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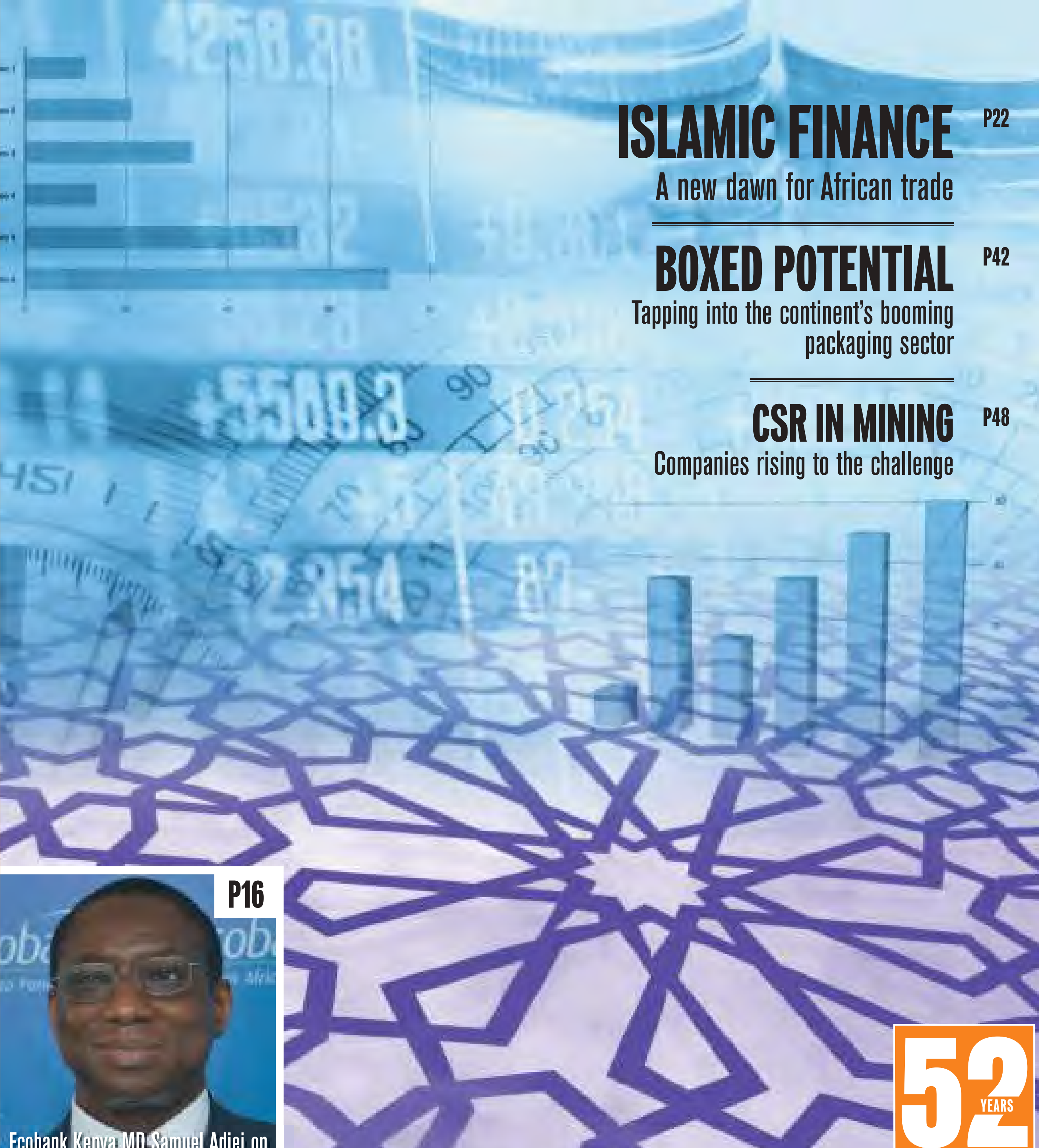

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Editor's Note

A second revolution in natural gas is on the horizon and Africa is in a prime position to reap the rewards. The International Energy Agency's (IEA) recent announcement that liquefied natural gas (LNG) will play a leading role in the evolution of the global energy mix – particularly in the long-distance gas trade – is fundamentally important for the continent's renewable agenda, shaking up contractual changes and flexibilities in transportation. Renewables themselves have been branded "the growth story" of the IEA's World Energy Outlook 2016 and are expected to account for more than an 80 per cent share of low-carbon fuels and technologies to 2040. As *African Review* went to press, East Africa's largest photovoltaic solar plant launched in Uganda – a 10MW grid-connected facility comprising 32,680 solar panels – to generate clean and reliable electricity to 40,000 homes, schools and businesses in the country. No doubt we can expect to see plenty more of these projects in the near future. Inside the December/January issue, *African Review* examines the potential for Islamic financing, following five Sukuk listings issued by Côte d'Ivoire, Senegal and Togo worth a collective US$1.3bn at the BRVM Regional Stock Exchange. While still in its infancy, Islamic financial mechanisms are set to rise in popularity in the continent. In our profile interview, Ecobank Kenya MD Samuel Adjei speaks extensively about new digital banking horizons and opportunities to strengthen financial services in the East African Community. Plus, discover how Uganda is expanding rural electrification, how international packaging companies are tapping into increased demand for services, and what mining corporations are doing to address the essential corporate social responsibility agenda. Enjoy the issue.

Luke Barras-Hill, *Editor*

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Examining how heavyweight mining companies are addressing the importance of corporate social responsibility

Kenya Power switches to local equipment suppliers

Kenya's power utility, Kenya Power, has spent US$58mn to source locally assembled transformers in the first quarter of 2016/17 in line with the 'Buy Kenyan, Build Kenya' initiative designed to promote the local manufacturing sector.

The company has also purchased pre-paid meters worth US$49mn this year from the local market.

In July, Kenya Power published new procurement guidelines that stated that 80 per cent of all electricity distribution equipment will be sourced locally, giving preference to local investors. Out of the utility's capital expenditure budget of US$2bn for the last four years, US$1bn has been spent on the purchase of locally manufactured electricity distribution equipment.

Kenya Power is looking to buy locally assembled transformers during the 2016/17 financial year (Source: Shutterstock gyn9037)

The utility also stated that the new procurement guidelines have already attracted three international companies – Pan African Transformers, Yocean Group Limited and Continental Transformers – to set up manufacturing plants in the country.

The utility stated that by supporting the manufacturing sector, it will boost the company's core business as industries account for more than 60 per cent of Kenya Power's electricity sales revenue.

Kenya Power's managing director and CEO Ben Chumo said, "Kenya Power has taken a deliberate step to prioritise purchase of equipment and materials from the local market to encourage manufacturers to set up plants in Kenya. The aim is to retain at least 80 per cent of the company's annual procurement budget, which stands at US$1bn, in the country."

EAST AFRICAN PRIVATE EQUITY INVESTMENT POTENTIAL GOING STRONG

The latest Spotlight on East Africa Private Equity (PE) research report by the African Private Equity and Venture Capital Association (AVCA) reveals that East Africa is one of the continent's fastest-growing regions, driven by diversified markets and strong economic development. The region continues to experience robust PE activity and an increasingly strong exit environment at a time when other regions have been exposed to commodity price-driven volatility.

The report details that East Africa has reported a total of 167 PE deals between 2010-2016 H1, with a total deal value of US$1.4bn. Key regional markets in Kenya, Uganda and Tanzania have demonstrated strong growth figures. Kenya is the region's largest market with 53 per cent of reported PE deals followed by Uganda with 19 per cent and Tanzania with 10 per cent.

The report also highlights that although PE deal activity in East Africa is more focused on SMEs, a handful of large transactions have significantly affected year-on-year total deal values in the past.

The number of PE exits increased from a low base of 12 exits in 2010-2012 to 23 exits in 2013-2016 H1. For detailed insight into Africa's PE environment, see page 20.

PCCW GLOBAL PARTNERS WITH DJIBOUTI DATA CENTRE FOR PAN-AFRICAN EXPANSION

PCCW Global, the international operating division of HKT, Hong Kong's premier telecommunications service provider, has announced plans to partner with the Djibouti Data Centre (DDC) to help facilitate network expansion and the provision of co-location and undersea fibre cable access services in East Africa.

The Djibouti Data Centre was built to Tier III data centre standards and serves as a major meeting point for undersea fibre cable systems including the new Asia-Africa-Europe-1 (AAE-1) submarine cable designed to connect Asia, the Middle East, Africa and Europe. The DDC will support PCCW Global and its Asia-Africa-Europe-1 (AAE1) submarine cable to deliver digital solutions in Asia, the Middle East, East Africa and Europe

Jordick Wong, senior vice president, product and vendor management at PCCW Global said, "The DDC is an important element of our wider pan-African development and expansion plans. The addition of AAE-1 to PCCW Global's existing undersea fibre cable assets in the region will enable us to provide even more robust services, along with lower latency and increased diversity, boosting services levels for our customers."

He added that the AAE-1 will stretch approximately 25,000 km and employ 100 Gbps technology, with a capacity of more than 40 terabits to provide customers with low-latency and direct connectivity around the world.

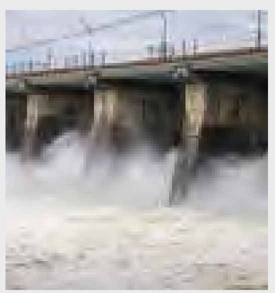
The addition of the AAE-1 cable system is expected to establish the DDC as the leading carrier neutral data centre hub in East Africa serving global and regional telcos, MNOs, ISPs, and CDN providers..

BRIEFS

KenGen earns revenue from emergency power generation

Kenya Electricity Generating Company (KenGen) has announced it has earned US$275,000 in revenue in the financial year to June 2016 from managing Aggreko's emergency power. KenGen disclosed this revenue in its latest annual report, which also shows that the management income grew 11 per cent from US$245,000 a year earlier. KenGen earns ¢0.75 per kilowatt-hour in management fees for all the temporary power generated by Aggreko in Muhoroni and Garissa, according to the firm.

"During the year the company managed an emergency power supply project known as Aggreko international projects as an implementing commissioning agent on behalf of the Ministry of Energy and Petroleum," said Kengen managing director Albert Mugo.



The plant is expected to produce 80MW of electricity (Source: Shutterstock Laborant)

Initial contract signed for Rusumo power project

Two contracts, worth US$75mn were concluded for the initial construction works to begin for the Regional Rusumo Falls Hydroelectric Project.

The first contract was signed between Rusumo Power Company Limited (RPCL) and a consortium of contractors, including CGCOC Group Ltd - Jiangxi Water and Hydropower Construction Company Ltd Joint Venture (CGCOC - JWHC JV).

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Bosch Power Box launched in Nigeria

German-based multinational Bosch Group has announced plans to launch the Bosch Power Box (BPB) initiative to support artisans and young entrepreneurs in Nigeria.

According to Bosch, BPB will assist thousands of young entrepreneurs and artisans in Nigeria – including plumbers, carpenters, welders and electricians – in growing their businesses by providing access to the latest in technology as well as training and technical and financial support.

The initiative aims to create, up-skill and grow small businesses and bring them into the formal, mainstream economy.

Bosch will provide artisans with training on how to use the tools (Source: Bosch)

It is a long-term project designed to foster entrepreneurship and ensure a smooth transition for small businesses from the informal to formal sectors.

The initiative will allow Nigerian artisans to buy, lease or rent the latest power tools developed by Bosch to be used at the hubs. By providing better access to technology, the initiative aims to assist Nigerian artisans in growing their businesses and improve the quality of the products manufactured.

Bosch will provide artisans with product application services on how they can use the tools correctly, maintain and service them, and ensure a prolonged lifespan.

Each BPB is to have managers, technical staff and trainers, all of whom have received dedicated training from Bosch.

Through a partnership with Equity Bank, Bosch will also provide the entrepreneurs financial training and budget management assistance.

Bosch Africa president Markus Thill said, "Each Bosch Power Box will also provide courses on product application and safety.

"Economic prosperity is about creating opportunities from the ground up to benefit individuals, communities, countries and the global community, and this is what we at Bosch aim to do."

Bosch Group plans to establish 10 Bosch Power Boxes with the Nigeria in line for the first launch.

NIGERIA BEGINS CONSTRUCTION OF AFRICA'S LARGEST DEEP SEA PORT

The construction of Africa's largest deep sea port in the Badagry area of Lagos has begun, Nigeria has announced.

The joint venture between the Integrated Logistics Services (INTELS) and the Nigerian Port Authority (NPA) is expected to cost US$2.6bn.

The INTELS management commented that the project is on schedule and revealed its plans to invest in concessioned terminals in line with what is stated in the concession agreement between NPA and the Ministry of Transport.

The port is expected to boost the country's economy by generating about 500,000 direct and indirect employment opportunities.

NIGERIA RE-EXAMINES TRADE AGREEMENTS

The Nigerian Federal Government is in the process of negotiating 21st century Nigerian free trade agreements, with the goal of expanding market opportunities for Nigerian companies. It is also re-examining the controversial Economic Community of West Africa States (ECOWAS) common external tariff. The announcement was made by Federal Ministry of Industry, Trade and Investment (FMITI) minister Okechukwu Enelamah during a press conference at the Ministry in Abuja.

