP's) have highlighted challenges with retrospectively changing tariffs which could delay and deter investments in renewable energy across Africa, what do you propose as a mutually beneficial way forward for both developers and governments?**

Of course, one of the critical issues behind this dynamic is the long development period between power purchase agreement award and financial close, where decreasing costs from equipment suppliers may be able to be realised. Shortening that development period would eradicate this issue, and in today's world, the starting costs are still quite low and competitive with the off-takers. Overall, this phenomenon will be short-lived given the tariffs in place around the continent today – there are just very few remaining old, high priced tariffs for development-stage projects in place.

**Before introducing or increasing local content levels in the development of renewable energy projects government and regulators need to consider available local skills and infrastructure to avoid frustrating project developers and increasing projects costs. Do you agree with this statement? What are your thoughts on the current impact of local content legislation on developers and projects across Africa?**

We agree with the statement that local content requirements have to take into consideration available resources, but, as with most things in life, this is a balance. Many local content goals can be met over time with hard work, discipline and mindfulness. Others cannot. A recent example of the latter is the significant period between the awarding of the Round 4 REIPP projects in South Africa and their financial close. All but one wind turbine manufacturer closed local operations during that period, a reality that has to be confronted by regulators. Thoughtfulness and reasonableness are the key watchwords for this, but local content needs to be a meaningful part of sustainable infrastructure.



## Bertrand Belben on the Need to De-risk Projects to Attract Private Sector Investments

*"All these facilities need to be used as a way of creating an investment-friendly environment enabling for the private sector. Grants need to be appropriated accordingly to encourage private sector participation. In other words, the private sector needs visibility for the duration of their power selling contracts, and grants might not be there forever."*

**Is your organisation currently active in the Renewable Energy sector in Africa? What changes in investment trends have you experienced over the last decade?**

Yes, InfraCo Africa is involved and active in RE, its major focus technologies being Geothermal, Hydro (Run of the River – big and small), PV and Wind. InfraCo Africa is currently exploring Biomass, as and sees this as the next 'solar wave' in terms of deployability in Africa when considering the fuel resources available (natural or municipality waste) in Africa.

**By the end of 2016, an estimated 147 countries had renewable energy support policies in place, while feed-in tariffs and premiums continue to be implemented. What role does renewable energy play in addressing Africa's power deficit? Is it a more cost-effective and sustainable power generation approach?**

Renewable energy (RE) is quicker to execute than thermal (no supply contract needed – typically), therefore it represents an excellent catalyst to accelerate and promote changes at regulatory levels should a country be willing to realise its RE capacity. Also, donors are profoundly conscious of the environment and push for these changes to happen, as their own way of promoting RE. Once a regulatory system is in place, RE can be deployed and depending on the type (Geothermal/Hydro/Biomass), will help increase baseload capacity and/or peak capacity (if/where appropriate – wind/PV). The revolution to come will be with battery storage as it will allow lowest cost technologies (PV) to be stored and therefore become a dispatchable energy capacity (therefore at low cost). RE is a cost-effective generation solution, clearly for the environment, but also for end-users, when the right mix of base load and intermittent technologies are deployed. Only one or the other usually end up being costly. The balance is to be struck at the country level because not all countries have the same RE potential. Batteries will help bring all these costs down.

**Reports show that development finance institutions and donors continue to bridge the financing gap by providing development stage funding. What do you regard as the role of the private sector and where are the investment opportunities?**

The private sector will only invest once the underlying project is de-risked. InfraCo Africa plays a critical role in de-risking infrastructure project development in Africa by taking the 1st move (and risk) in these projects, thereby opening sectors (see recently signed PV PPA in Chad for instance – quite a prowess). Since then, InfraCo Africa has been solicited by private sector developers to share their experience which, could be pivotal to attracting interest the unexplored potential in Chad.

There are opportunities all over Africa, the estimated 621m people who do not have access to power these days present a lot potential and the upside could be gigantic. It is a known fact that doing business in Africa is not easy and the private sector could take notes from InfraCo Africa's pioneering efforts in countries across Africa.



BERTRAND BELBEN

INFRACO - SENIOR BUSINESS DEVELOPMENT MANAGER

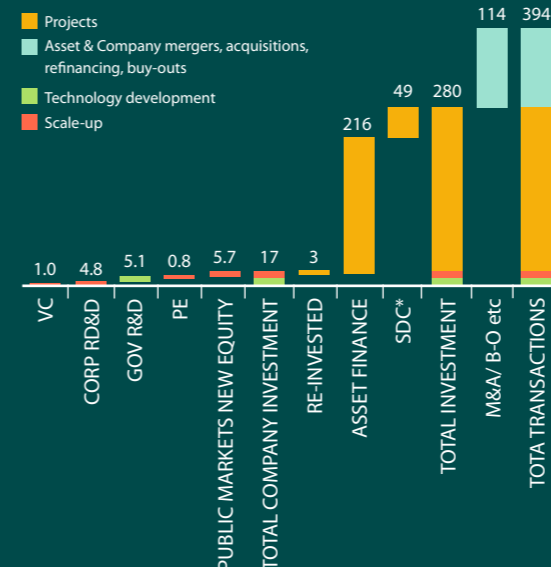
**Is there an enabling regulatory environment to enable inter and intra African investments in the renewable sector in Africa?**

Regulations are typically aligned to specific countries; however regional pools are in place to create synergies between countries. So there are regulatory frameworks that enable intra-African investments, including RE investments, but there are also barriers such as the lack of incentives to invest in a given country, political instability, ease of doing business, corruption indices, etc. All these sadly are inhibitors to quicker RE deployments in Africa, and yet one would think, these are fairly straightforward and removable when putting the public interest at the forefront.

**How can public finance sources like concessional finance, grants, guarantees, and other risk mitigation instruments be scaled up in a targeted manner to drive new investment in the renewable energy sector, especially in emerging economies that are currently lagging behind?**

All these facilities need to be used as a way of creating an investment-friendly environment enabling for the private sector. Grants need to be appropriated accordingly to encourage private sector participation. In other words, the private sector needs visibility for the duration of their power selling contracts, and grants might not be there forever. All the other instruments are structurally required for any given project and will form part of these projects. The base of providers may change (private sector guaranteeing private sector), but ultimately these project enablers will have to be in place to ascertain the commercial viability of projects and require scaling up. Grants should be scaled down (gradually) and should only act as kick starters in the early stage of a new technology or country opening to RE (until costs come down because of production volumes increasing – see PV in China for instance – grants are no longer justifiable to subsidise CAPEX, unless in exceptional cases).

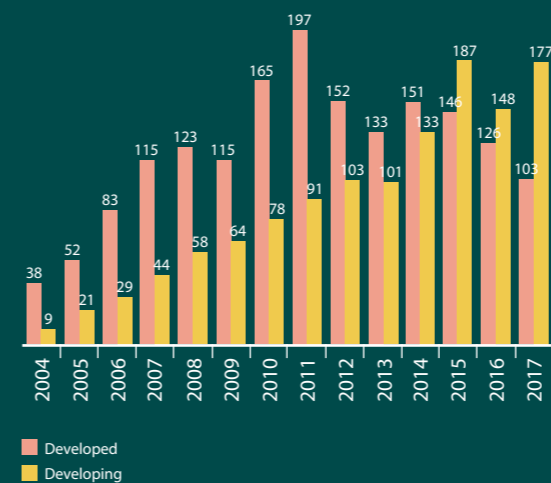
### GLOBAL TRANSACTIONS IN RENEWABLE ENERGY, 2017 \$BN



SDC = small distributed capacity. Total values include estimates for undisclosed deals. Figures may not add up exactly to totals, due to rounding.

Source – GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018, UN Environment, Bloomberg New Energy Finance

### GLOBAL NEW INVESTMENT IN RENEWABLE ENERGY: DEVELOPED V DEVELOPING COUNTRIES, 2004-2017, \$BN



New investment volume adjusts for re-invested equity. Total values include estimates for undisclosed deals. Developed volumes are based on OECD countries excluding Mexico, Chile, and Turkey.

Source – GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENT 2018, UN Environment, Bloomberg New Energy Finance

**South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and Zambia's GET FiT could be regarded as pioneering the way for IPP's across Africa, could this be regarded as a replicable model for the rest of the continent?**

In principle yes, but each and every single country is different in Africa. They do not all have the solar resource Zambia benefits from for instance or the wind resource South Africa has. These reverse auctions need to factor in these differences and recognise that countries do not have the same degree of advancement in terms of regulation or the ability to service the PPA's (what will be a country's liability once/if these schemes are entered into). Likewise, these specificities need to be factored in, prior and in concert with host governments before committing to these agreements. It was interesting to note the time it took to close the 1st deal in Zambia (which was meant to be a cookie cutting exercise).

**Some Independent Power Producers (IPP's) have highlighted challenges with retrospectively changing tariffs which could delay and deter investments in renewable energy across Africa, what do you propose as a mutually beneficial way forward for both developers and governments?**

To enable the private sector to invest in RE, tariffs need to be in place for the duration of the PPA. Any change (or rumour of change) could deter the private sector from investing. Guarantees also need to be put in place with host countries and likely with significant donors to these countries (represented through multilateral organisations), to ascertain that the money to be used to serve the tariff/PPA will be available for the duration of the contract.

**Before introducing or increasing local content levels in the development of renewable energy projects government and regulators need to consider available local skills and infrastructure to avoid frustrating project developers and increasing projects costs. Do you agree with this statement? What are your thoughts on the current impact of local content legislation on developers and projects across Africa?**

Agreed with the question's opening statement. However, I still maintain the view that to attract the private sector in these deals; one cannot forget that the projects need to work well – or instead, need to work as planned and presented to lenders. Therefore quality control becomes paramount, for local content just as much as for international content. Guarantees come to mind to ensure that once a multimillion dollar wind farm financed, it will work, and those guarantees are dependent on the ability of the given supplier to book the liability on its balance sheet. This principle cascades down to the ultimate sub-contractor. South Africa was very successful in implementing this, but perhaps it was a specific case. South Africa has a vast RE resource, the market is enormous, the tender was put together efficiently, and the result is that some OEM are now implemented in South Africa – a total success. The impact is tremendous as it helps to reduce shipping costs, boost employment, set South Africa as a centre of expertise (including research), etc. all this contributing to further develop South Africa (and now its surrounding countries). Within its limit, every country could replicate this.



## “ BioTherm reaches financial close on South Africa’s REIPPPP Project.

### BIO THERM REACHES FINANCIAL CLOSE ON FOUR RENEWABLES PROJECTS

African renewable energy development platform and power producer BioTherm Energy has reached financial close on a 284 MW portfolio of wind and solar projects in South Africa as part of the fourth round of the South African Renewable Energy Independent Power Producer Procurement Programme.

The four projects, on which construction will start shortly, are estimated to be fully operational by 2020.