He said the Ministry is updating Nigeria's trade policy priorities by working to correct imbalances in the country's trade relationships and reversing negotiating failures. One of the items it is examining at the moment is the ECOWAS CET.

CET is a regional tariff structure for West Africa for imported goods, which was implemented in 2015 with a transitional period of implementation to 2020. It has been met with a degree of criticism and opposition from manufacturers and industrialists who feel that it does not take into account the sensitives of the Nigerian industrial and manufacturing sector.

The FMITI is also conducting a feasibility study for the development of six special economic zones (SEZs) and is taking steps to secure funding in the Nigerian budget for the first development phase, due to be launched in 2017.

The Export Expansion Grant (EEG), which was suspended in 2014, is also expected to resume in 2017. Its aim is to expand the volume and value of Nigeria's exports, diversifying export products and improving the global competitiveness of Nigerian exporters. The minister commented that the scheme will be included in the budget in order to manage the impact on government revenue and promote transparency.

BRIEFS

GE to build five solar power plants in Nigeria

Nigeria has signed a memorandum of understanding (MoU) with General Electric (GE) for the construction of five solar power plants in the north of the country.

The plants have an expected capacity of 100MW each.

The implementation of the solar plants will benefit five states in West Africa, including Borno, Kebbi, Nasarawa, Niger and Taraba

The electricity generated is expected to boost economic activities in the states, in addition to supplying power to schools and hospitals. The scheme aims to serve as a vehicle for the economic recovery of Nigeria's northern states.

The project is being coordinated by the Northern Nigeria Global Economic Re-integration Programme.

Morocco, Nigeria to build trans-African pipeline

Morocco and Nigeria have announced plans to jointly develop a new regional pipeline connecting the two countries in order to bring resources from West Africa into Morocco, then further afield.

A new partnership between Ithmar Capital, Morocco's Sovereign Wealth Fund and Nigeria's Sovereign Investment Authority will support the pipeline.

The trans-African pipeline aims to support the creation and growth of industrial hubs in order to attract foreign investment in the regions. The initial plans for the project are to facilitate the expansion of a number of other sectors around the pipeline including food processing and industry in order to improve the competitiveness of exports, particularly in West Africa.

Chinese fibre optic plant opens in Durban's Dube TradePort

China's Yangtze Optics Africa Cable's (YOAC) new R150mn (US$10.7mn) fibre optic cable manufacturing site in Durban's Dube TradePort Special Economic Zone is now operational – after just six months of construction.

The plant opened on 14 December for production line testing before full commercial operations begin in early 2017. It will produce fibre optic cabling to international standards set by parent firm Yangtze Optical Fibre and Cable (YOFC), a leading manufacturer and supplier of telecoms optical fibre.

The new fibre optic plant in Durban is now operational (Source: Shutterstock ThomBal)

The project is a joint venture between YOFC and Mustek Limited, a JSE-listed company.

The investment highlights growing Chinese interest in the South African economy, and in building a manufacturing presence on the African continent, according to Minister of Trade and Industry, Rob Davies, who welcomed the inauguration of the plant. He also said it highlighted the potential role of special economic zones like Dube TradePort.

"The build and installation phase of the project was completed by end of November 2016, a mere six months from the start of the plant construction," he said.

The new plant, with an initial capacity of one million fibre kilometres, brings new modern manufacturing equipment and processes into the area in the manufacturing of optical fibre cable.

Davies also said it is YOAC's intention to manufacture a range of new generation cable products for the local telecoms and broadband market, as well as key export markets in west and east Africa.

The project has already generated 42 jobs, with a further 80 opportunities expected in 2017.

Hamish Erskine, chief executive of Dube TradePort Corporation, said: "The opening of this world class optical fibre cable manufacturing facility is a part of Dube TradePort's strategy to attract a cluster of electronics manufacturers into the special economic zone. This strategic location will allow Yangtze Optics Africa Cable to service their local, regional and international clients through King Shaka International Airport, which has over 900 connections to destinations; while at the same time the strategy creates further opportunities for local jobs."

GE STEAM POWER SYSTEMS SCOOPS MEDUPI PLANT AWARD

GE's Steam Power Systems, part of GE Power, has won a gold award for excellence from the International Project Management Association for its work on South Africa's giant Medupi power plant.

Once completed in 2020, Medupi, which will comprise six 794MW units, will generate enough power to meet the electricity needs of 3.5mn households. It will be the fourth largest coal-fired plant in the southern hemisphere. The IPMA award recognises work that is an example of excellent project management.

"Our team has been working with Eskom on the Medupi Power Plant since 2007. The plant itself is the fourth largest coal-powered plant in the southern hemisphere, said GE's Steam Power Systems' Lee Dawes
According to GE, the plant features six units with each having a capacity of 794MW and an installed capacity of 4,764MW.

"This is a first for GE Power and Steam Power Systems in Africa and it certainly is celebration of the work we've done in South Africa: executing a significant project that will deliver power to millions of people," added Dawes.

SOUTH AFRICA TRAILING NAMIBIA IN ENTREPRENEURSHIP STAKES, STUDY SHOWS

South Africa has work to do to catch rival African states in nurturing entrepreneurship.

Namibia came top in a recent Global Entrepreneurship Index, ahead of South Africa (which only ranked 46th) and a number of other larger, more prominent economies.

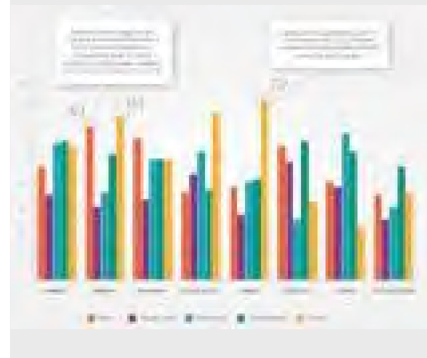
Namibia scored 42nd overall - ahead of the likes of Nigeria, Kenya and South Africa.

The entrepreneurship study was conducted by the Mara Foundation and Opinium Research.

Commenting on the findings, Akinwumi Adesina, president of the African Development Bank, said the index could provide insight on how Africa can unlock the potential of its youth to boost entrepreneurship.

"As populations are ageing rapidly in much of the rest of the world, Africa can reap the economic dividends of its growing labour force," Adesina said.

"Africa is poised to become the next centre for entrepreneurship, but we must provide Africa's youth with the required skills."



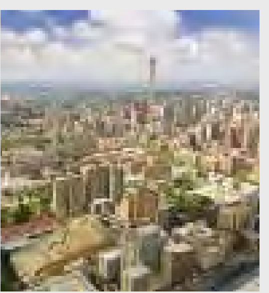
Namibia's entrepreneurs lead South Africa's (Source: Global Entrepreneurship Index)

BRIEFS

Sibanye Gold has agreed a deal with Stillwater Mining Company (Source: Shutterstock TTstudio)

Sibanye Gold in Stillwater Mining takeover

South Africa's Sibanye Gold Limited is to acquire Colorado-based Stillwater Mining Company in a US$2.2bn deal, subject to US government approval. Stillwater is the largest primary producer of Platinium Group Metals (PGMs) outside of South Africa and Russia. PGMs are precious metals used in catalytic converters to reduce pollution from vehicles, as well as fuel cells, jewellery, and other applications.



The SA process industries have a new standard (Source: Shutterstock tusharkoley)

New milestone for South African safety standards

The South African Bureau of Standards has officially adopted the functional standard IEC 61511 for safety instrumentation systems. The standard has been described as a milestone for the process industries. It now becomes the applicable benchmark for protection systems across industries including refining and storage, biofuels, chemicals and power generation.

Algeria ready to crank up intra-African trade

Algeria's private sector is keen to find new ways of working together with South Africa and other countries to boost intra-African trade.

A meeting between South African and Algerian officials took place at December's African Investment and Business Forum, held in Algiers, which attracted over 3,000 delegates from across Africa.

The vice president of the Algerian Chamber of Commerce and Industry, Rhiad Amour, said his country wants to build stronger partnerships across the continent – including South Africa, its largest economy.

A meeting between Algerian and South African officials took place in Algiers in December (Source: Shutterstock Pictureflex)

He said intra-African trade currently accounted for only 10 per cent, compared to 80 per cent of trade between US states and 50 per cent in Europe.

"We need to work together, know what each of us produce and what our capabilities are," he said.

Amour said Algeria was keen to diversify its economy away from its traditional reliance on oil and gas and invited South African businesses in Algeria to forge new partnerships.

South Africa's ambassador to Algeria, Thokozani Dlomo, said prospective investors should develop a long-term strategy.

"Algeria is a historically socialist country and they have recently developed a strategy that seeks to create an environment that is inclusive of business. The country is making strides and needs South Africa to be successful."

He identified opportunities in mining, tourism, energy and construction, among others."We are interested in infrastructure and construction projects, as well as social housing projects," added Vuyiswa Ndzakana, co-chairperson of the Women Empowerment Advisory Council in South Africa's Department of Public Works.

There is already a strong platform for the two sides to build on. Algeria has been South Africa's largest trading partner in North Africa for some time, accounting for 43 per cent of its total trade with the region from 2011 to 2015.

Danisa Baloyi, the president of the Black Business Council, part of South Africa's 80-strong delegation to the conference, said, "This shows the seriousness and commitment that we as Africans have to do business with each other. Doors have been opened, the ball is in our court."

GE USES GLOBALSTAR TO PROTECT WORKERS

Globalstar's SPOT Gen3 technology is being rolled out to safeguard workers at more renewable energy sites across North Africa following a recent deal with General Electric Wind Energy (GEWE).

The SPOT Gen3 safety device is deployed to track and protect workers as they install, operate and maintain onshore wind power plants in emerging markets such as Africa.

Globalstar says the technology, which is already being used to support renewable energy workers in Egypt, was chosen for its satellite tracking, one-touch SOS capability, superior reach and reliability.

"Our staff sometimes work in very challenging circumstances; wherever they are, we need to know they are safe and are connected," said Carlos Chivite Trincado, GEWE's onshore wind energy environment health and safety leader. By mid-2017, GEWE personnel working at approximately 70 wind farms in EMEA and Asia are expected to benefit from enhanced safety through SPOT.

OEG OFFSHORE TO SUPPLY MODULES FOR NORTH AFRICA OFFSHORE INDUSTRY

Offshore cargo carrying and module firm OEG Offshore has secured additional rental and sale contracts for new units in Libya, Morocco, Tunisia and Egypt.

The UK-based company specialises in the design, build, rental and sale of cargo-carrying units and modular cabins for the offshore oil and gas market.

Collectively, the contracts are worth US$1.2mn, but this also includes additional work in Europe and the Middle East.

In Libya and Egypt, OEG will provide several DNV 2.7-1 A60 Zone 2 (ATEX Cat 3 compliant) Specialist Technician Workshops on a long-term rental basis for maintenance work and operations.

The deal also includes a 20ft DNV 2.7-1 A60 Zone 2 Critical Operations Fire and Gas Control Module for an onshore gas plant in Tunisia.

In Morocco, the Aberdeen firm will deliver standard A60 Zone 2 rental cabins to various existing customers.

Rob Goodall, vice president of sales at OEG Offshore, said the wave of new contracts underscores the firm's long-term and loyal customer relationships. "It also demonstrates our competitiveness in the current climate and our ability to provide tailored solutions with added value for our customers."

BRIEFS

Volkswagen, SOVAC to begin Algeria vehicle assembly

The VW dealership in Algeria now includes more than 100 facilities

Volkswagen has announced it is to commence local assembly of vehicles in Algeria, after signing a deal with its local car importer SOVAC Production.

The joint venture will aim to produce more than 100 vehicles per day from a new US170mn plant in the western province of Relizane, 200km west of Algiers, from June 2017.

The facility will assemble vehicles under the Volkswagen, SEAT and Skoda brands.

Moroccan firms grow activity in sub-Saharan Africa

Moroccan companies are growing their revenues in the sub-Saharan African markets, global business consulting firm BearingPoint has observed.

The five countries where 250 Moroccan and French companies surveyed are most prevalent are Algeria, Cameroon, Ivory Coast, Mali and Senegal, according to the third edition of BearingPoint's International Development Barometer of International Firms.

Senegal, Ivory Coast and Gabon top the list of locations for Moroccan companies in question.

Meanwhile, Ivory Coast, Morocco and Cameroon hold the top three places for the French groups questioned, which are also based in some English-speaking areas such as Nigeria, South Africa and Kenya.

Morocco's renewable limelight

Morocco is targeting 42 per cent of its electricity generation needs from renewables by 2020 against a backdrop of promising sustainable projects in the MENA region

Renewables will be the fastest-growing source of electricity over the next five years, according to the IEA (Source: Shutterstock JNT Visual)

As one of North Africa's most vibrant gateways, Morocco is mobilising efforts towards a more sustainable future.

The Kingdom of Morocco recently became an Association Country of the International Energy Agency (IEA) on 14 November, making it the first country in the Middle East and North Africa to join the IEA's Association initiative. At the time the partnership was agreed, Paul Simons, the IEA's deputy executive director, praised Morocco's leadership and commitment to the renewable energy agenda as "a model for other countries in North Africa, sub-Saharan Africa and beyond, particularly in the energy sector".

The Association programme provides the IEA with a platform to engage extensively with partner countries on energy security, energy data and statistics, as well providing training and capacity-building activities.

Heavily dependent on imported fuels for its energy needs, it continues to take a number of bold steps to diversify its energy mix. Resources come in abundance – mainly consisting of wind, solar and hydro-power. The government is on a drive to increase its share of renewable energy in its energy mix, with a target to raise its share of electricity generating capacity from renewables to 42 per cent by 2020 and 52 per cent by 2030.

This coincides with a plan to reduce consumption by 12 per cent by 2020 and 15 per cent by 2030, the IEA says.

The Moroccan Agency for Solar Agency (MASEN) performs a crucial role in attracting private investment and brining together government and industry stakeholders to spearhead such efforts.

Noor 1, the first phase of the US$3.9bn Noor CSP solar power plant at Ouarzazate, commenced operations earlier this year, with a capacity of 160MW. Once completed in 2018, the complex, which is being developed on a build, own, operate and transfer (BOOT) basis by ACWA Power Ouarzazate, a consortium of ACWA Power, A, Aries and TSK, will be the largest CSP power plant in the world, with a capacity of over 500MW, producing enough energy to power more than one million homes.

Despite these positive developments, the share of renewables in electricity generation in the MENA region remains relatively low compared with other regions of the world. Further measures to improve regulatory frameworks, strengthen institutional capacity, incentivise private investment, promote R&D and encourage local industry will help MENA to fully capitalise on its

Many countries in the GCC have ambitious clean energy action plans and renewable energy targets (Source: Shutterstock Philip Lange)

renewable energy potential. Increasingly this makes sound commercial, as well as environmental, sense.

MENA's push

Elsewhere, the MENA region continues to pursue promising sustainable energy projects, a key driver being falling technology costs. 2015 marked a 'turning point' for renewables, according to the IEA's recently issued Medium Term Renewable Market Report. Over the next five years renewables will be the fastest-growing source of electricity generation, with their share growing to 28 per cent in 2021 from 23 per cent in 2015, thanks to strong policy support, technology developments and sharp cost reductions. Over this period, costs are expected to drop by a quarter in solar PV and 15 per cent for offshore wind. Further ahead, the IEA forecasts that renewables are set to account for 60 per cent of all new power generation capacity to 2040.

Positive picture

Developments in the MENA region reflect this positive picture. The GCC countries alone are expected to invest more than US$300bn into some 20 renewable energy projects by 2020, according to the Gulf Organisation for Industrial Consulting, with 75GW of renewable energy projects worth US$299bn already in the pipeline.

High levels of solar irradiance, and the falling cost of solar technologies, particularly PV modules, are spurring the development of solar PV. Other factors driving the growth of renewable energy are the growing demand for power, the drive to diversify the energy mix, and the need to promote local industrial development and create employment, as well as meet emissions targets.

The gradual reduction of subsidies for fossil fuels in the GCC countries is also contributing to an enabling environment for the development of renewables.

Many countries in the region now have ambitious clean energy action plans and renewable energy targets.

"The GCC region can cut its annual water use by 16 per cent, save 400 million barrels of oil, create close to 210,000 jobs and reduce its per capita carbon footprint by eight per cent in 2030 – all by achieving the renewable energy targets that national and sub-national governments have already put in place," comments the International Renewable Energy Agency (IRENA).

The UAE, which plans to generate 30 per cent of power from clean energy by 2030 and create 70,000 jobs in the renewable energy sector by 2020, continues to play a leading role in the region. Record low solar tariff levels of under three cents per kilowatt hour have been achieved in recent tenders, reflecting the drop in price in solar PV technology and reduced costs for borrowing.

> The GCC countries alone are expected to invest more than US$300bn in renewable energy projects by 2020
>
> GULF ORGANISATION FOR INDUSTRIAL CONSULTING

The role of Abu Dhabi's Masdar in advancing the development of clean energy in the Middle East and internationally, and promoting technology innovation is well-known; examples of recent innovations include a low-cost solar device that can convert sunlight to steam, developed by the Masdar Institute of Science and Technology in collaboration with the Massachusetts Institute of Technology.

Not to be outdone, Dubai is progressing a number of initiatives as part of its Dubai Clean Energy Strategy 2050 to transform the emirate into a global hub for clean energy and green economy, with the aim of providing 75 per cent of Dubai's energy through clean sources by 2050. The Dubai Electricity and Water Authority (DEWA) is progressing the 800MW third phase of its Mohammed bin Rashid Al Maktoum solar park, to be

constructed by a Masdar-led consortium on the independent power producer (IPP) model, which will have a capacity of 5,000MW by 2030. And Shams Dubai, DEWA's initiative to encourage domestic and industrial users to install solar PV panels to generate power, has met with considerable success.

Saudi Arabia plans to generate 9.5 GW/hour of electricity from renewable energy by 2030, and the creation of 7,700 jobs in this sector by 2020, while Oman is now looking at large-scale solar plants on the IPP model with a focus on in-country value and building local capabilities.

Pressing need

For countries lacking fossil fuels, the need to develop renewable energy resources is particularly compelling. In October 2016, Masdar signed a power purchase agreement (PPA) with Jordan's National Electric Power Company (NEPCO) for a 200MW solar plant, which will be the largest solar installation in Jordan once complete.

"The solar power plant will raise the international profile of Jordan as a key destination for utility-scale renewable energy projects, stimulate local job creation and knowledge transfer, and further incentivise the option of commercial clean energy in the MENA region," Jordan's Minister of Energy and Mineral Resources Dr Ibrahim Saif said at the signing ceremony.

This follows the inauguration of the 117MW Tafila wind farm in December 2015, the first utility–scale wind project in the MENA region, developed by the Jordan Wind Company, a partnership between InfraMed, Masdar and EP Global Energy. Jordan has seen steady growth in its solar industry, with various utility-scale developments underway, and is currently evaluating tenders for its Green Corridor project, funded by the European Investment Bank. This should boost renewable energy development by allowing solar and wind generated in the southern regions to be transmitted to other parts of the country. ■

MASEN FORGES PARTNERSHIPS FOR NOOR PV I PROGRAMME

The Moroccan Agency for Solar Energy (MASEN) has secured financing and development contracts to develop solar powerplants as part of the NOOR PV I programme.

MASEN has selected ACWA Power and Chint to design, finance, construct, operate and maintain the NOOR PV I programme.

According to the state-owned company, the combined rate per kilowatt hour for the NOOR PV I programme comes to US$4.53, one of the most competitive tariffs on the global scale.

Noor PV 1 is the first programme of the NOOR solar plan and is composed of three projects.

These cover NOOR Ouarzazate IV, with a maximum capacity of 70MW, located in the Masen complex; NOOR Laayoune with a maximum capacity of 80MW; and NOOR Boujdour with a maximum capacity of 20MW.

MASEN president Mustapha Bakkoury stated, "With these three solar plants, MASEN continues to expand its portfolio of multi-technology projects, always with the goal of responding in the best way possible to the needs of our client and partner the National Agency for Electricity and Drinking Water (ONEE).

"This is also the consolidation of long-standing partnerships, both with the KfW, which is financing the fourth and last phase of the Ouarzazate complex, and with ACWA Power, and both assure us that we will develop projects meeting international standards at Ouarzazate, Laayoune and Boujdour."

The three projects are developed by MASEN in the framework of a three-part independent power production (IPP) plan with ONEE and that the consortium was selected through an international call for proposals.

The innovative institutional development adopted by MASEN allows for optimal risk alignment and for reduced production costs.

This financing is part of the ongoing support provided by the KfW, one of MASEN's strategic partners, and the German authorities, expressing their confidence in the projects developed by MASEN.

All three solar projects will be financed by the first green bonds in Morocco, issued by MASEN

A version of this story first appeared in Technical Review Middle East Vol 12/issue six 2016

The first photovoltaic phase of the Noor solar plan (NOOR PV 1 programme) (Source: ACWA Power)

Upcoming Events Calendar 2016

JANUARY

18-20

MODERN AIRPORTS AFRICA 2017
Nairobi, Kenya
www.modernairportsafrica.com

24-26

MULTIMODAL WEST AFRICA
Lagos, Nigeria
www.multimodalwestafrica.com

25 - 27

REGIONAL ENERGY CO-OPERATION SUMMIT
Abidjan, Côte d'Ivoire
www.energynet.co.uk

26 - 27

AGRITECH EXPO TANZANIA
Arusha, Tanzania
www.agritechexpotanzania.com

30-31

AFRICA ROAD & BRIDGE FORUM 2017
Johannesburg, South Africa
www.africaroadsforum.com

FEBRUARY

6-9

INVESTING IN AFRICAN MINING INDABA
Cape Town, South Africa
www.miningindaba.com

13-16

AFRICA FINANCE & INVESTMENT FORUM (AFIF)
Nairobi, Kenya
www.emrc.be/our-platform/forum-b2b/afif

15-17

CIBEX/SCALEX EAST AFRICA
Nairobi, Kenya
www.cibexeastafrica.com

21-22

AFRICA ENERGY INDABA
Johannesburg, South Africa
www.africaenergyindaba.com

21-23

AIR CARGO AFRICA
Ekurhuleni, South Africa
www.stattimes.com/aca2017/

21-23

WEST AFRICAN INTERNATIONAL PETROLEUM EXHIBITION & CONFERENCE (WAIPEC)
Lagos, Nigeria
www.waipec.com

22-23

ECOMMERCE MONEYAFRICA CONFEX
Cape Town, South Africa
www.ecommerce-africa.com

27-02 March

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www.nigeria-power.com/

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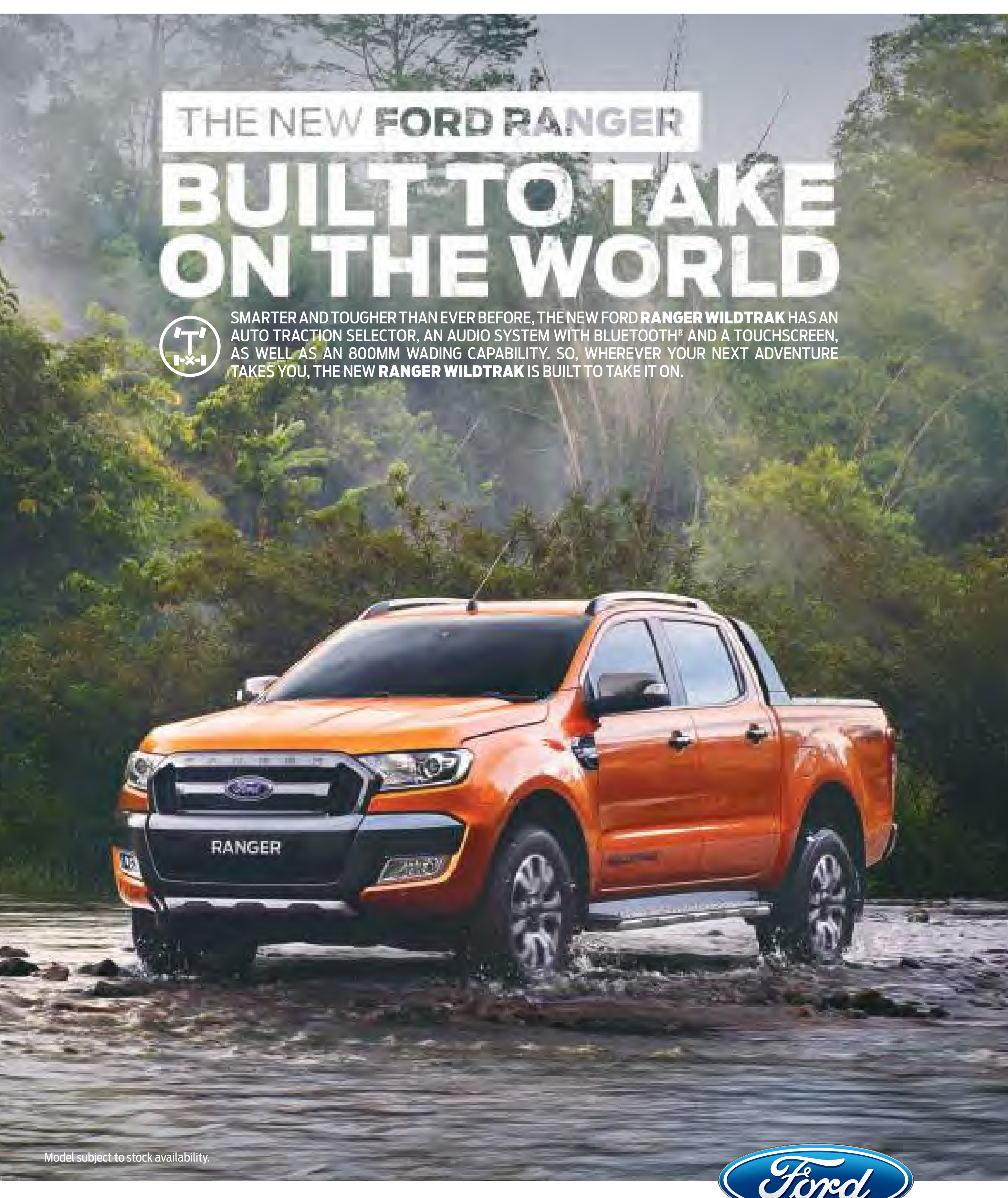

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UGANDA AND UK SIGN AGREEMENT ON ENERGY

Some of Uganda's poorest will have access to clean, reliable and affordable energy (Source: Andrew Regan/Commons)

An Energy Africa Compact has been signed between Uganda and the UK in an attempt to provide the poorest Ugandans with access to clean, reliable and affordable energy.