The total cost for the portfolio of projects, which includes the 120 MW Golden Valley wind project, the 32 MW Excelsior wind project, the 86 MW Konkoonsies II solar photovoltaic (PV) project and the 45 MW Aggeneys solar PV project, is about \$500-million.

Goldwind has been appointed the engineering, procurement and construction (EPC) contractor for the Excelsior and Golden Valley projects, which are expected to reach commercial operation by the fourth quarter of 2019 and the fourth quarter of 2020, respectively. ET Solutions has been appointed the EPC contractor for the Aggeneys and Konkoonsies II projects, which are expected to reach commercial operation in the third quarter of 2019 and the first quarter of 2020, respectively.

“The BioTherm team is glad to have finally closed these projects and looks forward to reaching commercial operations as planned. The closing of these projects is a major milestone for BioTherm and serves as a strong testament to the high-calibre local team,” BioTherm Energy CEO Jasandra Nyker comments.

“We are very pleased with the sustained momentum BioTherm has been able to maintain in building its already strong position as a leader in South Africa’s renewables sector.

“Despite recent uncertainty in the market, the team has worked very effectively with all stakeholders to ensure these important projects are progressed, which will play a role in securing much-needed clean energy for South Africa’s future, while economically enabling the surrounding local communities,” adds private equity firm Denham Capital international power team director Steven Mandel.

BioTherm Energy, which has had the backing of Denham Capital since 2008, has a pipeline of more than 2 GW of wind and solar projects across South Africa, Ghana, Côte d’Ivoire and Burkina Faso.



[www.biothermenergy.com](http://www.biothermenergy.com)

#### ABOUT BIO THERM

BioTherm Energy is an African renewable energy development platform. It is one of South Africa’s leading renewable energy developers and has three operational wind and solar projects allocated under the SA Renewable Energy Independent Power Producers (REIPPPP) Program. With the company having recently secured four Zambian PPA’s as well as being shortlisted in the Ugandan Get Fit solar facility, it is actively expanding its activities throughout the rest of the continent, focusing on wind and solar project development, financing, construction and operations.

Founded in 2003, BioTherm Energy’s objectives were initially focused on the development of gas and waste heat cogeneration projects. The company has transformed itself into an African renewable energy development platform and independent power producer. It was in 2008, when Denham Capital, an energy and commodities focused global private equity fund, ([www.denhamcapital.com](http://www.denhamcapital.com)) with US\$ 7.9 billion under management, invested and committed capital into the business in order to build and acquire a pipeline for renewable energy projects across the African continent.



Photo Credit - Shutterstock.com

## “ Phanes Group on Bankrolling Africa’s Solar Infrastructure.



### PHANES GROUP SOLAR INCUBATOR

Phanes Group has announced the 2nd edition of its Solar Incubator program, aimed at identifying PV projects of potential in sub-Saharan Africa by providing access to funding, and commercial and technical knowledge.

The initiative held under the theme, “Your Project, Our Expertise, For a Sustainable Future”, was launched in collaboration with ECREEE, Hogan Lovells, responsAbility Renewable Energy Holding, RINA, and Solarplaza, and invites PV developers to submit proposals for projects based in sub-Saharan Africa that have a clear Corporate Social Responsibility (CSR) component.

With almost 700 million people in sub-Saharan Africa living without electricity, the Phanes Group Solar Incubator is part of Phanes Group’s core strategy to collaborate with Africa-focused counterparties, such as local project owners, governments, investors and developers, on projects that seek to create a sustainable future for urban and rural communities across the sub-Saharan African region. It aims to enable solutions by supporting projects not only during the funding phase, but throughout their development and delivery. The candidates of the winning project(s) will have the opportunity to enter a partnership with Phanes Group and be able to hold a long-term stake in the project, collaboratively aiming to bring it to financial close. The incubator will provide the winner(s) with extensive mentorship and knowledge transfer.

Phanes Group’s CEO Martin Haupts explains further: “The majority of our business focus lies in electrifying new markets in sub-Saharan

Africa. With CSR at the heart of our business model, we launched this initiative with the goal of bringing bankability to projects that stand to provide clean energy to economies that need it most. The Phanes Group Solar Incubator is an excellent example of this. Entering means creating the opportunity to not only win, but the possibility to gain further exposure to key industry players through the evaluation panel. We have already seen great success from last year’s projects, and we are confident that as this initiative continues to grow, more and more businesses across the continent will be able to effectively address local needs for clean and affordable energy.”

The Solar Incubator will kick off with an intensive face-to-face workshop for the winning candidate(s) in Dubai, UAE - working with Phanes Group’s team and its partners - setting the foundations to deliver bankable projects. During this phase the winner(s) will gain access to commercial and technical know-how covered by experts from project finance, project development and execution, legal and CSR, followed by further remote mentoring sessions for additional months.

The deadline to submit projects for evaluation ends on October 4th (11.59 p.m. CET). The final selection process will take place during a live evaluation panel session at the “Unlocking Solar Capital: Africa 2018” conference in Kigali, Rwanda, where the finalists will present their projects live to the panel members and audience. For more information visit [www.phanesgroup.com/incubator](http://www.phanesgroup.com/incubator) or on the Unlocking Solar Capital Africa conference website at [africa.unlockingsolarcapital.com/solar-incubator](http://africa.unlockingsolarcapital.com/solar-incubator).




[www.phanesgroup.com](http://www.phanesgroup.com)

#### ABOUT PHANES GROUP

Phanes Group is an international solar developer, investment and asset manager, strategically headquartered in Dubai, UAE. Our end-to-end business model brings together fully-fledged in-house capabilities, including expertise in project development, structured finance, capital markets, and legal and regulatory affairs. Lean and agile, our structure enables us to deliver utility-scale, distributed, and off-grid PV solar projects. We take a holistic approach to solar energy to deliver across the entire value chain - from the selection and development of projects, to financing, construction, and O&M.



## Accelerating Africa's Transmission Infrastructure - Mobilising Public-Private Partnerships for Power Transmission in Africa

### TRANSMISSION AS THE CATALYST

Transmission infrastructure plays a crucial role in the electricity value chain. In addition to generation and distribution, there is the need for increased transmission infrastructure as a catalyst for closing the access gap. Several reports have called for innovative financing models that could attract private sector funding into Africa's transmission infrastructure.

Several reports and respondents have cited the World Bank 'Linking up: Public-Private Partnerships in Power Transmission in Africa' report which reviews the potency of private-sector led investments into transmission infrastructure and assesses the applicability of this approach to sub-Saharan Africa's under-developed electricity transmission infrastructure. The report argues that an estimated annual investment into the transmission infrastructure, ranging between from \$ 3.2 billion to \$4.3 billion will be required from 2015-2040 to ensure cost-effective power supply.

### THE CATALYTIC ROLE OF PRIVATE SECTOR

*"As Africa's power sector develops and as the costs of solar and wind power decline, significant new investments in grids are needed. The public sector is unlikely to have the resources needed. I guess that most African governments will seek to keep overall control and allow private sector participation in selected sections, such as independent power producers, transmission lines or mini-grids in power islands. Some governments may also farm out large chunks of their energy infrastructure to the private sector."*

There is need to scale up private sector participation along the energy value chain to bridge the current transmission funding gap. The World Bank estimates the annual investment needed between 2015 and 2040 in all sectors of power production to encapsulate generation, distribution and transmission range from \$33.4 billion to \$63 billion per year. In comparison, the annual investment required to boost the transmission sector over the same period is just \$3.2 billion to \$4.3 billion, this cannot be left to state-owned enterprises as they lack the adequate capacity.

Reports show that private investment could accomplish several factors; it could open new financing streams, particularly project-finance, for cash-strapped governments. It also creates a "competitive and cost-reflective" price scheme, as the private sector will need to recuperate costs. Reports and survey respondents also show that competitive pricing schemes could positively influence the power sector by increasing transmission capacity and sales and reducing generation costs. Private investment could also drive skills transfer by bringing in top-tier management, technical skills and stronger accountability and performances plans.

Survey respondents and report findings argue that to attract the private sector, African governments should focus on improving the investment climate and having the appropriate regulations and incentives in place.

### AFRICA WILL BENEFIT FROM INDEPENDENT POWER TRANSMISSION (IPT) MODELS

Achieving development impact through increased access to electricity will require African countries to mobilise private investments. The influential role of private capital in developing Africa's power infrastructure will be critical. Reports show that since 1994 Africa has attracted over \$25 billion through independent power projects (IPPs), installing an estimated 11GW of generation capacity. Reports



Photo Credit - Shutterstock.com

show that to date, private sector business models have had limited success in expanding transmission networks. The success of the IPT model in Latin America could be replicated in Africa and can assist in bringing additional private investment to Africa, and this has been likened to the IPP approach with similar project financing structures.

*Continued from page 26*

# ACCELERATING AFRICA'S TRANSMISSION INFRASTRUCTURE

## Mobilising Public-Private Partnerships for Power Transmission in Africa



Continued from page 25




**STOPPING THE TRANSMISSION LOSSES**

Several reports show that African countries lack the efficient transmission infrastructure to match the level of power generated. A recent white paper by General Electric (GE) shows that Africa faces emerging opportunities to help deliver efficient, affordable and reliable electricity to consumers and that the Digitization of Energy Transmission & Distribution in Africa could facilitate smart grids and create the potential to address Sub-Saharan Africa (SSA)'s power sector challenges.

The report shows that SSA experiences significantly higher transmission losses than many other regions with countries averaging 20% with some countries as high as 50%, compared with the accepted averages of 7% - 10% in much of the rest of the world. Not only is SSA facing the challenge of meeting electricity demand, but it also has to deal with a percentage of its electricity being lost during transmission and distribution, creating further difficulties. The digital transformation of grids will allow users to take a holistic approach to achieve efficiency, flexibility, transparency and long-term sustainability.

**THE 3DS TRANSFORMING THE FUTURE OF ENERGY**

*"Energy will be cleaner, more accessible, intelligent, connected and responsive"*

	<p><b>DECARBONISATION</b></p> <p>Shifting generation, transmission, distribution and usage towards a lower carbon future.</p> <p><i>Renewable energy, e-Mobility, energy efficiency, new and future fuels, demand side management, etc.</i></p>	<p><b>50%</b> of SSA generating capacity from renewables by 2030</p> <p><b>80 GW</b> of renewable capacity added between 2017 &amp; 2030</p>
	<p><b>DECENTRALISATION</b></p> <p>New DG models with a proliferation of distributed and connected generation, closer to the point of use.</p> <p><i>Distributed generation, energy storage, microgrids, prosumers, VPPs, P<sup>2</sup>P, etc.</i></p>	<p><b>28%</b> of SSA generating capacity from DG by 2030</p> <p><b>50%</b> of new access will be from DG by 2030</p> <p><b>250 MW</b> of battery storage by 2030</p>
	<p><b>DIGITALISATION</b></p> <p>Digital technologies to provide infrastructure for more flexible, intelligent, connected &amp; responsive energy systems.</p> <p><i>Smart grid, asset optimisation, demand response, automated trading, active energy management, etc.</i></p>	<p><b>6 million</b> smart meters installed in SSA by 2030</p> <p><b>\$ 12 billion</b> annual market for smart grid solutions in SSA by 2030</p>

**SURVEY RESPONSE RECOMMENDATIONS**

**"To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?"**

- Proper risk allocation – risk allocation needs to be advised on bankability
- Sovereign backstop of PPAs - governments need to understand that "sovereign guarantees" are not necessarily required but some sovereign support is.
- Develop a framework for strengthened off-taker/PPA models to enhance bankability of utilities.
- Consistency on decision making at the technical level despite changes in government - often elections could stall projects for 1-2 years.