The compact sets out concrete actions to facilitate a stronger and more sustainable market for solar home systems by removing barriers to energy markets for private sector investment and innovation, says the British High Commission in Kampala.

At the signing, Dr Stephen Isabalija, permanent secretary at the Ugandan Ministry of Energy and Mineral Development, said:

"The objective of the Energy Compact is to document strategic areas to be addressed to accelerate the adoption of solar home and institutional lighting systems to achieve 100 per cent electrification by 2030."

In Uganda, more than 30 million people do not have electricity, says the High Commission.

The Ministry has created an environment for solar businesses that includes VAT exemption for major solar components, support for private sector companies, provision of solar end-user subsidies, capacity building through training of technicians and establishing solar financing models.

Lack of energy access is stifling economic growth, with power outages costing countries like Uganda between one and two per cent of their annual GDP, the High Commission adds.

http://www.africanreview.com/energy-a-power/power-generation/uganda-and-uk-sign-agreement-to-improve-energy-access

MOROCCO AND NIGERIA ANNOUNCE TRANS-AFRICAN PIPELINE

Ithmar Capital and Nigeria's Sovereign Investment Authority will support the pipeline (Source: Tarotn/Commons)

Morocco and Nigeria have announced they will jointly develop a new regional pipeline connecting the two countries in order to bring resources from West Africa to Morocco, then further afield.

The announcement is designed to support the creation and growth of industrial hubs to attract foreign investment.

Ithmar Capital and the Nigeria Sovereign Investment Authority announced the signing of a Strategic Partnership Agreement (SPA) and a Memorandum of Understanding (MOU) on 5 December.

These agreements formalised the two countries cooperation on bilateral investment for the first time in recent history.

Initial plans for the project eye expansion in a number of sectors around the pipeline, including food processing, to improve export competitiveness in areas such as West Africa.

Nigeria's Minister of Foreign Affairs, Dr Geoffrey Onyema, said, "This South-South open platform will accelerate the structural transformation of the national economies of the region, thereby putting the entire region on a higher growth path. The two Heads of State agreed to set up a Bilateral Coordination Body to monitor this important project and commended such a strategic cooperation in Africa."

http://www.africanreview.com/transport-a-logistics/logistics/morocco-and-nigeria-announce-trans-african-pipeline

COPPER AND PLATINUM PRICES HOLD KEY TO NICKEL RECOVERY

Global refined nickel consumption is set to rise by 1.3 per cent between 2016-2020 (Source: Shutterstock Vitaly Raduntsev)

Key commodity prices need to strengthen to spark a revival in nickel production in Africa, according to research and consulting firm GlobalData.

Global refined nickel consumption is set to register a CAGR rise of 1.3 per cent from just under 2,000kt in 2016 to 2,023kt by 2020, GlobalData's 'Global Nickel Mining to 2020' research states.

However, this is lower than the CAGR rise of 5.23 per cent recorded between 2010 to 2015.

Africa presently accounts for a small share of global mined nickel supply in 2015, with much of the continent's production coming from Madagascar and South Africa, says GlobalData.

The research also says the expected spike in global nickel demand will not be enough to stave off prospective mine closures in the next five years in the face of pricing slumps and rising operational costs.

"While the nickel price has been weak throughout 2016, much of Africa's mined nickel supply is affected by other commodity prices, like copper and platinum," Cliff Smee, GlobalData's head of research and analysis for mining, told *African Review.*

"Copper in particular has been one of the worst performing metals on the LME (London Metal Exchange) in 2016.

"Should we see stronger copper and platinum prices, then nickel by-product production in Africa will increase."

http://www.africanreview.com/construction-a-mining/quarrying/copper-and-platinum-prices-hold-key-to-nickel-recovery

EAST AFRICA'S "MASSIVE GAS DISCOVERIES CHANGE ENERGY EQUATION"

Kenya is a key epicentre of drilled petroleum exploration wells in East Africa (Source: Afryka Wschodnia/Commons)

Oil and gas engineers, geologists, technicians and senior decision makers from public and private organisations gathered for the inaugural Africa Energy and Technology Conference, held 5-7 December at the Safari Park Hotel, Nairobi, Kenya.

Hosted by The American Association of Petroleum Geologists (AAPG) and the Society of Petroleum Engineers (SPE), the event presented the opportunity for attendees to hear from 60 industry experts and network with more than 150 people to discuss evolving oil and gas developments on the continent.

Opening the conference, David Blanchard, DB Global Energy Consultants noted that East Africa's "massive gas discoveries will change the energy equation for decades to come".

http://www.africanreview.com/events/event-news/east-africa-s-massive-gas-discoveries-will-change-energy-equation-for-decades

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Banking on digital

Ecobank Kenya is in transition mode. In an exclusive interview with MD and regional executive for the group's CESA region Samuel Adjei, *African Review* learns how the launch of a new cache of digital mechanisms underpins a wider plan to spark greater financial synergies across East Africa

Ecobank Kenya reported its first full-year profit after tax last year (Source: Ecobank)

The World Bank's recent prediction that economic growth in sub-Saharan Africa is expected to fall to 1.6 per cent this year - it's lowest in more than two decades - has fanned speculation on regional economic health; volatile oil prices continue to sate economists' opinions on how resource-rich African countries may react *(at the time of writing oil prices surged after non-OPEC oil producing countries agreed to an output cut - ed)* and the future is not so clear.

For Togo-headquartered Ecobank Group, a stifled performance across its key Central, Eastern and Southern Africa (CESA) division – which includes Kenya – in the first nine months of 2016 resulted in net revenue and profit before tax declines of US$14mn and US$7.2mn, respectively.

"Growth in (the) sub-Saharan Africa region has not been promising this year as all the countries under CESA fall in the sub-Saharan Africa region: we are feeling the impact of an economic slowdown," acknowledges Ecobank Kenya MD and regional executive for the CESA region Samuel Adjei. In the case of Ecobank Kenya, which acts as a pivotal hub for many of Ecobank Group's regional subsidiaries, it is also grappling with the enactment of a new law that seeks to cap interest rates on credit facilities and floor interest payable on qualifying deposits, says Adjei. This has resulted in Kenyan banks tweaking their performance expectations as they head towards the end of the year.

"For the nine months ending 30 September, our performance remained largely constant compared to a similar period last year, however, we saw a 37 per cent jump in interest income on loans and advances driven by higher loan balances in 2016 compared to 2015," Adjei reveals to *African Review.*

Economic turbulence aside, 2015, by all accounts, was a defining year for the pan-African bank's Kenya division.

> "We've seen a 37 per cent jump in interest income on loans and advances driven by higher loan balances in 2016 compared to 2015

The business reported its first full-year profit after tax of Kshs90.3mn (US$8.8mn) backed by a rise in commissions, something Adjei states is "very significant" at a time of transition within the group as activities are consolidated and eyes turn to new profit spinners.

Technology ripe for capitalisation

One significant avenue for Ecobank Kenya is the deployment of new digital technology. In October, it announced a strategic plan to prioritise mobile banking that feeds into a five-year corporate streamline across its consumer banking, commercial and corporate investment and banking channels. Invariably, the move concentrates on the aforementioned consolidation of its operations to deliver more cost-effective and convenient financial services to customers. These include the rollout of the Ecobank Mobile App and mVisa mobile payment services.

In the case of the former, a desire to enhance more instant ways to bank using mobile devices resulted in the creation of "the first unified app delivered by an institution for use in 33 countries", Adjei claims.

"The Ecobank mobile app opens up a huge window of opportunity for our customers by allowing them to shop, transact and do business without cash," he explains.

"With our app, Ecobank customers can now make and receive instant payments across 33 African countries on their mobile devices. They can also pay in store across the CESA region and the rest of Africa where we have a presence using their mobile phone: this is genuine convenience delivered to our customers."

Customers using the app can also benefit from opening a new Ecobank Xpress account. The app will be

formally launched in the entire region in February 2017, but is already available for download across all Ecobank Group's markets.

"Currently, we are migrating all our existing customers to the new app," Adjei confirms.

"Based on the feedback we have received from our customers since it became available for download, we are confident the app will be a great success."

The battle to produce the next generation in African mobile payments has hottened up since the dawn of Safaricom's M-Pesa back in 2007 and Ecobank Group has been stamping its mark fastidiously in the mobile payments market through the mVisa service, which it hopes to rollout to 33 African markets by the end of the year.

Despite being embryonic in its journey – and a relatively new concept to Kenya – mVisa is gaining some promising traction.

"The introduction of mVisa in this market will give our customers even more opportunities to make payments and transfers via their mobile phones, especially for smaller amounts," Adjei notes.

"MVisa will therefore provide a more affordable and convenient way for merchants to accept payments traditionally done by card or paid in cash."

Aside efforts to bolster the use of ATMs, internet banking and credit and debit cards, Ecobank Group has recently partnered with Mastercard to launch Ecobank Masterpass Quick Reader (QR). This enables millions of businesses – from small micro-vendors to medium-sized enterprises – to accept fast and secure digital payments from consumers for the first time. "Shoppers don't need to carry cash or their physical bank cards – rather, they can make fast, safe and simple digital payments using Ecobank Masterpass QR via their mobile banking app on their mobile device anywhere that Masterpass QR is accepted," Adjei explains.

"We are working with both Visa and MasterCard and our group office to ensure these two services are available to our customers in Kenya and across the region in the shortest time possible."

Driving growth in East African financial services

Change and adaptation to the technology age means attempts at reconciling digital aspirations while preserving the fabric of bricks and mortar operations does not always pay dividends for global businesses.

In response to the digital shift, Ecobank Group announced earlier this year a plan to close nine out of its 29 branches in Kenya by April 2017.

"We realised that we can still serve our customers in these branches through our various alternative channels such as mobile banking, internet banking, agency banking and point of sale, essentially achieving convenience for our customers and cost effectivness for the bank," Adjei responds when asked by *African Review* if he believed the shift towards more digital channels would fill the gap left by having fewer customer-facing stores.

"Across the group, Ecobank is currently reviewing its business model to ensure that we deploy products that are profitable in the countries where we operate. Millions of people in Africa still do not have even the most basic financial services. Here in Kenya, there are people who do not have bank accounts, or safe ways to make payments. Interestingly, these people have mobile phones and Ecobank will leverage the power of digital, including mobile phones, to reach out to these customers."

More broadly, Ecobank recognises the central role played by its CESA region operation in contributing towards strengthened economic co-operation within the East African Community (EAC) block, which comprises six partner states and is home to approximately 150 million citiziens with an estimated combined GDP of US$146bn. As the central hub for CESA covering 18 affiliates, Kenya provides a reliable yardstick for the group's future financial prosperity.

"We are boosting our transactional services group to provide financial solutions to enhance trade across the region," Adjei reveals to *African Review*.

"Being one of the fastest growing regional blocks in the world, the EAC is widening and deepening cooperation among member countries politically, economically and socially.

Kenya's partnership with the EAC continues to provide Ecobank with a solid grounding in addressing the needs of governments and businesses through tools such as liquidity management, automating financial services and trade finance facilities. Moreover, Ecobank is studying solutions to improve value chain solutions and payment and travel devices such as prepaid cards.

"We are confident Ecobank Kenya, and the wider CESA hub, will be a key driver of Ecobank's growth," Adjei concludes. ■

A demonstration of the Ecobank Mobile App at a product launch in Lagos, Nigeria (Source: Ecobank Group)

Snapshot: Samuel Adjei

- Appointed MD of Ecobank Kenya in April 2016 and acts as the regional executive for the banking conglomerate's Central, Eastern and Southern African (CESA) region, comprised of 18 countries
- CV includes roles as deputy MD, executive director, head of corporate banking and treasury, and cluster managing director for Ghana and West African Monetary Zone (WAMZ) in an impressive 26-year career
- As MD of Ecobank Ghana – the most profitable affiliate of Ecobank Group – he raised the bank's corporate positioning from no.5 in 2006 to no.1 since 2012, increasing total assets from US$300mn (nine branches) to more than US$2bn (80 branches) during the same period
- A proven track record in strategically growing bank assets, revenue and profitability including vast experience in bank acquisition, integration and stock exchange listing
- Qualifications in advanced financial management from Stanford University, California; an MBA in finance and a BSC (hons) in mathematics and statistics; an honorary fellow of the Chartered Insititute of Bankers (FCIB) in Ghana; and a member of the Ecobank Group General Management Committee

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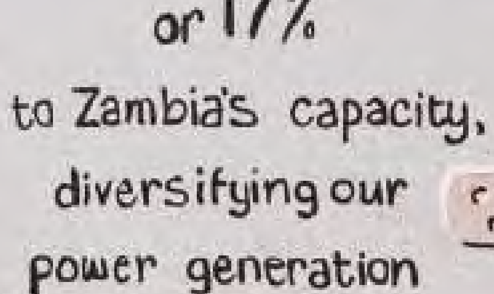

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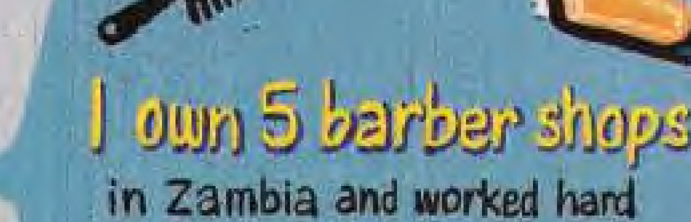

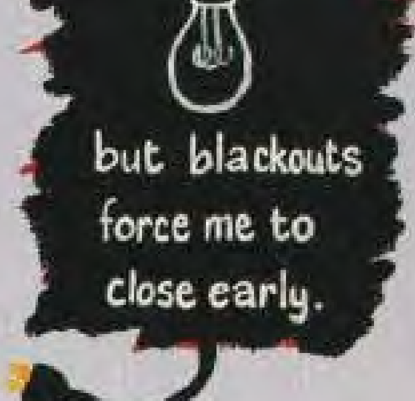

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Securing financing for home-grown companies

Private equity funding success relies on a dynamic and entrepreneurial approach and the African market is ripe for generating higher returns for investors

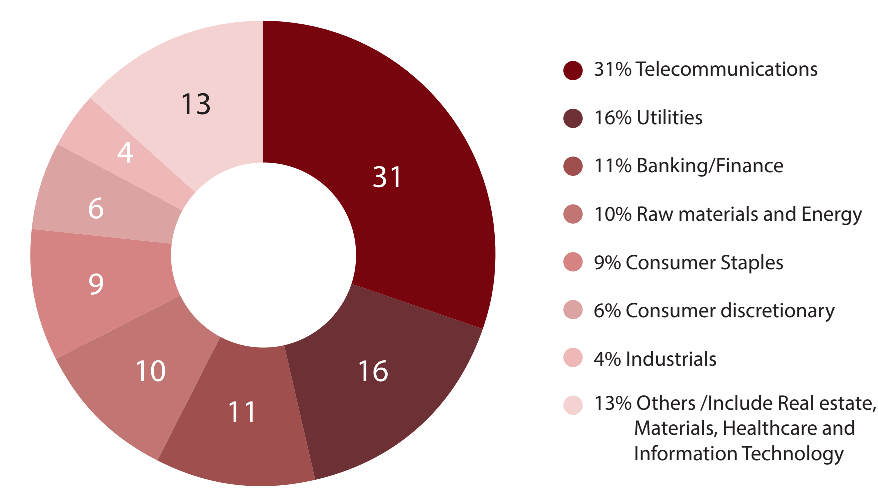
Private equity (PE) is capital invested directly by funds and investors in private companies. Pools of funds are often created by PE firms or venture capitalists (angel investors), each with their own goals, preferences and investment strategies. These include leveraged buyouts, growth capital, distressed investments and mezzanine capital. These strategies provide working capital to a target firm in order to nurture its expansion, assist new product development, or restructure operations and management.

PE is a business based on expansion and entrepreneurial spirit towards exploring new ways of growth. Africa is a lucrative market to generate higher returns, reflecting favourable demographics such as rising urbanised middle class populations (projected to grow to 500mn by 2030). Consumer spending is expected to grow by 3.8 per cent a year to total US$2.1tn by 2025, coupled with mineral wealth and growing labour forces. According to the Emerging Markets Private Equity Association (EMPEA), sub-Saharan Africa (SSA) was ranked third most-attractive destination for PE investment during 2014-15 (up from seventh in 2011) when compared with peer developing regions.

The African Private Equity and Venture Capital Association (AVCA) estimated that during the period 2010-15, PE funds invested US$21.6bn in 823 deals, 63 of which were reported in 2015, worth US$2.5bn (see overleaf). In fact, weaker local currencies and the global commodity slump could attract more PE-backed acquisition deals in Africa over the coming months.

Attractive sectors for PE businesses are consumer products and retail (CPR), and technology, media and telecoms (TMT). Other areas include brewing, banking, insurance, professional services, technology, real estate (including hotels), utilities, logistics, pharmaceuticals, private healthcare, education and manufacturers of processed foods, soaps and detergent (see above chart). Consumer and financial services represented two-thirds of total deal volume in 2015 (see overleaf), according to KPMG research. South Africa, Nigeria, Kenya, Ghana, Zambia and Mauritius received the most investments. According to AVCA, 311 PE deals

Pie-chart: Percent share of Private Equity Funds Invested in Africa, 2010-15



Source: African Private Equity and Venture Capital Association (AVCA)

(worth US$6.1bn) went to West Africa – dominated by Nigeria and Ghana. Both countries combined accounted for 65 and 93 per cent of the deals by volume and value, respectively, between 2007 and mid-2015.

Profusion of funds

Established UK-based PE managers operating in Africa include Actis Capital, which has invested more than US$3bn spread across 23 countries, one fifth of which is being invested in financials. In 2015, Actis and a diverse collective of backers – pension funds, sovereign wealth funds, development finance institutions and endowments – raised US$500mn for its third Africa Real Estate Fund 3 (ARE3), the largest opportunistic private real estate fund targeting sub-Saharan Africa, excluding South Africa, to date. ARE3 invests predominantly in prime retail, office and industrial developments in the capital cities of seven to eight countries. Neil Brown, partner, says,

"Africa is under retailed, hence we expect that around 40 per cent of the capital will be invested in retail shopping centres."

With US$1.1bn under management, Development Partners International (DPI) has injected US$100mn through its ADP II Fund in Atlantic Business International (ABI), a subsidiary of Morocco's Banque Centrale Populaire. ABI is the third-largest banking group in the West African Economic and Monetary Union (UEMOA) and second largest bank in Côte d'Ivoire in terms of deposits, according to AVCA. DPI, which in March 2015 raised US$725mn, states, "We want to also capitalise on strong growth prospects and low banking and insurance penetration in the UEMOA region." Other portfolios include Université Privée de Marrakech, a leading private university; RTT, Africa's largest private-owned parcel distribution company; HomeChoice, a home-shopping and credit retailer; and Eaton Towers, a telecom tower company.

Helios Investment Partners boasts a diversified portfolio in over 25 countries, with funds totalling US$3bn. Helios is using proceeds from its third Africa-focused fund (US$1.1bn) raised in January 2015 to acquire assets in CPR, TMT, energy, transport and logistics and banking sectors. Among its recent acquisitions are Telkom Kenya (60 per cent equity) and 49 per cent voting rights in Nigerian integrated energy solutions provider Oando.

US funds have also entered Africa's niche market, led by The Carlyle Group (its SSA Fund closed in 2014 at US$698mn). TPG Capital, which plans to invest US$1bn in partnership with Africa-based PE fund Satya Capital owned by Sudanese

billionaire and philanthropist Mo Ibrahim and Emerging Capital Partners, manage more than US$2bn in African businesses. Other names include Kohlberg Kravis Roberts (KKR), Sun Capital, Protea Asset Management, and Blackstone Group, which focuses on greenfield infrastructure projects through its portfolio company Black Rhino – headed by former Central Bank of Nigeria governor Lamido Sanusi.

In the US, the New York State Common Retirement Fund has invested US$200mn in African companies through Helios Investment Partners and African Capital Alliance. The fund announced it would invest three per cent of its assets (estimated at US$180bn) into sub-Saharan Africa over the next five years. American university endowments – reportedly holding US$400bn in combined assets – is also showing a keen interest in investment. The University of Texas Investment Management Company invested US$150mn through Helios and Actis during 2015.

Other prominent managers in sub-Saharan Africa include Dubai-based The Abraaj Group, which reported an investment of US$3bn into 67 mid-cap firms and 30 full or partial exits in the past decade; Aster Capital Partners (France), which targets renewable energy projects; Old Mutual PE (South Africa); Meijer Realty Partners (Holland); and Brazilian BTG Pactual. Leading pan-African investment firm African Capital Alliance has raised over US$1bn since its formation in 1997. Its fourth PE fund (closed at US$570mn), Capital Alliance Private Equity IV (CAPE IV), builds on previous funds by buying into fast-moving consumer goods (FMCG), TMT, energy and business and financial services.

> "The African PE Data Tracker Report from AVCA shows the total value of deals - comprising 83 transactions - in H1 2016, reached US$900mn"

Recent investments & exiting

The African PE Data Tracker report from AVCA shows the total value of deals – comprising 83 transactions – in H1 2016, reached US$900mn.

"Our figures illustrate a resilient PE industry despite continued economic volatility and similar fundraising levels when compared to 2014 (US$2bn)," the report states. However, EMPEA figures indicate that following a record 2014-15 for fundraising, funds targeting sub-Saharan Africa slowed down, raising US$725mn between January to June 2016 and deploying US$584mn in the region. Financials led all other sectors in deals completed with a total of 10, while the power sector also retained investor interest. Globally, fund managers raised US$15.1bn, while investing US$13.3bn in emerging markets, which represented a decline of one-third and one-fifth, respectively, year-on-year.

A survey by accountancy firm Deloitte (2015) indicated that 67 and 42 per cent of respondents expected PE exit environment to improve in East and West Africa, respectively, over the next year. There were 58 PE exits in 2015 across SSA, the highest on record since 2007, according to KPMG research. But exiting is difficult compared to other emerging markets. Law firm, Addleshaw Goddard explains, "Investment managers [in Africa] must remain nimble and take a long-term approach to exit opportunities to achieve expected returns."

The African-focused funds face numerous challenges – lack of liquidity in capital markets (except South Africa), complex or fragmented regulation, onerous capital controls, currency risk (i.e. devaluation), the scarcity of investable mid-cap firms, as well as infrastructure bottlenecks.

"Firms are too small, lack human capital and are often within underdeveloped sectors," echoes the Overseas Development Institute (UK). Global wealth manager UBS advises potential investors to ask questions before acquiring a frontier-based company: Can they gain a controlling stake? What is the regulatory framework? Can they eventually exit the company and should they hedge forex risk?

In sum, significant efforts and resources have gone into developing a fully-fledged PE industry in Africa. Over time this will improve basic infrastructure, create jobs (particularly youth employment) and boost managerial-technical expertise of small and medium-sized businesses, thereby driving their growth and transforming them into successful, independently managed, best-in-class players in their respective sectors.

Footnote:

- Venture investment refers to start-up (seed) capital made typically in less mature companies or in early stage development, or expansion of a business. Such investment is mostly found in the application of new technology and product innovation that lacks a proven track record or stable revenue streams.
- Leveraged buyout (LBO) refers to a strategy of making equity investments as part of a transaction where a company, or business asset(s) is acquired from existing shareholders typically with the use of significant amounts of borrowed money. A PE firm takes majority ownership in an existing or mature firm
- Growth capital refers to equity injections, mostly minority stakes, in relatively mature companies for expansion, restructuring, entering new markets, or funding a major acquisition without a change in control of ownership
- Mezzanine capital refers to subordinated debt or preferred equity securities – largely comprising a junior portion of a firm's capital structure that is senior to the company's common equity. ■

Moin Siddiqi, economist

Bar-chart: Mergers & Acquisition Activity By Sector, 2015

Consumer goods
Banking/Finance
Industrials
Materials
Others
0 5 10 15 20 25 30 35

Source: KPMG Research

PE and M&A activity in Sub-Saharan Africa, 2015

No. of PE Investments	63
No. of Exits by PE Funds	58
No. of M&A Deals	110
Deal value (US$ Mn)	2,978

Source: KPMG Research

Islamic financing instruments are at an embryonic stage in Africa, but are growing fast (Source: Shutterstock solarseven)

Africa's financing pathway

Islamic finance remains a niche in Africa but it is growing, driven in part by the continent's urgent need for new and innovative ways to fund infrastructure development

Funding Africa's huge development needs has long represented a big challenge. This has spawned all kinds of innovative financing mechanisms in the past and could spell an opportunity for Islamic finance, notably Sharia-compliant bonds, or Sukuk. Still in an embryonic state in Africa – but growing nonetheless – these instruments could play a potential role in delivering large infrastructure projects, from building new airports to constructing power plants and building roads. While it is early days for Africa, on a global scale Islamic finance is not a new concept. A longstanding feature of the financial markets of Malaysia – a world leader in the field – and across the Middle Eastern Gulf, its spread now encompasses non Muslim-centric territories worldwide. This is a pattern that is catching on, albeit slowly, in Africa. While northern Africa has provided a natural entry point for Islamic products, current activity now focuses on sub-Saharan markets, notably in West Africa. Now, its reach is pushing into non-Muslim centric territories such as South Africa and Kenya. Both countries are keen to create an environment where Islamic products, from banking to micro finance, can thrive. While the emergence of funds like Sukuk may hold the key to the growth of long-term infrastructure needs, Africa's financial markets remain comparatively immature. This means any new and complex products require time to come to the market.