- Provide a more explicit tariff development framework
  - Forced renegotiation is a high political risk. But developers and governments need to stand by their agreements; PRI products such as MIGA's breach of contract can help with protecting developers.
  - Retrospectively changing tariffs may not work well for IPPs as they would have already developed their financing models and determined their returns based on a set tariff structure. The government could find other ways of recovering such lost revenue, i.e. through taxes
  - Reputable multilateral bodies, supported by donors, could provide guarantees that ensure IPPs get what they were promised. It probably means that these bodies need to express upfront their opinion on what are the features of the PPAs they are willing to back.
- Tariffs should be allowed to reflect actual costs so that utilities are not dependent on government handouts. Only then can the utilities be credible partners to private suppliers of power or infrastructure.

AfIDA Insider | September - November

**"African countries lack the efficient transmission infrastructure to match the level of power generated.**

- Provide more funding towards project preparation, i.e. feasibility study development funding.
- Governments should get international bodies to guarantee their commitments.

Survey respondents include; Project Developers, DFI's, Multilateral and Bilateral Organisations, Infrastructure Transaction Advisors (Law firms), Investors, Institutional Investors (Pension and Sovereign Wealth Funds), operating across Africa.

**THE HIGH 10S FOR MOBILISING PRIVATE SECTOR INVESTMENTS**

Reports show that transmission privatisation in Africa has been negligible. According to the World Bank, the private sector could play a vital role in financing, building, operating power transmission infrastructure in Africa through the Independent Power Transmission model (IPT).

Case studies have shown the progressive benefits of IPT's and the scalability of this approach in Africa. Nigeria and Kenya are excellent examples of countries which have taken steps to make way for IPT tenders, but none have been awarded. The famous Lake Turkana Wind Power project, the largest wind farm in Africa, although complete could not be hooked up to the country's grid until 2018 because of a delay in the transmission network which encouraged the government of Kenya to pursue private sector involvement in the transmission sector.

It is fascinating to note that other countries, like Senegal, explicitly prohibit private investment in transmission lines. Findings argue the need to begin piloting a few new projects in Africa to scale up electricity access and pave the way for a sustainable power sector.

Reports and research respondents recommend ten steps "The High 10s for Mobilising Private Sector Investments" that African governments need to take to attract private sector investment in Africa's transmission infrastructure.

- 1 Develop policies that support IPTs:** African governments need to implement policies that encourage private sector participation and Institutions such as the World Bank can help with this by providing technical expertise and advice from other developing countries that have tried and succeeded with this model.
- 2 Develop legal and regulatory frameworks to support IPTs:** In most countries, introducing private sector financing will require legislative and regulatory changes and the development of documents such as those outlining grid codes. Countries must also be prepared to adapt their legal framework over time.
- 3 Conduct trials of IPTs alongside existing business models of transmission:** Moving to a new model that has worked well elsewhere but not been tried domestically could be perceived as a risk for African countries. An excellent way to start is by trying a pilot program to understand the challenges associated with implementing it, and revising regulations and policies as needed.
- 4 Introduce new models for concessional finance:** Transmission projects are capital-intensive and African governments should engage with development finance institutions (DFIs) to develop models for DFIs to support transmission projects delivered by the private sector. African countries can also

work with DFIs to ensure that their lending policies are not biased toward government ownership of transmission and do not impede the use of privately-financed transmission.

**5 Identify the stage at which to tender transmission projects:** There are two comprehensive options which include; early-stage tenders, which allow for more innovation by bidders, and Late-stage tenders are for projects that are already well developed. Late-stage tenders are likely to be the best approach for starting off trials of privately financed transmission projects as they are easier to evaluate as they lend themselves to competitive pricing.

**6 Determine payments to IPTs based on transmission availability:** African governments will need to develop key performance indicators to gauge private sector investors' efficacy, keeping in mind this will be a sensitive issue for them. They must also ensure that their approach follows models that have successfully attracted independent private investment in the sector.

**7 Ensure adequate revenue flow and credit enhancement for projects:** Private investors need confidence that they will receive their payments on time and as specified in their contract, using escrow accounts, for example, if the sector is not profitable. Countries must also be prepared to use either government or multilateral guarantees to back payment obligations when needed.

**8 Tailor IPT projects to attract international investors:** African governments that want to attract private investments in their transmission sector should ensure that bids are of sufficient size and have taken environmental concerns into account. They should also be large enough to justify transaction costs for investors. In some cases, this may mean bundling several projects into a single tender.

**9 Prepare to implement IPT transactions:** To do this, governments will need to identify transaction advisers, prepare service agreements and bid documents, define eligible bidders, and conduct a market evaluation in advance.

**10 Run competitive tenders for IPTs:** The final step will be to run a tender, evaluate bids, and award a contract.

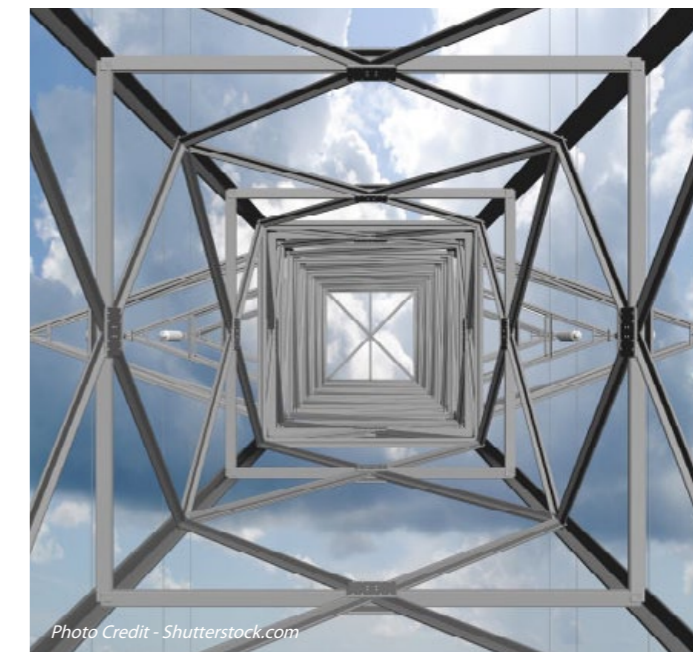


Photo Credit - Shutterstock.com

AfIDA Insider | September - November Edition



## Philippe Miquel on Scaling Up 'Investing in Investments' for Africa's Transmission Infrastructure

FEATURE INTERVIEW - PHILIPPE MIQUEL

**What are your thoughts on the state of transmission infrastructure in Africa? Is the infrastructure available adequate to meet the current capacity being generated?**

One should first bear in mind that the least cost option to universal access to electricity in Africa (and elsewhere) is not the combination of the least cost option of producing centralised power with a fully developed transmission infrastructure. It is rather a combination of grid extension with centralised generators, mini-grid and individual home generation systems (such as solar home systems for example). Transmission infrastructure is a rather costly alternative to deploy and should therefore only be thought in cases and locations where it is indeed the least cost alternative.

Yet, one of the causes of the poor quality of supply and low electrification rates in Africa lies indeed with the significant weaknesses in the power networks. Africa is blessed with substantial untapped potential for renewable energy, including hydro, solar, and geothermal but to connect these resources to consumers, Africa will need to invest in transmission lines. Much of the focus in scaling up investments in the power sector has been on the upstream generation capacity expansion. Corresponding levels of investments are also required for Sub-Saharan Africa's transmission segment. Without these transmission investments, there is a high risk of creating system bottlenecks leaving generation assets stranded.



PHILIPPE MIQUEL

ENGIE - CEO, WESTERN &amp; CENTRAL AFRICA



Photo Credit - Shutterstock.com

In Nigeria for example, much of the focus has been on developing upstream generation which is known to be inadequate for a country of some 190+ inhabitants. Yet, most of the bottleneck in the country currently lies in the inability to transmit the power of the existing generators.

More investment in the transmission sector is necessary. Building transmission lines where it is appropriate and upgrading transmission capacity will be an essential part of the overall expansion of the electricity sector. As Africa needs transmission both within and between countries, investments are required at both the national and regional levels. Investments are needed in long-distance lines, and in expanding in-country transmission networks at a range of voltages. Transmission investment, including investment in transmission between countries, is needed to connect resources to consumers. In-country investments requirements are also mainly covering various project types.

There is a disproportionately large funding gap affecting Sub-Saharan Africa's power sectors, and that is particularly true for the transmission infrastructure funding needs. This gap cannot be met by the limited public finances of client countries alone. Scaling up private participation along the energy value chain is necessary. To significantly move the needle in the energy sector, countries need to

attract sufficient levels of investment.

**The power transmission systems that do exist in Africa are often outdated and unstable; transmission infrastructure is a crucial middle part of the electricity value chain, what measures need to be put in place to develop and sustain the infrastructure?**

African governments or public funding cannot bear the weight of developing and sustaining the continent's transmission system on its own. In many cases, active in sectors such as electricity transmission are state-owned utility companies operating as monopolies, either lacking proper funding to invest or are unable to generate adequate revenue because government agencies set prices at too low a level. Hence, it will be critical to strengthen the performance of these companies and improve the regulatory environment. This will allow public enterprises to deliver better services and may even catalyse interest from private investors to support their investment efforts.

Scaling up the infrastructure effort should also go hand in hand with "investing in investment"—that is, developing a clear vision for the whole sector, and planning spending beyond the current budget.

AfIDA Insider | September - November

FEATURE - ACCELERATING AFRICA'S TRANSMISSION INFRASTRUCTURE

Yet, this is unlikely to happen at the required scale.

Hence, frameworks should be put in place by governments to attract private investments. With available public resources always likely to be limited, it will be essential to look beyond purely public investment and involve the private sector whenever possible. True, as has been the case until now, the public sector will remain a critical provider of infrastructure investment. But with public debt sustainability also on policymakers' minds, the risk is that some valuable projects may be postponed or even abandoned—to the detriment of future growth.

Hence, private companies should be encouraged to get involved as appropriate. The recent telecommunications revolution on the continent should act as a reminder that private companies can invest in infrastructure on their own if the business is sufficiently appealing and the business environment conducive to investment. This model could work in some cases for railway construction or electricity generation.

**Public sector funding has largely financed transmission infrastructure in Africa, what new models of financing can attract private sector funding?**

Several different business models have been used to attract private investment in transmission. The World Bank defines four main models that involve private investments: privatisations, whole-of-grid concessions, independent power transmissions (IPTs), and merchant investments. Private finance has brought substantial investment in new transmission to the countries using these models. With the restructuring and liberalisation of power markets in OECD countries, the approach to financing transmission investment changed. Private companies now finance a large share of transmission investment in many countries in North and South America, and in Europe. The privately financed transmission has also been introduced in some developing countries. India, for example, has attracted US\$5.5 billion of private investment in transmission since 2002.

Four main business models have been used:

- Indefinite privatisations provide ownership of the transmission network to a private company, usually through a trade sale or public flotation of a government-owned transmission business. The private owner has the exclusive right (and obligation) to develop new transmission in its area of operation.
- Whole-of-grid concessions provide similar rights and responsibilities to privatisations, but for a shorter period. In most cases, the government implements this business model with a competitive tender of the concession and enters a concession contract with the winning bidder.
- Independent Power Transmissions (IPTs) provide the rights and obligations associated with a single

transmission line or a package of a few lines. In most cases, the government implements this business model by tendering a long-term contract, with payment dependent on the availability of the line.

- Merchant investors build and operate a single transmission line ("merchant line"). The merchant investor benefits from moving power from low-price regions to high-price regions. In most cases, merchant lines are a private initiative and are not initiated by the government.

In some countries, more than one business model is used. For example, the United States and the United Kingdom have lifted the exclusivity of private transmission businesses for new transmission investment, allowing governments to also conduct IPT tenders.

All these models can work, but the conditions in which they work best are different. Bolivia's attempt at privatisation, for example, did not last, and experiences with concessions in the African countries have failed to yield significant investment. However, where the conditions are right, private finance under these models has brought a substantial investment of new electricity transmission to some countries.

**Alongside generation and distribution, improving and increasing transmission infrastructure is key to closing the energy access gap, what are the investment opportunities for private sector investors?**

As reported by the World Bank, Africa requires an annual investment for transmission between \$3.2 billion in 2015 to \$4.3 billion in 2040. These numbers are very significant and cannot be covered solely by public funds. The private sector has enough room for investment in Africa and opportunities to build, own and operate transmission lines. Indeed, with inadequate and badly maintained infrastructure, the growing demand for electricity driven by increased consumption and urbanisation cannot be met. For instance, river basins that are very important part of the generated energy mix are mostly under-utilised with only 20% of the total potential of hydropower plants under use. Moreover, due to the lack of transmission lines, people resort to illegal connections which worsen the system, and with only 12% of rural households having access to electricity, the private sector has a large market to fill with funding, expertise and commitment.

In transmission infrastructure, the private sector could be inspired by the investment that fueled the telecommunications sector between 1990 and 2004 and allowed Africa to progress considerably in telecommunication technology and infrastructure. Indeed, according to an ICA article, power outages occur on average 56 days a year in SSA which leads to losses in sales revenues for businesses and forces people to spend more money to acquire individual power sources.

<sup>1</sup>"Linking Up: Public-Private Partnerships in Power Transmission in Africa" a report by the World Bank Group - 2017

AfIDA Insider | September - November Edition



**Private finance has supported the expansion of electricity transmission infrastructure in many regions of the world, and the same can happen in Africa. Are there success stories that could be adapted to the Africa context?**

Private companies financed or are financing a large share of new transmission investment in many countries. The different business models described above, have been used to attract private investment in transmission. Private finance under these models has brought substantial investment of new transmission to the countries using these models.

The IPT model has particularly been used over the last two decades to enable major investments in transmission infrastructure in India and South America. IPT tenders in India, Brazil, Peru, and Chile mobilised, according to the World Bank, over US\$24.5 billion from the private sector between 1998 and 2015, enabling close to 100,000 km of new transmission lines.

Between 2006 and 2016, the private sector in India has developed over 21,000 km of lines. This is equivalent to 10.4 percent of new lines built since the start of the 2002–2007 Electricity Plan, and 6.1% of the total network. From 1999 to 2015, Brazil organised 38 tenders of multiple lots resulting in the award of 211 concessions and 69,811 km of transmission lines designed, built, and operated under BOOT contracts. Peru has organised 18 transmission tenders since 1998. These have resulted in more than 6,000 km of transmission lines (and associated substations) designed, built, and operated by the private sector under BOOT contracts. Finally, Chile has organised seven tenders since 2006. Ten projects were awarded for a total of almost 1,200 km.

This includes the recently commissioned 600 km, 500 kV line to interconnect the two main power networks of Chile which was developed, financed and is operated by Transmisora Eléctrica del Norte (TEN), a 50% subsidiary of ENGIE. For the first time, the two main electrical networks in Chile, in the north and the centre of the country, between Mejillones (Antofagasta Region) and Cardones (Atacama Region), has been synchronised thanks to this IPT development. The interconnection is an unprecedented achievement for Chile and marks the beginning of a new stage in the history of national electricity distribution which created a single, more robust, competitive system.

**To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?**

First, to be successful in attracting private sector investment in transmission infrastructure, the government need indeed to adopt clear policies and regulations. Introducing private finance in transmission is a major shift for a number of African authorities. African governments should draw on the international experience to develop their own policies and their own approach to the practical steps for introducing private sector investment.

In most cases, introducing IPTs will require changes to legislation and regulation (for example, changes to the form of the license for transmission companies and the establishment of clear grid codes). Nigeria is one of the African countries that have gone the furthest in preparation for IPTs. The Electric Power Sector Reform

Act 2005 established the framework for competition in transmission. A transmission licensee is authorised to carry out construction, operation and maintenance of the transmission systems within Nigeria, or that connect Nigeria with a neighbouring jurisdiction. In addition, the Grid Code sets out the operating procedures and principles governing the Transmission System. The Grid Code may need further development to enable IPT tenders, but the changes required are not major, illustrating Nigeria's preparation for possible IPTs. Other African countries may need to make greater changes to their Codes, licenses, and other documents.

Note that although most countries having developed IPTs have introduced the vertical separation between generation, transmission, and distribution, this is not a prerequisite. The African experience of IPPs is encouraging, as it shows that full unbundling is not a necessary precondition for introducing private finance. African countries have successfully attracted IPP investors without full unbundling of the generation sector. The critical issue has been the risks borne by the investor, not the industry structure.

Secondly, long-term planning, clear project assignment process and ensuring the appropriate flow of revenues are key to make projects bankable and hence to attract private investors. Authorities need to clearly identify which project are most suited to be assigned to an IPT. This must be part of the national power system master planning. Once, a project has been identified as a good candidate; it must be assigned to a developer through a clear and transparent process. African governments will need to decide whether to run competitive tenders as the basis for entering contracts with IPTs.

Internationally, almost all contracts have been awarded through competitive tenders. However, in some cases contracts have been allocated without tender to a given developer. The reason has usually been that the projects have tight timelines, and this avoids any delay in the tendering stage. Whichever selection process is selected, it must be clear and transparent. Regarding bankability and assignment of revenues, debt providers need to be confident that the cash flows will enable the project company to cover its debt payments, while equity investors also need confidence that they will be sufficient for the project company to be profitable and to provide the expected returns. In Africa, where most national utilities do not collect enough cash to cover their costs, that can be a challenge.

Finally, transmission projects are capital intensive. African governments need to maintain their access to concessional lending for transmission projects but should not be tying them solely to government-owned transmission projects. If concessional finance is linked to delivery by government-owned transmission companies, then the case for IPTs is likely to be difficult or impossible. No examples are available of concessional loans to private transmission in Africa. This is likely to distort the decision on the best business model for future transmission projects. The low

**“ IPT's could be the most promising business model to involve the private sector in Africa.**

cost of concessional lending helps African governments meet their targets for access at a lower cost to consumers. Any shift to IPTs must safeguard these benefits. African governments should work with DFIs to ensure that DFI lending policies are not biased towards government ownership of transmission and do not impede the use of privately financed transmission.

**Do you think independent power transmission projects (IPTs) could be an effective approach in Africa?**

Africa's experience with private sector participation in the transmission sector has been negligible, primarily through whole-of-grid concessions. Though these have not achieved significant investment in transmission, they have brought some operational benefits. Africa has no experience of privately-financed transmission lines through IPTs. Some preliminary steps have been made to prepare for IPT tenders in Nigeria, but no projects have been awarded.

IPTs could be the most promising business model to involve the private sector in Africa. They have performed well in other developing countries. The per capita income level of some of these countries at the inception of IPTs was similar to the per capita income levels of the African countries that are considering the introduction of IPTs today. IPTs in both middle-income and low-income countries have led to substantial private investment in transmission, significant cost savings through tenders, and to contractual agreements that are thus far stable. Further, the risks that IPT investors carry are similar to those that IPP investors carry, and the IPP business model has worked well in Africa.

**“ First, to be successful in attracting private sector investment in transmission infrastructure, the government need indeed to adopt clear policies and regulations. Introducing private finance in transmission is a major shift for a number of African authorities. ”**



Photo Credit - Shutterstock.com



## “ Zimbabwe’s Government On the Need to Prioritise Infrastructure Investments.



[www.idbz.co.zw](http://www.idbz.co.zw)

### ABOUT IDBZ

The IDBZ was formed on the 31st of August 2005, taking over the assets and liabilities of the former Zimbabwe Development Bank (“ZDB”). It was primarily set up as a vehicle for the promotion of economic development and growth, and improvement of the living standards of Zimbabweans through the development of infrastructure, which includes but not limited to energy, transport, water and sanitation, information communication technology (ICT) and housing. The Bank is also enjoined to develop institutional capacity in undertakings and enterprises involved in infrastructure development in Zimbabwe (IDBZ Act (Chapter 24:14). The Bank, therefore, operates primarily as an infrastructure development finance institution (DFI).

“To champion sustainable infrastructure development through: mobilization of resources; capacity building; and knowledge generation and sharing in support of national efforts for inclusive socio-economic development”.

### INJECTION OF EQUITY CAPITAL BY GOVERNMENT INTO THE IDBZ

The Zimbabwean government has injected an additional US\$150 million equity capital into the Infrastructure Development Bank of Zimbabwe (“IDBZ/the Bank”). The capital injection is testimony of the importance the Government places on the role being played by IDBZ in economic development and growth, and the improvement of the living standards of Zimbabweans through the development of infrastructure.

A strong capital base for IDBZ will enhance its efforts in championing infrastructure development through high impact investments in energy, transport, water and sanitation, information and communication technology, and housing sectors.