But other, more simple, Islamic products and services are evolving more rapidly and are bridging a gap for short-term financing, resulting in a greater, more immediate impact on the ground. While this short-term lending may not help drive the construction of new highways or dams in the immediate term, it can play a role in driving forward Africa's economy, especially in aiding the private sector. And there is certainly appetite among Islamic lenders to venture into the African market, which presents a high growth opportunity compared to more developed areas like Europe.

Bahrain-based Ibdar Bank recently announced the launch of a Sharia-compliant trade finance fund in response to Africa's high growth market. The open-ended Barak Ibdar Shari'ah Trade Finance Fund will invest in African commodities and general trade finance transactions, targeting a 10 per cent return net-of-fees for investors.

"We have launched this fund, a parallel Shari'ah fund of the Barak Trade Finance Fund, which since its inception in 2009 has had a straight seven-year positive record with 168 per cent total return and an average of 13 per cent return to investors per year," says Ahmed Al-Rayes, the bank's acting chief executive officer.

> "Islamic products and services are evolving more rapidly, bridging a gap for short-term financing"

Ghana energy deal

Mauritius-based Barak Fund Management was instrumental in opening up a deal in Ghana recently for borrower Genser Energy, which will provide additional electricity for the country's gold mines sector. Under the deal, Genser Energy, an independent power producer, will acquire three Mars 100 turbine generation sets, manufactured by Solar Turbines USA, a Caterpillar company.

"In Ghana we've got quite a strong exposure," says Barak Fund Management's Giles Hedley, who adds that the US$11.5mn facility highlights a shift to longer-term lending, opening up greater opportunity for project sponsors and borrowers. Typically, the fund's lending duration is around 120 days, he said, but the Genser Energy deal – in which Apache Corporation of the USA is the named supplier – is extended to a year, or potentially more. Repayment terms are for 365 days from the disbursement date, with the option to extend for a further 365 days. Hedley says, "So it's a successful transaction for us, and we are starting to move more into that area."

Another key factor, he adds, was the strength of the off-takers, in this case, Gold Fields, and the development of two new gold mines, although Genser Energy's other off-takers in the past include the likes of Unilever. Hedley says this was a "big reassurance for us" in taking part in the deal. Until 2016, Genser Energy had three power plants in operation serving industrial customers. It has now raised this to seven this year, running a mix of liquid and gas fuels, in response to demand and the travails of Ghana's domestic power sector, which suffers from chronic shortages.

Growth markets

Although currently less developed in Africa, Islamic finance is becoming better known. A report produced by

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COUNTRY/LOCATION	PLANT TYPE
Cameroon	(Grinding Plant)
* Cote d'Ivoire	(Grinding Plant)
Ethiopia	(Integrated Plant)
* Ghana, Takoradi	(Grinding Plant)
Ghana, Tema	(Import Terminal)
* Kenya	(Integrated Plant)
* Liberia	(Import Terminal)
Nigeria, Gboko	(Integrated Plant)
Nigeria, Ibese	(Integrated Plant)
Nigeria, Obajana	(Integrated Plant)
* Niger Republic	(Integrated Plant)
* Rep. of Congo	(Integrated Plant)
Senegal	(Integrated Plant)
* Sierra Leone	(Import Terminal)
South Africa	(Integrated Plant)
* Mali	(Grinding Plant)
Tanzania	(Integrated Plant)
Zambia	(Integrated Plant)
* Nepal	(Integrated Plant)

* Under Construction/Commissioning   * Planned

the Economist Intelligence Unit (EIU) in 2015 highlighted the spread of Islamic finance in Africa. It showed a footprint across at least 21 countries, from established players like Sudan – which has a fully-fledged 100 per cent Islamic financial system – to new entrants such as Uganda. The continent's huge and growing Muslim and non-Muslim populations – Africa's total population is poised to more than double to 1.9bn by 2050, the EIU notes – lays good foundations for further growth.

While the full range of Islamic finance products seems likely to expand, it is long-term Sharia-compliant bonds that are seen as the most attractive vehicle for infrastructure financing. Currently, the level of Sukuk activity on the continent is only small, though not insignificant. Fitch Ratings estimates around US$1bn of Sukuk total issuance from the whole of Africa in 2016 compared to US$21.74bn in the first half of the year alone across the Gulf Cooperation Council states, Malaysia, Indonesia, Turkey, Singapore and Pakistan. Making further headway in this area is challenging. However, Bashar Al Natoor, global head of Islamic finance at Fitch Ratings notes,

"When considering the reasons why Africa is less developed in its Islamic financial system, two common themes emerge: the first theme is the complexities of Sukuk. Second is the emerging capital market infrastructure of African countries. Both factors pose significant challenges for Sukuk in general, particularly in establishing a legal structure and legislation that is acceptable to governments, investors and the Sharia boards."

Al-Natoor also says that structuring Sukuk as opposed to issuing a traditional Eurobond remains a relatively complex and time-consuming process.

The BRVM recently became the first stock market for Islamic finance in Africa after listing five Sukuks

Islamic stock exchange

While Sukuks have so far been used in only a handful of countries in Africa to raise capital, interest in the mechanism is certainly spreading. This is no better evidenced than in the October launch of Africa's first Islamic stock market, with the West Africa regional stock exchange BRVM listing five Sukuks issued by Côte d'Ivoire, Senegal and Togo, worth a collective US$1.3bn. The BRVM is a common electronic stock market for eight countries in West Africa: Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo. The Islamic Corporation for the Development of the Private Sector (ICD) – the private sector arm of the Saudi Arabia-based Islamic Development Bank Group – is a key driver behind the project, and indeed the general uptake of Sukuk in Africa.

"This listing is one of the largest ever achieved worldwide and ICD is proud to be one of the actors," says Khaled Al-Aboodi, ICD's chief executive. The ability to raise any funding of scale like this, especially in what may be considered some of the poorer economies of West Africa, is understandably welcomed by all. Ivorian Prime Minister Daniel Kablan Duncan hailed the Sukuk listing as a big advance for the region.

"The development of Islamic finance is a major focus for the development of the regional financial market to finance the growth of Côte d'Ivoire and the entire WAEMU (West African Economic and Monetary Union)," he commented at the time.

Sukuk uptake

For sovereigns, what is also apparent is that Sukuk is currently regarded more as a means for borrowers to diversify their funding base rather than as a tool for funding any specific project or asset. That's even true at a corporate level. South Africa's state power company, Eskom, has been working on its own Sukuk for some time in a bid to diversify its finances.

"Sukuks remain a potential funding instrument in Eskom's funding plan," confirms Eskom's Nto Rikhotso, adding that the utility "will, over time, explore and execute this funding source subject to conducive market conditions".

Despite having the most sophisticated capital markets infrastructure on the continent, South Africa's own progress in this field has been checked by the need to introduce legislation to allow Islamic finance to thrive.

"Historically, the law did not adequately regulate the tax treatment of Islamic financial products and as a result, tax leakages were associated with such products," says Bontle Bopape of law firm Dentons South Africa.

"In January 2013, and again in January 2016, various amendments were made to the tax legislation to allow for parity of tax treatment between Islamic financial products and conventional financial products."

In 2014, the National Treasury of South Africa finally issued a US$500mn, 5.75-year Sukuk bond in order to diversify the investor base and set a benchmark for state-owned companies seeking diversified sources of funding for infrastructure development. However, this has been the only sovereign Sukuk bond to be issued in South Africa to date, and Eskom's own timelines remain uncertain. Yet, it seems a near certainty that there is, subject to the right conditions, more activity to come. Nigerian officials said earlier this year there are plans for a federal government Sukuk to meet borrowing needs and diversify funding sources, with suggestions that this could take place in 2017. It's no miracle solution to Africa's development needs, but Islamic finance is making an imprint. ■

Martin Clark

Pillars of effective public delivery

Africa's changing socio-economic landscape requires strengthened partnerships between public and private sector stakeholders to affect meaningful change in infrastructure development

According to the recently launched 10th edition of the Ibrahim Index of African Governance (IIAG), improvements in the past decade have been hindered by a deterioration in the category of safety and rule of law. The annual composite index draws on quantitative assessment data from each of Africa's 54 countries, set against 95 indicators from 34 independent sources. The Mo Ibrahim Foundation defines governance "as the provision of the political, social and economic goods that a citizien has the right to expect from his or her state, and that a state has the responsibility to deliver to its citizens".

Top line findings reveal overall governance has improved by one point, with 37 countries – accounting for 70 per cent of Africa's citizens – recording progress across areas including human development, participation and human rights and sustainable economic opportunity. Out of 100, the highest-scoring countries in terms of overall governance were Mauritius (79.9), followed by Botswana (73.7) and Cabo Verde (73). Although, the aforementioned improvements contrast to deteriorations across fields including safety and rule of law with sustainable economic opportunity the slowest improving category. Within this category, infrastructure recorded the largest gains, buoyed by huge improvements in digital and IT infrastructure – the most improved of all 95 indicators, despite its average score remaining low. Electricity infrastructure experienced a malaise across 19 countries, home to 40 per cent of the population, with more than half of Africa's economy affected by the issue.

For the Africa Initiative for Governance (AIG), the continent is facing an intractable challenge in addressing poor public leadership. It is this element that is preventing the continent achieving its true potential, and the current gap between what it views as private sector innovation and poor public sector governance is not getting any smaller.

"Broadly speaking, I'm afraid the gap is quite large," comments Nigerian entrepreneur and AIG founder and chairman Aigboje Aig-Imoukhuede.

"The challenge we face is significant, and will not be solved overnight. We need to implement solutions that are designed to last generations, and survive changes in political leadership.

"That's why we believe the AIG is such an important initiative. But that doesn't mean there are no examples of success, just take a look at some of the work that has been done in Rwanda over the last decade, and you can see that progress is possible.

"I would also point out that while capacity issues remain endemic across Africa over the last 15 years, we've seen broader political progress towards a more representative model of democracy and that is one of the key foundation stones on which sustainable transformation of public sector leadership and governance can be built."

Bridging the public-private gap

Aig-Imoukhuede admits that public sector progress in the last decade "has not followed quickly enough" in the context of unprecedented investor interest and the gap existing between "the giant strides of corporate Africa and the tentative steps being taken within the public sector".

Aigboje Aig-Imoukhuede, founder and chairman, AIG (Source: AIG)

"We have to re-think how we invest in the future of our public sector across the continent to ensure that it keeps pace with the private sector, and ultimately enable it to drive even greater, and more sustainable growth," he says.

When it comes to deficiencies in infrastructure – particulary electricity – across the continent, there is an argument that public-private partnerships (PPPs) need to work more efficiently to deliver solutions to address what is a sizeable problem.

"With an annual funding gap of between US$50bn to US$100bn, depending on whose estimates you refer to, private sector funding is critical to bridging Africa's infrastructure deficit, and PPPs are generally acknowledged as part of the solution," comments Gori Olusina Daniel, lead transaction advisor, Africa PPP Advisory.

Olusina Daniel acknowledges that while PPPS "are not the whole story", where used effectively with projects subject to neccessary public sector comparator and value for money tests, they can accelerate infrastructure delivery by using public capital and assets to catalyse private sector investment.

In turn, any perceived gap between private sector innovation and public sector governance is in fact narrowing.

"Progress is being made, but more needs to be done, and quicker," asserts Olusina Daniel.

In the case of Nigeria, which ranked 36th in the table, Aig-Imoukhuede believes the country is very much open to the idea of public and private sector collaborations. He says this is evident across the broader economy and in the roles played by public and private sector leaders in improving the government's ability to deliver and perform. As such, he points to developments in rail transport and the oil and gas segments as indicators of engagement with the private sector.

"The Buhari-led government has demonstrated a significant level of commitment towards greater private sector participation in tackling the infrastructure deficit – the National Integrated Infrastructure Masterplan, which was developed by the previous government and adopted by the current administration, anticipates 40 per cent of the US$3.1tn required over a 30-year period to address Nigeria's infrastructure deficit," adds Olusina Daniel.

Overall, the continent's average index score for corruption and bureaucracy slid by 8.7 points over the last decade, with 33 countries recording a deterioration, 24 of which fell to their worst ever score since 2015.

"We know that corruption is one of the core obstacles holding back broader-based sustainable development in Nigeria, and that public sector corruption is integral to that," adds Aig-Imoukhuede.

Subah's sophisticated mapping project is expected to conclude in mid-2017 (Source: Subah)

Putting Ghana on the map: Brick-by-brick

The Subah Group has devised the first large-scale private sector initiative in Africa - and possibly the world - to map the buildings, streets and population of an entire country

Like many African countries, Ghana has grown rapidly in recent years. New buildings have appeared almost overnight as people resettle from their traditional rural homelands to urban areas.