Government recognizes that sustainable and inclusive economic growth and social upliftment can only be achieved on the back of robust economic and social infrastructure. In this regard, IDBZ plays an important role in providing the necessary technical lead in the packaging, marketing, resourcing and implementation of infrastructure projects. In addition, IDBZ shall ride on the strategic thrust by His Excellency, President E.D. Mnangagwa of having a development-oriented bureaucracy that is responsive to the needs and aspirations of all Zimbabweans.

His Excellency, President E.D. Mnangagwa, has already set a clear vision of Zimbabwe becoming an Upper Middle Income Economy by 2030 (“Vision 2030”) and with the US\$150 million capital injected by Government, the Bank will now play its catalytic role as an enabler of national growth and transformation, thus assisting Government in meeting its policy objectives on infrastructure development and making important progress towards the attainment of the Vision 2030 and the Sustainable Development Goals (SDGs).

The Board and Management of the Bank are thankful and greatly appreciate this continued strong support from its parent shareholders which will strengthen the Bank’s balance sheet and give it capacity to partner Government in delivering infrastructure development in the country.



## “ DEG’s Efforts to Drive Skills Development In Africa’s Construction Sector.



### KNAUF INTERNATIONAL GMBH BUILDS TRAINING CENTRES FOR DRYWALL IN EGYPT, ALGERIA, GHANA, NIGERIA, TANZANIA AND TUNISIA. CO-FINANCING BY DEG

Work and income are a decisive factor in providing people with prospects. This is particularly true of African countries with young, growing populations. This is where an Africa initiative set up by Knauf International GmbH and DEG – Deutsche Investitions- und Entwicklungsgesellschaft mbH will come into play: the plan is to establish a total of eight drywall construction training centres in six African countries – Egypt, Algeria, Ghana, Nigeria, Tanzania and Tunisia. DEG is co-financing the project with around EUR 2.3m from funds from the developPPP.de programme of the Federal Ministry for Economic Cooperation and Development (BMZ), while Knauf will invest a further EUR 2.8m.

Knauf, a German family-owned company, is one of the world’s leading manufacturers of building materials and construction systems, with production facilities and sales organisations in over 80 countries. The company is already active in the countries where the Africa initiative is set to be established.

### Drywall construction training centres in six African countries

“Together with our long-standing partner, Knauf, we will help people undertake training that will give them career prospects in their native country. At the same time, the initiative’s partner countries will gain local skilled labour with qualifications, which will in turn help to develop the construction sector,” explained Christiane Laibach, Chairwoman of DEG’s Management Board.

“Alongside investment in production plants, the construction of training centres underlines Knauf’s long-term, sustained commitment to these countries. Africa will be a strategically interesting region for Knauf over the coming years,” added Alexander Knauf, one of the company’s managing partners.

The economy in many African countries is on a growth course, as is the construction sector. However, there is a lack of specialist expertise and well-trained skilled labour. Knauf’s planned training centres will offer a mixture of theoretical and practical training in drywall construction. Modules will be geared towards young people without qualifications, as well as students, construction workers, architects and instructors. Depending on the target group, training content will include, for example, physical, chemical and structural basics, the installation of ceilings and walls, noise and fire protection and industrial health and safety.

The initiative aims to provide training to 12,000 people within the space of three years and create just under 2,000 jobs, both directly and indirectly.

DEG has already supported a number of Knauf’s investments. Following on from these training centres in Africa, similar initiatives are planned in the Middle East and Latin America, where further drywall construction training centres are set to be established.

[www.deginvest.de](http://www.deginvest.de)

### ABOUT DEG

For 55 years DEG, a subsidiary of KfW, has been a reliable partner to private-sector enterprises operating in developing and emerging-market countries. We provide them with long-term financing and advice tailored to individual needs. They can thus develop successfully and sustainably, while generating local added value and creating qualified jobs. As a development finance institution, we deliberately tap into future markets and promote the expansion of the private sector. DEG finances long-term investments of private companies in developing and emerging-market countries. As one of the world’s largest development finance institutions, it promotes private sector companies to contribute to sustainable economic growth and improved living conditions in these countries.[5] DEG focuses on projects and corporate finance in Africa, Asia, Latin America as well as in Central, Eastern and South-Eastern Europe.



## Marina Pannekeet on The Limited Investments Allocated to Africa's Transmission Infrastructure

**What are your thoughts on the state of transmission infrastructure in Africa? Is the infrastructure available adequate to meet the current capacity being generated?**

Currently, the capacity of the transmission infrastructure is not adequate to meet generation capacity and hence demand for energy in most of the African countries. It is fair to state that, the transmission infrastructure by far in most of the countries on the African continent is in great need of upgrading and expansion. In a number of countries, especially in the East African region, heavy investments have been made in generation capacity. However, currently, these countries are running into limitations on the transmission side. Lack of available funding from governments cause this, and since by far most of the transmission companies are 100% government owned, there seems to be very little availability of private funding for example for project finance-based approaches.

**Public sector funding has largely financed transmission infrastructure in Africa, what new models of financing can attract private sector funding?**

A project finance approach could be used to support the development of transmission infrastructure. However, this does imply that somehow cash flows will need to be ring-fenced to



MARINA PANNEKEET

FMO - INVESTMENT OFFICER



Photo Credit - Shutterstock.com

establish an attractive business proposition for private sector funding. Another approach is for governments to offer a hybrid form of supply hence combining on-grid, off-grid and mini-grid solutions (currently not yet bankable). It is a fact that it will be too expensive to invest into on grid solutions for everybody solely. This is the very reason why the off-grid sector is growing so rapidly, essentially also supported by technological developments. In that sense, the comparison can be made with mobile telephony: the African continent skipped the phase of building landlines, but immediate investments were made in mobile networks.

**The power transmission systems that do exist in Africa are often outdated and unstable; transmission infrastructure is a crucial middle part of the electricity value chain, what measures need to be put in place to develop and sustain the infrastructure?**

Reference is made to a very useful report published by the World Bank / PPIAF in 2017: "Linking Up: Public-Private Partnerships in Power Transmission in Africa" ("the report"). This nicely sets out four main business models: (i) indefinite privatisations; in short transfer to

a private owner, (ii) whole-of-grid concessions: assignment of rights and responsibilities for a shorter period, (iii) Independent Power Transmissions (IPT): providing rights and obligations associated with a single transmission line, or a package and (iv) merchant investors: mostly private initiatives and concern HVDC lines. The way the business models work will depend on amongst others the regulatory framework in the country in question.

“ **First and foremost, in my view, governments should develop a vision of how they aim to improve the energy sector in the long term. Based on that long-term energy sector strategy determine the transmission line capacity that is required. This includes views on the energy mix, on-grid and distributed energy solutions, vertical separation etc.** ”

**Alongside generation and distribution, improving and increasing transmission infrastructure is key to closing the energy access gap, what are the investment opportunities for private sector investors?**

As far as I am aware, current private owned and managed t-line operators in Africa are ENEO (utility in Cameroon) and CEC in Zambia. However, the report indicates that for example in Mali, Senegal and Ivory Coast, there are a number of concessions in place, most of them valid until 2021. Other than this, at the moment there are very limited investment opportunities. This other than investments done by developers in transmission lines that are needed and dedicated to dispatching the power generated by the power plant that they are investing in. Usually, these transmission lines are transferred to the utility once operational.

We do see that for example, KPLC in Kenya is looking into the possibility of attracting private funding to further develop their transmission network and also Uganda is considering a similar approach. We do expect that having the right building blocks in place to facilitate private sector funding will, however, take some more time.

**Private finance has supported the expansion of electricity transmission infrastructure in many regions of the world, and the same can happen in Africa. Are there success stories that could be adapted to the Africa context?**

According to the earlier mentioned World Bank report, various countries in Latin America and Asia have successfully introduced the participation of private sector investors in their transmission networks. This has reportedly resulted in reduced project costs and increased coverage and hence accessibility. It is flagged that there are significant differences between the context in these regions and Africa. This includes the financial viability of the power sector; in most countries in Africa the utilities are technically bankrupt, and due to the fact that electricity tariffs are not cost reflective they are dependent on structural government support. In a number of cases, there is a severe backlog in payments from the utilities to the IPPs, an example is Zambia, which does not provide a reasonable basis for the development of a market to finance transmission lines. Another important basis for the development of the private sector is having an industrial basis generating sufficient revenues. This is important to ensure profitability of generators, network business, and distribution businesses. Last but not least, this approach requires vertical separation between generation, transmission and distribution

**To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?**

First and foremost, in my view, governments should develop a vision of how they aim to improve the energy sector in the long term. Based on that long-term energy sector strategy determine the transmission line capacity that is required. This includes views on the energy mix, on-grid and distributed energy solutions, vertical separation etc. Following this, the government's view on which of the models fit best can be established. A logical next step is to implement the regulatory framework to facilitate long-term private sector development and funding in order to upgrade transmission line capacity.

**Do you think independent power transmission projects (IPTs) could be an effective approach in Africa?**

The solution to achieving higher levels of access to energy should not be found in only one approach. As indicated before, there will be areas in countries on the African continent that will not have possibilities for on grid connections simply because it is too expensive and moreover, technological development has and is making other, distributed, solutions possible. In addition, in some countries, more than one business model is used. In areas where on grid power is economically viable, the IPT system will only work if the conditions that are necessary to attract private sector investment are fulfilled.



Photo Credit - Shutterstock.com



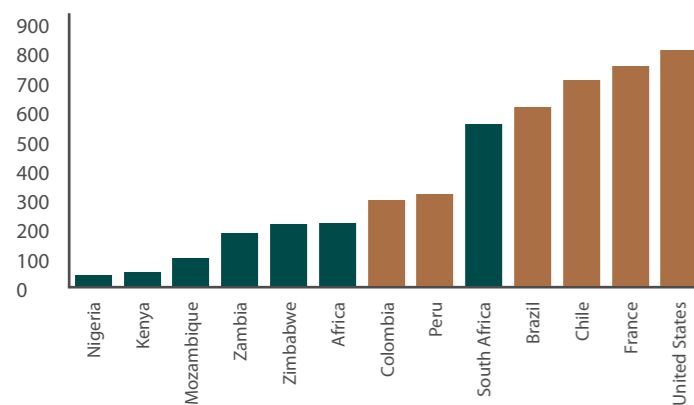
## Vuyo Ntoi on Preventing Transmission Losses in Africa

**What are your thoughts on the state of transmission infrastructure in Africa? Is the infrastructure available adequate to meet the current capacity being generated?**

The electricity transmission infrastructure in Africa bears a strong resemblance to the continent's power generation and distribution infrastructure in that it is in a poor state and is inadequate to boost economic growth and raise the living standards of the continent's growing population. The combined length of the transmission networks of 38 African countries is about 112,000km, while the country of Brazil has a more extended network of approximately 126,000km.

The transmission infrastructure in place is in many instances not adequate for transporting the power from existing generation facilities, let alone the level of generation required to satisfy currently unmet demand. In some instances, the current state of transmission infrastructure has been a bottleneck in the development of new generation capacity.

### TRANSMISSION INFRASTRUCTURE PER CAPITA



Source – World Bank & PPIAF



VUYO NTOI

AIIM, SOUTHERN CENTRAL AFRICA - REGIONAL DIRECTOR

**Public sector funding has largely financed transmission infrastructure in Africa, what new models of financing can attract private sector funding?**

As with the rest of the power sector on the continent, transmission infrastructure tends to be financed by the public sector. Transmission has in particular been kept in the public sector sphere as many governments view the infrastructure as being critical to national security. The fiscal challenges being faced by many countries have led to governments reconsidering the participation of the private sector in this part of the electricity value chain. In addition transmission infrastructure has been relatively neglected when it comes to funding models, as most of the focus has been on the generation and distribution ends of the value chain. Some models have been used in other developing countries to attract private sector financing, and according to the World Bank / PPIAF these have included: (i) privatizations of state-owned transmission companies, usually with a requirement for further investment; (ii) whole-of-grid concessions are similar to privatizations, but for a limited period (iii) independent power transmissions (IPTs) usually offer rights over a single line, with availability payments from government; and (iv) merchant investments, which are a private initiative to move power from low-cost areas to high-cost areas in deregulated markets.

**The power transmission systems that do exist in Africa are often outdated and unstable; transmission infrastructure is a crucial middle part of the electricity value chain, what measures need to be put in place to develop and sustain the infrastructure?**

Indeed, transmission infrastructure is required to connect the opposite ends of the electricity value chain. The World Bank has estimated that between USD 3.2 billion and USD4.3 billion will need to be invested in the transmission sector in the years between 2015 and 2040. Transmission losses are prevalent in Africa, and among the necessary measures to alleviate them will be the introduction of higher voltage transmission infrastructure. Furthermore, increased transmission connections to areas with considerable generating potential such as the mooted Inga Project will provide significant economies of scale and associated lower electricity costs. Transmission infrastructure connecting various countries and regions of specific countries to the rest of those specific countries is imperative. New and existing infrastructure will also have to be adequately maintained. Countries such as Nigeria and Kenya are mulling over the introduction of the private sector to their transmission markets.

**Private finance has supported the expansion of electricity transmission infrastructure in many regions of the world, and the same can happen in Africa. Are there success stories that could be adapted to the Africa context?**

Other developing economies should provide good examples of what can be achieved with private funding in the transmission infrastructure space. Argentina and Chile ran full privatisation processes for their transmission infrastructure, while the Philippines have undertaken whole-of-grid concessions. Whole-of-grid concessions have in the past been implemented in some African countries, with Mali, Cote d'Ivoire and Senegal being examples.

IPTs have been run in Mexico, India, Brazil and Chile, among others; while merchant investments have not yet been attempted in developing countries. The World Bank believes that IPTs are a promising model for Africa, in light of their success in attracting private investment into transmission infrastructure and fostering cost-effectiveness due to the tenders that we run. In addition, the contracts that have accompanied IPTs have proven to be stable.

**To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?**

Recommendations on attracting the private sector to invest in transmission infrastructure include the following:

- Have clear policies on how the private sector will participate in transmission infrastructure, and set up the regulatory framework to support such investment.
- Ensure the feasibility of the transmission infrastructure, and provide the necessary revenue support and credit enhancements.
- Run a process at a scale that will attract large foreign operators and investors with experience in the sector.

**“ As with the rest of the power sector on the continent, transmission infrastructure tends to be financed by the public sector. Transmission has in particular been kept in the public sector sphere as many governments view the infrastructure as being critical to national security. ”**

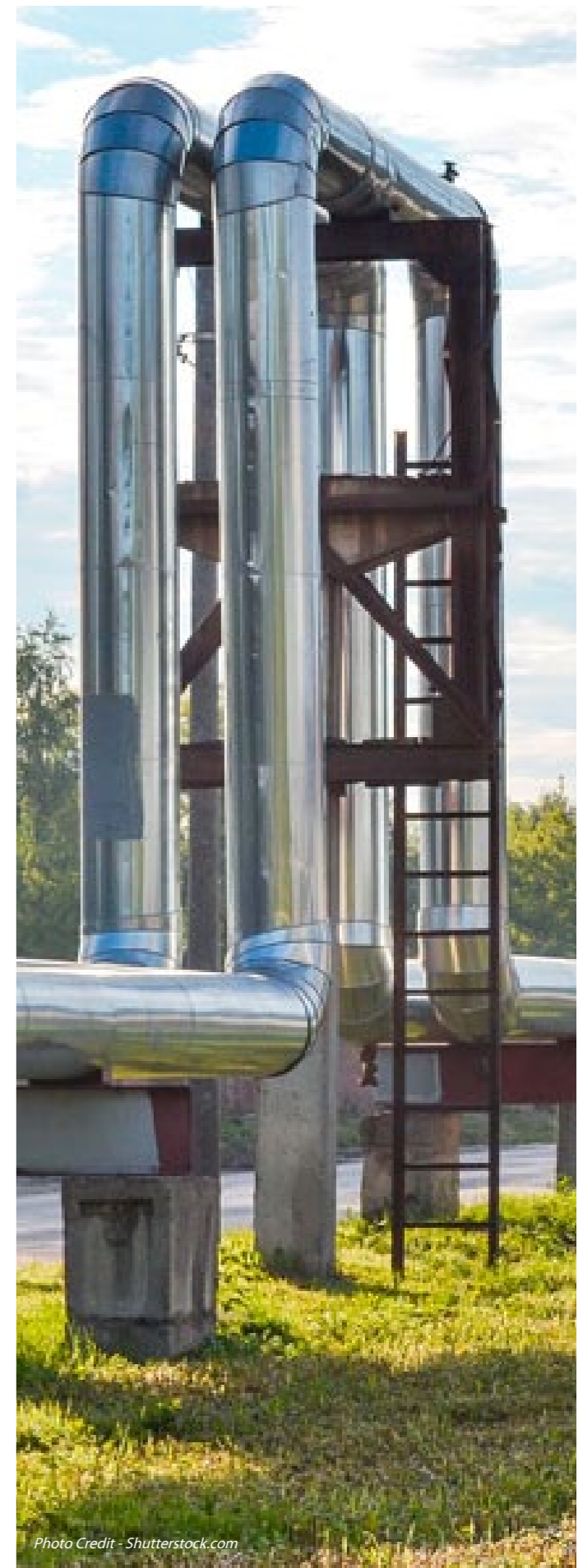


Photo Credit - Shutterstock.com



## “ Eleqtra Powers Mozambique Through Renewables.



### ELEQTRA ANNOUNCES SIGNATURE OF A USTDA GRANT FOR ITS NAMAACHA WIND IPP PLANT IN MOZAMBIQUE

EleQtra is pleased to announce the recent signature of a grant from the United States Trade and Development Agency to accelerate the development of its wind power project in Mozambique. The grant will provide crucial funding to accelerate eleQtra's first wind project in Mozambique, the Namaacha Wind project.

When it comes on stream, the Namaacha wind project is expected to be the first IPP wind project operational in the Mozambique. Located in an area that is close to the capital city of Maputo and in an area of excellent wind resources, the project is expected to reinforce the renewable power production capabilities of Mozambique and will play an important part in meeting Mozambique's growing electricity demand.

eleQtra has selected Mozambique as a priority country to increase its activities in the clean energy sector. With an office established in Maputo, the company plans to push ahead with the development of its portfolio of energy projects. The Namaacha Wind Project is an important part of this initiative. The project will generate up to 120MW of energy in the Namaacha District of Southern Mozambique (the "Project"). eleQtra has signed an MOU with the Fund for Energy (FUNAE) in the Ministry of Energy granting eleQtra development

rights for the Project. The Project will be developed with a Phase 1 of 60MW, to be followed by another phase of 60MW as demand evolves. Lauren Thomas, head of the eleQtra office in Maputo said "We are extremely proud that eleQtra's initiative to develop a wind farm in Namaacha will receive this critical early-stage funding from the US Government. We hope that this support will lead to the strengthening of the Mozambican power supply with the first wind IPP in the country and we look forward to working with USTDA to complete these fundamental feasibility studies."



# ELEQTRA

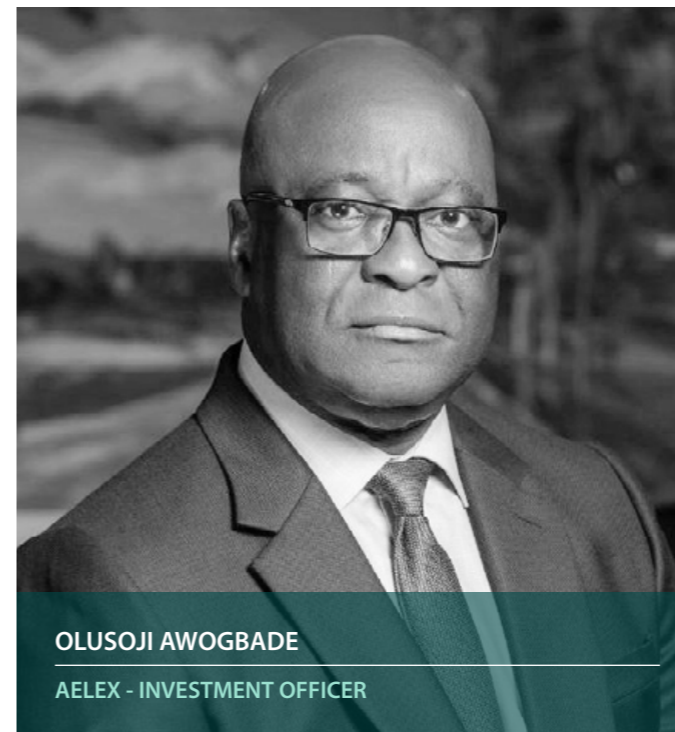
www.eleqtra.com

### ABOUT ELEQTRA

eleQtra is a private infrastructure development company, operating in sub-Saharan countries. eleQtra specialises in putting together greenfield infrastructure investments in Africa with a particular emphasis on renewable energy projects. The firm has built up a solid track record of implementing projects in the power and other sectors – delivering big development gains in challenging environments.

In the twelve years since its creation, eleQtra has helped catalyse more than \$1.5 billion of investment in new infrastructure across sub-Saharan Africa.

## “ AELEX's Leadership Recognised for Exemplary Contributions to the Energy Legal Sector.



OLUSOJI AWOGBADE

ALEX - INVESTMENT OFFICER

### ALEX PARTNER, MR OLUSOJI AWOGBADE, NAMED A THOUGHT LEADER IN THE WHO'S WHO LEGAL ENERGY 2018 PUBLICATION

ALEX Partner and Head of the Energy and Natural Resources Practice Group, Mr Olusoji Awogbade has been named a Thought Leader in the Who's Who Legal Energy 2018 Publication.

Soji is head of the energy and natural resources practice group of AELEX, which has one of the largest energy practices in West Africa. He specialises in energy transactions and mainly advises clients on project finance, oil and gas, environmental, investment and securities, and company law.