Understanding and documenting this new world is a huge challenge for all types of organisations in the country. The government needs to provide municipal services including roads, schools and medical facilities and is required to apply property taxes consistently to maximise its revenues.

Meanwhile, new infrastructure is needed to support all the new homes and businesses. To address these challenges, the largest mass household data collection and streets and buildings mapping exercise in African history is being carried out in Ghana as a joint public/private initiative.

After a comprehensive consultation with the government and other key stakeholders in Ghana, The Subah Group began in 2014 with the specific goal of identifying and recording all the streets, buildings, businesses and people in urban Ghana. The information gathered from this three-year project, which is expected to finish by mid-2017, will be vital in meeting the challenge of rapidly shifting demographics by bringing spatial intelligent information to the decision tables of the Ghanaian government. The mapping exercise will include all the metropolitan and municipal areas in Ghana, which make up about 62 per cent of the built-up land mass. The features being recorded are building and property shells, street centrelines, key landmarks and points of interest, alongside cartographic features traditionally included in maps such as rivers, wetlands, political boundaries and county limits.

The Process

Key to the success of the project is the MapIt software. Developed by Subah, this specialist data capturing and manipulation platform represents a single digital repository for millions of pieces of information on the country and its inhabitants. Thanks to an extremely robust search and query function, users can enter the name and location of any street and get ground-level and satellite views of the site, as well as data about the buildings, businesses and people who live in the area. Satellite maps and images taken by drones and on-the-ground handheld cameras are used to identify features by a 50-strong team in a custom-built state-of-the-art mapping centre. Meanwhile, around 2,000 people are employed to knock on doors to collect household data. They use tablets with power banks to enter information into the MapIt database, which uses customised software. This data is then uploaded at the end of each day and validated by more than 80 call centre personnel who call telephone numbers to double-check the accuracy of the data. Crucially, for the many streets with no name and buildings with no number MapIt generates names and assigns addresses – ensuring no information falls through the cracks.

Results

It was clear at the outset that this would be a lengthy and labour-intensive exercise, with huge ROI potential – both economically and socially.

Two years into the project, around 480,000 buildings have been documented with data collected on 586,000 households. The data collected and confirmed by MapIt is already being – and will be – used in several important ways. Private refuse collection companies – which are paid directly by customers – are now using the mapping system to identify and serve new people. The country's emergency, security and private delivery services are using the digital maps to plan routes and deliver key services. The Department of Finance will shortly start using MapIt to value property and ensure the appropriate property taxes are applied – and collected. Meanwhile, the Department of Planning will be using MapIt to assess where it needs to devote resources in the future. Ghana has created a blueprint that fellow nations both inside and outside of Africa can now follow. ■

Tackling the cybercrime wave in Africa

The fight against cybercrime looks as uncertain as ever across Africa. A new study by Liquid Telecom identifies that African businesses are under mounting pressure to enhance their cybersecurity operations amid greater fear of the repercussions of a data breach

African businesses are failing to take the necessary steps to protect themselves against data breaches. Many organisations have experienced multiple security breaches within the last 12 months and the continent could be facing a skills shortage, as businesses struggle to find trained and qualified cybersecurity professionals.

These are just some of the concerns highlighted by businesses in new research conducted by Liquid Telecom. The study is one of the first of its kind in evaluating how heavily the issues of cybersecurity and data protection weigh on the minds of employees at African businesses today.

In order to gather the data, Liquid Telecom surveyed 269 respondents from the business community. Respondents drew experience from a wide range of industries with IT professionals featuring heavily (over 31 per cent) alongside the finance community (14 per cent). More than 40 per cent of respondents work for microbusinesses and small organisations, while just over 33 per cent are employed by small to medium- sized businesses with under 1000 employees. Large enterprises with more than 5000 employees make up just 12 per cent of respondents.

Facing up to security breaches

Incidents of cybercrime are rising in Africa, and globally, prompting the business community to raise its game or risk the financial devastation caused by a cyberattack or data breach.

Security breaches are worryingly commonplace across Africa. According to the survey, around 66 per cent of respondents have experienced at least one security breach in the last 12 months and almost 10 per cent claim their organisation has suffered more than 10 security breaches per year.

It is also clear that African businesses are failing to take enough precautions to prevent data breaches.

Mind the skills gap

A skills crisis could be emerging across Africa, with the survey results indicating there is a limited pool of cybersecurity talent (see figure 1). Approximately 68 per cent of respondents believe more training and qualified cybersecurity professionals are required. Furthermore, around 27 per cent of respondents express genuine concern over the lack of qualified cybersecurity professionals in the region.

With demand for cybersecurity on the rise in Africa, filling positions could become an increasingly hard process for businesses. African enterprises are running into what is, in truth, a global problem – a desperate shortage of people with the right skills and experience to combat cybercrime.

Neither Africa's corporate training departments nor its public education sector are producing talented people at a fast enough rate to match the evolving nature of the problem. Tough economic conditions are tending to apply downward pressure on business ICT training budgets at a time when they should be increasing, adding pressure onto existing staff. And governments are, in many cases, failing to play their part by not putting enough resources into national skills development programmes.

An alarming response

It is difficult to determine which is the more alarming statistic: that more than 40 per cent of respondents believe African governments should be introducing tougher legislation to support businesses in their fight against cybercrime, or that almost 40 per cent aren't familiar enough with existing legislation to fully answer the question (see figure 2). What is clear, however, is that data protection legislation is a grey area for many businesses across Africa. Data protection legislation is evolving quickly across the region and businesses must keep up. Developments in data protection legislation could be a deciding factor for businesses looking to expand across Africa, as they aim to avoid places where the integrity of data is set at a low premium, or where they might get hit hard by protectionist and maverick data laws designed to seal borders and favour domestic enterprises.

Establishing a regulatory framework that protects citizens and allows for healthy economic development should be the end goal for many African nations. Getting cybersecurity and data protection right will benefit all parties – consumers, businesses and governments alike.

To download Liquid Telecom's full Cybersecurity & Data Protection Africa Report for free, visit www.liquidtelecom.com

Figure 1 (Source: Liquid Telecom)

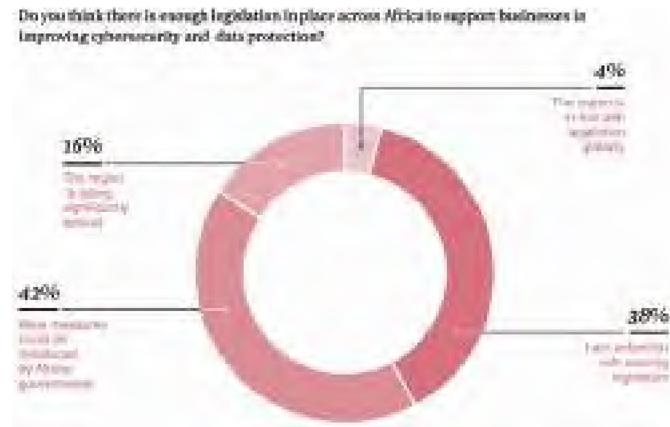

Figure 2 (Source: Liquid Telecom)

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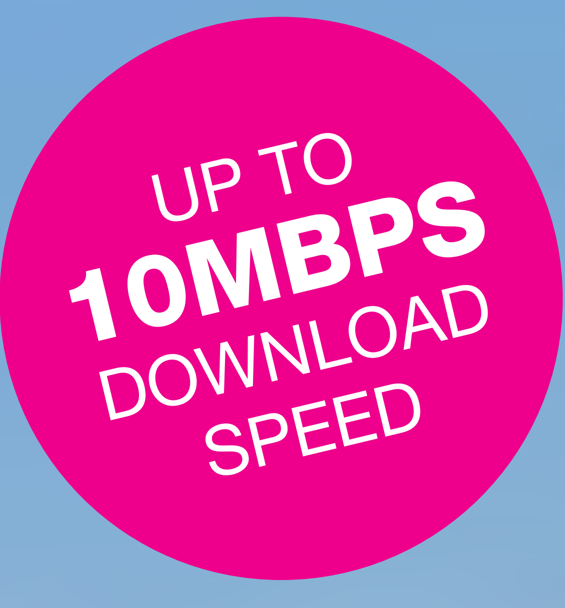
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10MBPS
DOWNLOAD
SPEED

LIQUID
TELECOM
Building Africa's digital future

Ethiopian Airlines is targeting 120 destinations under its new Vision 2030 (Source: Ethiopian Airlines)

Vision 2030: Ethiopian Airlines shifts into higher gear

Ethopia's 25-year economic renaissance owes much to the rise of flag carrier Ethiopian Airlines. Now, the advent of a new airport in Addis Ababa beckons fresh opportunities for transcontinental expansion

Addressing a press conference during November's World Travel Market in London, H.E. Dr. Hailemichael Aberra Afework, Ethiopia's ambassador to the UK, was quick to declare the country's recently imposed state of emergency "a small hiccup" due to a number of internal and external factors "which are now under control".

Tewolde GebreMariam, group chief executive officer, Ethiopian Airlines, confirmed that the airline has not experienced any noticeable reductions in bookings as a result of Ethiopia declaring the six-month nationwide state of emergency in early October due to reports of sizeable unrest. Instead, he reiterated consecutive traffic growth of 19 per cent in July and 20 per cent in August and September prior to the announcement.

"We have not felt the impact, it is perception in social media and people visiting Ethiopia know it is safe and secure," he told members of the press.

"In the travel and tourism business the next two to three months are peak periods for Ethiopian tourism, with December and January mainly associated with cultural and religious holidays, so a lot of tourists will visit."

African Review later learned that travel restrictions urging diplomats travelling beyond a 40km radius of the capital Addis Ababa to alert a control post had been lifted, with Siraj Fergessa, defence minister and secretariat of the command post, decreeing the current situation as more peaceful and stable. At the time of writing, the UK Foreign and Commonwealth Office (FCO) no longer advises against travel to five zones in the eastern part of the Amhara region. However, it currently advises against all travel within 10km of the border with Eritrea, with some exceptions, 10km of the border of South Sudan and within 100km of the Ethiopian border with Somalia and Kenya in the Afder and Liben zones of Ethiopia's Somali region. Addis Ababa is said to remain "generally calm" with no reported violence linked to the demonstrations in Oromia and Amhara, the FCO said.

The socio-culturally rich country located in the horn of Africa, dubbed affectionately as the "land of origins" in an ode to its alluring coffee-growing provenance, stunning topography and history steeped in architectural splendour, is supported by a continually evolving air transport sector pioneered by flag carrier Ethiopian Airlines.

Path to 2030

The self-proclaimed fastest growing African airline continues to provide a vital cog in the country's economic progress. Its plan includes steering a course to becoming Africa's leading aviation group via Vision 2025, a growth map that targets US$10bn in annual revenue. GebreMariam said the airline has already hit its 2025 target of 90 destinations. Now, work has begun on a new Vision 2030, which focuses on a target of 120 destinations, GebreMariam revelealed to the press.

Founded in 1945, Ethiopian Airlines has experienced remarkable growth over the past seven decades. Last year, the Centre for Aviation (CAPA) ranked Ethiopian Airlines as Africa's leading carrier based on fleet size. Covering approximately 94 international and 19 domestic locations, the state-owned airline controls the lion's share of the pan-African passenger and cargo network. Currently, Ethiopian Airlines' regional operation serves countries including Djibouti, Kenya, southern Sudan, Sudan, Somalia, Somaliland, Uganda and Yemen.

It scooped African Airline of the Year in 2016 at the 25th Anniversary of the African Aviation Air Finance Africa Conference & Exhibition and African Aviation Summit held earlier this year. Meanwhile, its A350 XWB carrier underpins the airline's commitment to acquiring new aviation technology.

The next hub opportunity

Supporting the airline's growth is a grander vision for the development of a new airport in Addis Ababa, touted as the next mega-hub for Africa, and indeed, the world.

As such, Ethiopia's existing airport infrastructure in Bahir Dar, Mekele, Arbaminch and Dire Dawa is sure to benefit from the construction of the new Addis Ababa airport hub, which is expected to be completed in 2024.

"The international airport development is very crucial for us – Ethiopian Airlines has outgrown the airport in Addis Ababa, it is congested, and the airline continues to grow so we need a new airport, but a new airport takes time," GebreMariam explained.

"We have divided the journey into two: we are going to expand the terminal in Bole airport, (to be) completed in around two years. That will give us a capacity of about 22mn passengers.

"That will take us up to 2025 and from there, we will have a new airport somewhere around 38km outside Addis Ababa in the rift valley. The altitude in Addis Ababa is a unique challenge for airlines, with only four or five airports like this in the world, so we want to address that too.

"The new airport is planned to accommodate between 80mn to 100mn passengers per annum, with an airport city and duty free shops, which will enable Ethiopia to be the centre of travel and tourism for the region."