In his 40 years of legal practice, he has garnered considerable experience in the development, supply, transmission and distribution of oil and gas, power, and energy sector restructuring and privatisation. He has also gained a sound understanding of the legal, regulatory and policy issues as well as commercial, fiscal and environmental matters arising in construction and project development.

He continues to advise major, independent and marginal field operators on the legal, regulatory, commercial, fiscal and environmental aspects of acquisitions, divestiture and operations. Soji is respected by local and international investors, financial institutions, project owners, developers.

# AELEX

www.aelex.com

### ABOUT AELEX

AELEX's Infrastructure practice brings together an interdisciplinary team of professionals with extensive expertise needed to handle complex assignments. The multidisciplinary background of our members, combined with local and international exposure to infrastructure transactions, places AELEX in a prime advisory standing in this emerging sector.

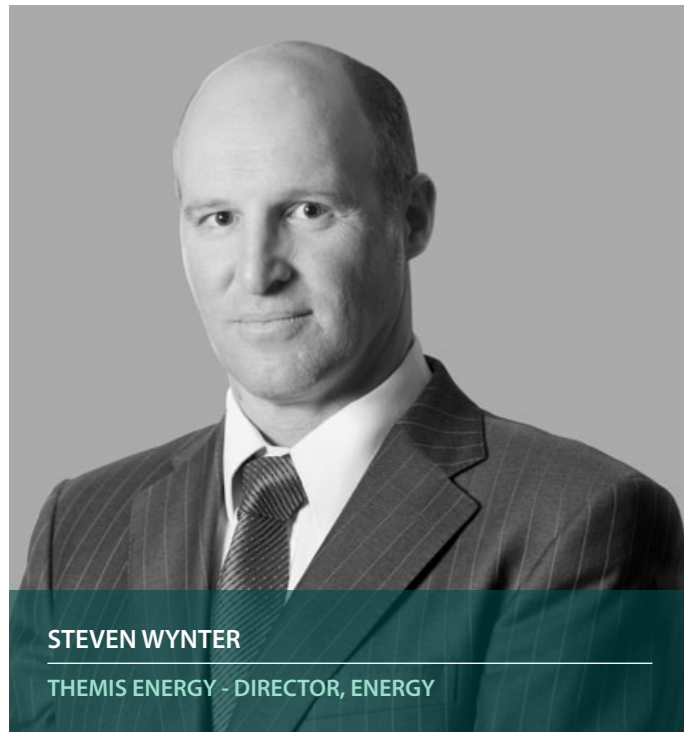
The firm's expertise covers power generation and distribution projects, roads, ports, transit, telecommunications, oil and gas, aviation, waste management and railways. We assist clients in public/private partnerships, hybrid financings, blending elements of cash-flow lending and project finance. They are regularly involved in complex capital structures with debt/equity co-investment and sophisticated inter-investor/creditor arrangements.

Our Energy and Natural Resources practice is the primary point of reference for investors engaging in Nigeria's oil, gas, mining, power and renewable energy sectors. The team and its members are consistently ranked in the top tier by major legal directories. The specialist skills and significant deal experience gained by our team members from several landmark assignments throughout the energy chain present our clients with a unique one-stop service for energy related issues.

The firm's expertise covers legal, regulatory and policy issues as well as commercial and fiscal matters that arise in oil, gas, mining, power, and renewable energy transactions. They provide advice on energy and utilities finance, energy mergers, acquisitions and joint ventures, electricity and gas transmission, distribution and supply, power purchase, off-take and tolling arrangements, the firm also conduct legal and entry due diligence in relation to the acquisition of commercial assets. They assist clients on corporate structuring of legal vehicles as well as local content issues.



## Steven Wynter on the Focus on Generation Detracting from Investment in Transmission



STEVEN WYNTER

THEMIS ENERGY - DIRECTOR, ENERGY

### What are your thoughts on the state of transmission infrastructure in Africa? Is the infrastructure available adequate to meet the current capacity being generated?

Transmission has definitely been the 'poor cousin' in respect of private sector investment on the continent. Lack of adequate transmission has resulted in numerous instances of wasted government expenditure on both 'deemed payments' to stranded generation facilities and on the unquantifiable costs of intermittent supply due to unstable grids.

The (often misplaced) public and private sector focus on generation, and the lack of proven financeable models for transmission appear to have detracted from the importance of investing in the (less sexy) transmission assets. Ironically, private sector success in the generation may exacerbate the problem of generation capacity outpacing transmission in various countries over the short-term. Transmission build-out appears to be hamstrung by various elements, including:

- Lack of planning, efficiency and budget in the public sector.
- Transmission is often viewed as a strategic state asset, and there appears to be a reluctance to allow private ownership of the infrastructure. Similar misgivings were, at one time, evident in the generation sector. Experience has shown mainly that these assets can be regulated and controlled by the state while under private ownership.
- The transmission infrastructure itself is often structured as a 'cost centre' within the public authority. This appears to have limited the contracting structure with private sector entities to construction contracts.
- Lack of a financeable model to attract the private sector.

### Public sector funding has largely financed transmission infrastructure in Africa. What new models of financing can attract private sector funding?

We don't need entirely new models of financing. Ultimately the private sector prefers the tried and tested finance models. Broadly speaking, existing models should be applied to a new sector. After all, transmission is a piece of infrastructure with a user and an operator. Standard models of finance/project finance could be tweaked to accommodate private-sector expectations of risk and return.

Let's not forget that the private sector has already played a minor role in transmission funding. This has taken the form of either providing asset finance-type structures that have backed straight construction contracts, or the build/transfer model often associated with private sector generation facilities. These types of funding provide a limited advantage in terms of large-scale transmission infrastructure.

A 'BOOT-type' structure, where the 'contractor' has a long ownership tenure, more control over O&M and assumes some risk on actual performance, would theoretically provide a much greater benefit under circumstances where large projects are needed, and government capex budgets are constrained. This type of structure is more complex and is still untested (in respect of transmission) on the continent.

Multilateral financing institutions have a key role in helping countries structure the frameworks to adopt a BOOT-type structure that would be attractive to private investors. This mirrors the role these institutions played in introducing private sector investment into generation assets. Their assistance may be required on multiple levels.

### The power transmission systems that do exist in Africa are often outdated and unstable; transmission infrastructure is a crucial middle part of the electricity value chain. What measures need to be put in place to develop and sustain the infrastructure?

Irrespective of ownership, the revenue derived from electricity supply needs to support the entire electricity value chain from generation through to transmission and distribution. Underfunding of any part of the chain will cause inefficiencies and wasted expenditure.

In the context of private sector participation, the development of a sustainable asset is highly dependent on the contractual and regulatory structure in which the asset is developed. This should provide the investor with a strong understanding of his cashflows and risks for a defined period of time. Likewise, it should provide the government with a specified level of service delivery for the same period of time.

On a simplistic level, a BOOT-type transmission transaction should encompass defined performance and quality standards for the asset over a period of time (with associated penalties for non-compliance) in exchange for a proven ability and commitment to pay for those services (including facilitating credit enhancement structures where applicable).

From a government perspective, strong coordination between state authorities, a transparent procurement process along with technical expertise will be required to create an attractive environment. Most countries have already developed these capabilities for their private sector generation programs so a transmission program should be feasible.

Multilateral institutions can also play a key role in building capacity in these areas

### Alongside generation and distribution, improving and increasing transmission infrastructure is key to closing the energy access gap. What are the investment opportunities for private sector investors?

There is a considerable deficit of transmission infrastructure across Africa, and this provides the 'opportunity gap' for the private sector.

Investment in transmission infrastructure is likely to follow the same evolutionary process as the various generation programs on the continent. Focussed energy/power development companies will likely develop the initial programs and supported by multilateral and development finance institutions. As these programs gain acceptance, larger IPP's, PE funds, commercial banks and 'secondary market' participants will play a greater role and allow for accelerated build-out.

### Private finance has supported the expansion of electricity transmission infrastructure in many regions of the world, and the same can happen in Africa. Are there success stories that could be adapted to the African context?

There will be definite takeaways from successful markets (North America, Latam and Asia) in terms of structuring and lessons learned.

That said, I don't believe that one model fits all and can be applied seamlessly across all areas. Each region has its idiosyncrasies, and these will need bespoke solutions. There should not be an expectation that the first project will provide the ultimate solution. These programs are evolutionary in nature, and the public and private sectors in Africa have shown a penchant for trying unique solutions.

“ Let's not forget that the private sector has already played a minor role in transmission funding. This has taken the form of either providing asset finance-type structures that have backed straight construction contracts, or the build/transfer model often associated with private sector generation facilities. ”

### To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?

Only three? ...

- Governments should not be afraid to get the opinion of both established private sector developers and multilateral/development institutions before deciding on the structure and procurement of a program. The multilateral/development institutions play an extremely important role, but don't necessarily have all the answers.
- Be willing to coordinate and adopt a multi-departmental approach. Every state authority should understand its role in making the program successful.
- Ensure that the government understands what credit enhancement mechanisms may be required and what that entails.

### Do you think independent power transmission projects (IPTs) could be an effective approach in Africa?

No question - absolutely!

The governments would benefit from a defined build-out, timeline and operational regime without the incurring the immediate capex spend and associated risks of a direct procurement. This model of procuring infrastructure can provide substantial benefits to any economy. Direct benefits include I) inflow of foreign capital and activation of local secondary markets, II) inflow of technical expertise and associated capacity building, III) job creation and iv) a reduction in government capex risk. Indirect benefits flow from the economic activities unlocked by efficient provision of electricity to both business and the community.



Photo Credit - Shutterstock.com



## Theophilus Sackey on the Need for an Enabling Social, Economic & Political Environment to Attract Private Sector

**What are your thoughts on the state of transmission infrastructure in Africa? Is the infrastructure available adequate to meet the current capacity being generated?**

The state of transmission infrastructure in Africa cannot be considered in isolation and separately from the state of the continent's power infrastructure. It is closely linked to the state of the power infrastructure. The current state of transmission system infrastructure in Sub-Saharan Africa, therefore, reflects the generally poor state of the power sector. Insufficient investment, inadequate generation capacity, high transmission losses, low electricity access rates and a poor maintenance culture are some of the pertinent issues that characterise the power sector in Africa, including transmission.

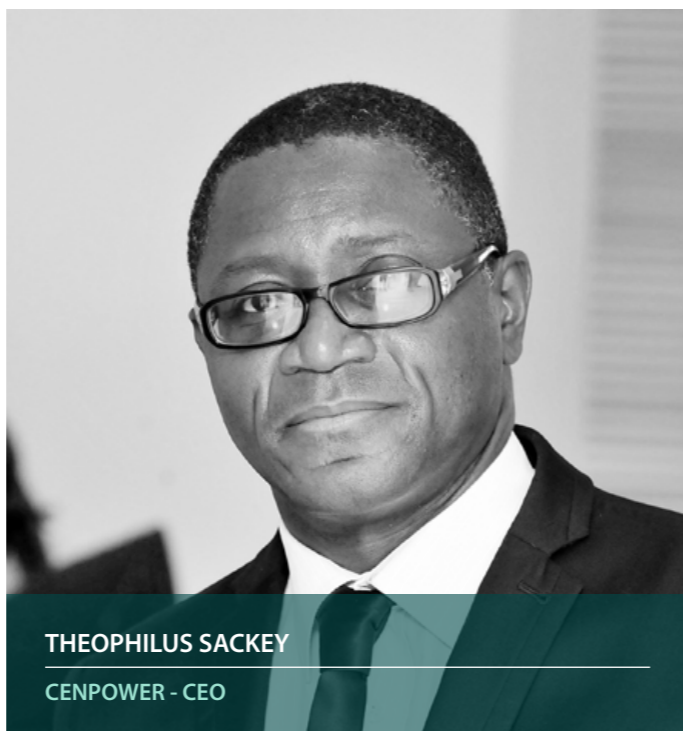
The poor state of the continent's power and transmission infrastructure is evident from the following example. Total installed power generation capacity (kW) per person for Brazil is approximately 0.7 with a corresponding transmission system coverage of about 600km/Million persons. In comparison, Nigeria, the most populous country in Africa, has an installed power generation per person of about 0.07 (average installed power generation per person for West Africa without Nigeria is about 0.05). Nigeria also has a corresponding transmission system coverage of approximately 100km/million persons. With a few exceptions (notably South Africa, Kenya and Ghana), transmission losses in most Sub-Saharan African countries are quite high, reflecting the constrained nature of the power sector in general and the transmission networks in particular. A significant number of transmission lines and associated equipment are old and approaching the end of their useful lives. For example, Nigeria's transmission network is reported to have transmission losses of approximately 7%, which is about twice what should be expected with international best practice. In contrast, transmission losses for South Africa's grid are reported to be about 3% while Kenya and Ghana have transmission network losses of about 4% each.

**Public sector funding has largely financed transmission infrastructure in Africa, what new models of financing can attract private sector funding?**

A recent (2017) World Bank report on power transmission in Africa (Linking-up: Public-Private Partnerships in Power Transmission in Africa) identified privatisation, concessions, Independent Power Transmission (IPTs) and merchant investments as four key models that can be used to attract private sector funding for transmission infrastructure.

The report notes that currently in Africa, experience with private sector participation in the transmission sector is negligible and identifies IPTs to be probably the most promising business model for private sector involvement in transmission. IPTs are reported to have led to substantial private sector investment in other developing countries outside Africa. An example is Chile, a pioneer in power sector reform. In Chile, transmission infrastructure is provided entirely by the private sector.

To successfully attract private sector financing for transmission infrastructure requires an enabling economic, social and political environment. This environment does not exist now in most Sub-Saharan Africa countries. Appropriate allocation of risks and rewards and the introduction of key sector reforms such as independent regulatory institutions for licensing, pricing and operations are part of the critical enabling policies needed to attract private sector financing for transmission infrastructure. Significant experience,



THEOPHILUS SACKEY

CENPOWER - CEO



Collector Substation for Kpone Independent Power Plant- Ghana (2016)

however, has been garnered in private sector financing of power generation infrastructure, which can be useful for financing transmission infrastructure.

For example, the development of the Kpone Independent Power Plant (KIPP) Project, a pioneering example of an Independent Power Producer (IPP) in Ghana, which reached Financial Close in December 2014, can provide useful lessons for financing transmission infrastructure.

The KIPP Project, although an IPP project, included the construction of about 1.5kilometers of 161KV transmission lines as well as a circa 1,000MVA Substation (Collector Substation) which has already been completed, commissioned and handed over to the Ghana Grid Company. This is a practical and innovative example of how transmission infrastructure can be financed, utilising private sector funding.

Based on the experience of the KIPP Project, it is clear that to successfully mobilise private sector capital for transmission infrastructure in Sub-Saharan Africa will require a combination of focused effort, determination, ingenuity and above all attention to the requirements and criteria imposed by both equity and debt markets.

**The power transmission systems that do exist in Africa are often outdated and unstable; transmission infrastructure is a crucial middle part of the electricity value chain, what measures need to be put in place to develop and sustain the infrastructure?**

The power transmission system occupies a unique position in the power sector value chain. As a natural monopoly, a conduit for receiving power from generation stations and delivering same for distribution and the controller of power system stability, the power transmission network has specific distinctive characteristics, as a result of which, it can be argued, makes it difficult to attract private sector investment for its development, construction and operations.

While it has been possible to achieve to an extent acceptance of the idea of private sector participation in the generation and distribution segments of the power sector, it is still difficult to achieve any meaningful private sector investment in transmission infrastructure in Africa.

Measures required to develop and sustain transmission infrastructure are similar to the measures necessary for investment in the other key components of the power sector value chain as earlier indicated. These measures include clarity on policy and regulatory structures, the certainty of revenue and return as well as the security of investments. Strong Government support and political will are essential as, without that, it will be challenging to attract private sector investments. Support from the existing power pools in the region; the Southern Africa Power Pool, the West Africa Power Pool, the East Africa Power Pool and the Central Africa Power Pool, will also be critical.

**Alongside generation and distribution, improving and increasing transmission infrastructure is key to closing the energy access gap, what are the investment opportunities for private sector investors?**

Opportunities to invest in operations and maintenance of existing infrastructure, installation of equipment to reduce line losses, capital investment in new transmission lines and investments in interconnection lines between power pools

**Private finance has supported the expansion of electricity transmission infrastructure in many regions of the world, and the same can happen in Africa. Are there success stories that could be adapted to the Africa context?**

There are many success stories worldwide. For example, the United Kingdom, until 1990 had a transmission grid publicly owned, operated and maintained. At that time, UK experienced significant challenges in expanding transmission assets and resorted to a privatisation model which has turned out to be quite successful. There are currently about six privately owned transmission networks in the UK.

The World Bank report on transmission in Africa also details the cases of Brazil, Chile, India, Peru and the Philippines, countries which have undertaken significant power sector reforms to attract private sector financing. The use of privately financed transmission lines in Brazil, Chile, Peru and India, for example, is reported to have collectively raised over \$24.5 billion of private investment between 1998 and 2015. In Peru, the level of investment from the private sector was initially low. This was mainly attributed to the transmission tariff scheme which did not provide guarantees for the recovery of investments. So again, it is evident that government needs to play a pivotal role to give sufficient confidence to the private sector to invest.

**To attract private sector investment in transmission infrastructure, governments need to adopt policies supportive of this strategy and establish the right business, regulatory and legal environment to sustain investor interest. Can you please share three recommendations on how governments can achieve this?**

- There should be clarity on power sector policy and transparency in the regulation setting. Policies and regulations put in place for the power sector in general and particularly to attract private sector investment in transmission infrastructure should be data-driven, analytical, well researched and based on international best practice.
- It is critical to have a focal point in Government, with full responsibility for the implementation of agreed policies and to align interests amongst the various sector stakeholders. It is not unusual to have divergent interests amongst Government Agencies and a Coordinating Point or Agency in Government to align those divergent views can help in sustaining investor interest.
- The sector should be financially viable to attract private sector investment. Tariffs should, as much as possible be cost-reflective.

**Do you think independent power transmission projects (IPTs) could be an effective approach in Africa?**

Yes. The success stories in Peru, India, Chile and Brazil can be used as blueprints for future IPT investments in Africa.



“ IFC Partners with Gaia to Develop a Series of Renewable Projects in Africa.



**THE INTERNATIONAL FINANCE CORPORATION (IFC), A MEMBER OF THE WORLD BANK GROUP, HAS FORGED A NEW PARTNERSHIP WITH GAIA ENERGY TO CREATE A JOINT PLATFORM FOR THE DEVELOPMENT OF WIND POWER AND OTHER RENEWABLE ENERGY PROJECTS IN AFRICA.**

Gaia Energy is a Moroccan renewable energy developer active in 10 countries across Africa. The new joint platform will start with a pipeline of 22 projects in nine countries in North, West and East Africa, representing a pipeline under development of more than 3 gigawatts. Originally developed by Gaia Energy, this pipeline will be progressively enlarged to new countries across the continent.

“IFC’s expertise in financial structuring and mobilization as well as its environmental and social safeguards ideally complements Gaia’s tailor-made approach to develop projects in new markets,” said Moundir Zniber, Founder and President of Gaia Energy. “Our partnership is a key step in expanding our business in the countries where we are present, and hopefully beyond. IFC and Gaia share the same values and vision regarding sustainability and the importance of South/South Cooperation to build tomorrow’s Africa. Both work to power the continent through the adoption of renewable energies and sustainable development principles.”

The joint platform will be implemented under IFC InfraVentures, a \$150 million global infrastructure project development fund created as part of the World Bank Group’s efforts to increase the pipeline of bankable projects in developing countries. It will also be supported by the €114-million Finland-IFC Blended Finance for Climate Program, which helps spur private sector financing for climate change solutions, especially innovative and early-stage projects in emerging markets.

“Wind energy and renewable energy, in general, are priority areas identified in the World Bank Group’s strategy to advance climate solutions led by the private sector. IFC is pleased to partner with Gaia Energy and leverage a quality project pipeline in countries with strong wind potential,” said David Donaldson, IFC Head of InfraVentures for Sub Saharan Africa. “IFC’s support will help Gaia in its strategic choice of countries where efforts should be intensified, and in taking projects to financial close.”

The energy gap is a major impediment to Africa’s development. Today, 650 million Africans do not have access to electricity and increased investment is needed to meet the continent’s fast-growing energy demand. Renewable energy offers an opportunity to accelerate access to clean, affordable electricity and to attract private investment that will create jobs.



www.ifc.org

**ABOUT IFC**

IFC, a member of the World Bank Group, is the largest global development institution focused on the private sector in emerging markets. Working with more than 2,000 businesses worldwide, we use our capital, expertise, and influence to create markets and opportunities in the toughest areas of the world. In FY17, we delivered a record \$19.3 billion in long-term financing for developing countries, leveraging the power of the private sector to help end poverty and boost shared prosperity.

# AfIDA Members and Partners

AfIDA Would Like to Thank it’s Partners for your Continued Support in Driving the Project Development Eco-system in Africa.







[www.afida-africa.org](http://www.afida-africa.org)



[precious.nkandu@afida-africa.org](mailto:precious.nkandu@afida-africa.org)



Ebene Esplanade,  
24 Bank Street, Cybercity, Ebene, Mauritius



[info@afida-africa.org](mailto:info@afida-africa.org)

Issue Number 03

June - August 2018

Copyright © 2018 AfIDA  
All rights reserved



AfIDA

CONNECT WITH US



AfIDA\_Africa