Operator Ethiopian Airports Enterprise was not available for comment when approached by *African Review.*

Addis Ababa hosts 120 foreign embassies and diplomatic missions, including the headquarters of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA). A growing infrastructure base includes conference facilities for the AU and UNECA and the Millenium Hall, alongside the hub airport, and the city is working hard to marry a clear demand boom in infrastructure while addressing problems such as poverty.

"Firstly, whatever the Ethiopian government does, they always centre the interests of the people," explained Solomon Tadesse, CEO, Ethiopian Tourism Organisation.

"In the last 25 years, when there was practically nothing in terms of education, health, infrastructure, they've (the government) done an amazing job. From one university we now have 37 government universities; students coming out and graduating are almost two million per year.

"The infrastructure is for the benefit of the farmers to bring their products easily to the markets. In terms of railroads, we've just finished building the railroad from the port of Djibouti to Addis Ababa that will be inaugurated pretty soon. We have the light rail, one of Africa's best forms of transportation for the people. What that means is electrification is all over (the country) now, reducing poverty but also increasing health benefits for the people.

"We will see in the near future, very well-educated Ethiopians coming out (of university), whether they are working in agriculture, business, manufacturing – it really is a big asset that is increasing.

"The livelihood of the people is increasing. More people now can afford to send their children to school, so poverty reduction and all this infrastructure at the end of the day definitely benefits the whole of Ethiopia."

GebreMariam added that mechanisms such as healthcare, education, infrastructure and agriculture have paved the way for tourism to take centre stage.

"Ethiopia is open and ready for business in tourism," he ended. ■

Tewolde GebreMariam, Ethiopian Airlines, says the new airport marks Ethiopia as a central hub for tourism in East Africa (Source: Ethiopian Airlines)

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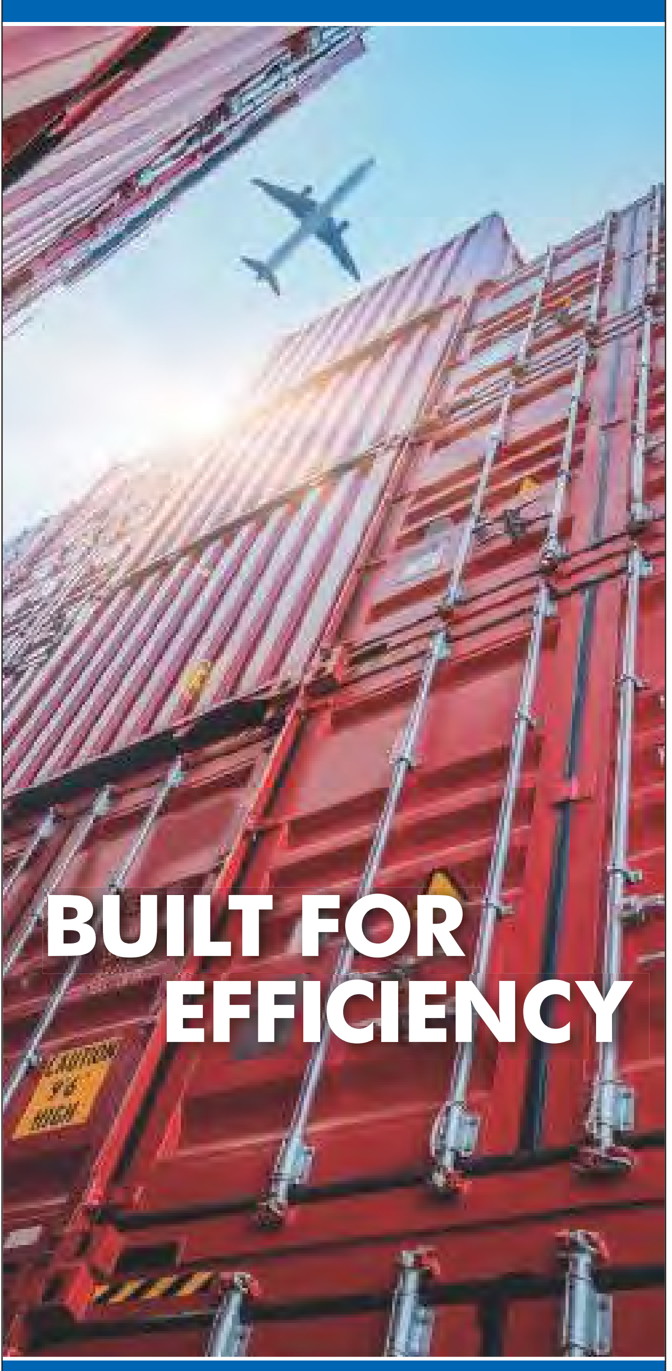

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Revolutionising African fleet management

Telematics is transforming fleet management worldwide and the technology has become particularly important for international and local fleet managers across Africa, says Scope Technologies

In the US and Europe, the awareness and penetration of telematics is relatively high. However, in Africa there are a number of underlying constraints that hinder the successful implementation of fleet telematics. Recent estimates suggest penetration rates will continue to rise across all major African economies including South Africa, where the penetration rates in 2020 are expected to increase to around 32 per cent from the current levels of around 21 per cent.

Fleet owners are aware of the advantages of adopting fleet management solutions to optimise their profitability. But as mentioned, a number of factors pose a challenge towards the implementation of fleet telematics solutions. Quality of infrastructure is varied and the telecom connectivity between many countries remains a challenge. The poor road infrastructure significantly increases the risk of accidents and damage to humans and vehicles, ultimately increasing costs and complexities for fleet operators. Rampant fraudulent transactions and vehicle theft also impact this emerging and diverse market, and inefficient fleet monitoring systems restrain recovery of these vehicles. Yet, most notably, the scale of fuel theft is propelled from minor incidents to cartel-driven operations. Fleet owners and operators are seeking robust tools to monitor, detect and prevent fuel theft. The cash-for-fuel business poses a significant threat to organisations' operating profits across Africa.

Without proper fleet management systems, it is challenging for fleets to effectively deal with these issues to optimise operational efficiencies. A feature-rich fleet management system and associated big data analytics not only allows fleet managers to keep a close eye on their vehicle's ongoing costs, including fuel and maintenance spends, but also introduces much needed checks and balances into the operations on an ongoing basis.

Pravar Gautam, vice president EMEA and Asia at Scope Technologies (Source: Scope Technologies)

Case Study: Reducing costs and improving efficiency with telematics

For over 17 years, Scope Technologies has partnered with a number of varied fleet owners through reputable service providers and in-country partners globally. Through our patented technology and domain experience, we provide end-to-end, technologically advanced monitoring tools, adopting the best global practices for our fleet customers. Scope, through its professional and technically skilled partner network across Africa, has made numerous inroads to fleet customers with effective fleet management solutions. One of our recent inter-country African projects includes work with a multi-national oil and gas company, with operations in Cameroon, Ethiopia, Ghana, Chad and Guinea, which achieved significant improvements across various KPIs. This included a 50 per cent reduction in vehicle accidents, a 30 per cent improvement in route compliance, and a 20 per cent reduction in fuel consumption across their fleets.

Why was this needed and how did we do it?

The multinational firm in question runs a large fleet across the continent with several thousand vehicles. A number of these fleets are based in economically or politically volatile markets, which increases the complexity from an operational perspective. The high accident rate in these environments, coupled with the transportation of dangerous flammable liquids, required a technically advanced solution architecture linked to a robust scalable end-to-end telematics solution. Scope was able to deliver on all aspects of the customer requirements such as adherence to route plans and time management, which previously led to customer delays and had a direct impact on productivity. Fleet operating costs were reduced considerably with driver behaviour monitoring. Once introduced, the customer immediately identified improved driver behaviour, which resulted in fewer road accidents.

The adoption of the Scope solution to the firm's planning tools provided real time reporting and alerts, which improved its route and order management process. This enabled the fleet team to monitor vehicles in real time across different countries. The customer is able to monitor vehicle maintenance-related issues and theft straight away. The collection

(L-R) Scope's accident reconstruction programme, demonstrating impact zone and incident detail (Source: Scope Technologies); efficient fleet management solutions are required by companies to maximise operational efficiencies (Source: Shutterstock Suparat M)

and tabulation of relevant data and information about routes and orders provided the company with an opportunity to analyse the routes to fulfil its goals to drive less and deliver more. Unlike traditional track and trace solutions, our solution has also enabled real time accident reporting and reconstruction of vehicle accidents as they happen – a feature that simplifies the investigation process. Significantly, the firm were also able to monitor driving behaviour to rank its drivers against a benchmark. Those failing to meet standards could be retrained or reassigned.

With profit margins, security and safety records under pressure, there is a growing consensus among fleet managers around the world that the time for utilising telematics technology is now. Not only can this technology bring in significant operational benefits to fleet managers in Africa, it can also result in enhanced safety and profitability for their fleets. ■

Pravar Gautam is vice-president EMEA and Asia at Scope Technologies

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Drilling and drought

Across southern and South Africa the current once-in-30-years drought conditions are leading to water restrictions and higher food prices. This is resulting in an increase in borehole drilling, which is both a good and a bad thing if not carefully managed

Groundwater is the water found in the cracks and spaces in soil, sand and rock underground where it is either stored, or moves slowly through geologic formations called aquifers. In South Africa, some two thirds of the country relies on such sources for its water, with more than 300 villages and towns turning to groundwater through boreholes and springs as their only source. But groundwater supplies are not infinite; they need resupply from rain, snow and ice, along with careful management.

The latter is, unfortunately, something that's not happening across the board and almost anyone can get a licence to drill. In a period of drought when recharging of aquifers is minimal, mismanagement is a serious problem; it impacts the environment through supplies drying up, or becoming contaminated. Drillers fail to protect the resource they've drilled and communities fall victim to unscrupulous companies, which prey on their ignorance. The good news is that certain experts and agencies are on the case.

African Review spoke with one of South Africa's leading groundwater experts, John Tonkin of John Tonkin & Associates. As a former president of the Borehole Water Association of Southern Africa (BWA), John has been involved in the groundwater sector since 1975 in a variety of leading roles.

John Tonkin, John Tonkin & Associates (Source: Borehole Water Association of Southern Africa)

AR: How is water security being addressed in South Africa and how is the BWA having a positive impact on this challenge?

JT: As a water-scarce country in a region that, in turn, has a somewhat limited supply of water, South Africa is well aware that water needs to be sustainably managed.

Recently, the Southern African Development Community (SADC) set up a Groundwater Management Institute (GMI). Recently, the Water Research Commission and The Department of Water and Sanitation (DWS) held a dialogue on the roll out of the National Groundwater Strategy. I am also involved in a project to develop and implement a comprehensive skills development programme aimed at practitioners at all levels in the groundwater industry. The BWA has had a significant input into all these initiatives. The countries that make up the SADC region are very focused on the enormous potential that groundwater has to meet the needs of a growing population.

> "The countries that make up the SADC region are very focused on the enormous potential that groundwater has to meet the needs of a growing population"
>
> JOHN TONKIN, JOHN TONKIN & ASSOCIATES

How big a challenge is it to monitor and control the unsustainable use of groundwater in South Africa and its satellite countries when almost anyone can have a borehole drilled?

The devil is definitely in the detail. For many years, the common perception has been that the water 'I' pump from under my property is mine. Legislation passed some years ago has gone some way to change this thinking, but for many years the BWA has put out the message that sustainable use of groundwater is in the best interests of the current user, the community as a whole and for the generations that will follow us. While there is still much to be done – we're on a journey and have not yet reached the destination – we have seen some real improvements in attitude and behaviour.

How big a problem is the depletion of groundwater sources and are many really running dry as reported in the press?

You may be aware of the fact that southern Africa in general and South Africa in particular are feeling the effects of a once-in-30-year drought. Food prices are spiking, water restrictions are set at high levels and there is increased activity in the borehole industry. While this provides good opportunities for companies and individuals that earn a living from the industry, it places a much greater load on the available resource. It must be pointed out that the resource in question is finite, as recharge comes from rainfall – the hydrologic cycle. Levels in the majority of boreholes will decline and this places an added responsibility on borehole owners to use water even more judiciously.

How long does it take a source that has dried up to recover, or do some never recover?

There is no straight answer to this question, as there are just too many variables. Water in a borehole is

recharged, ultimately, through rainfall, and the rate at which recharge happens depends on the ground formation(s) that make up the geology of the region. If the abstraction of water from the borehole exceeds the natural recharge this could cause damage to the ground formations that will, in turn, negatively affect the recharge capabilities of the water-bearing formations. This is called 'mining' water, i.e. an unsustainable removal of the resource with no chance of replacement. There are numerous examples of aquifers in South Africa that, in years gone by, had static levels of a few tens of metres; currently these same aquifers have water levels in excess of a 100m.

As to the possible recovery in these aquifers, this is entirely dependent on the types of formations, an increase in the amount of rainfall and a reduction in the quantity of water taken out of the aquifer. There is another dimension to this problem, namely the additional energy required to pump the water against a higher dynamic head.

> "Last year, the BWA teamed up with Johannesburg Water in an initiative to promote the drilling of boreholes within the Johannesburg metropolitan area. It was really refreshing to see a proactive stance being taken by a Municipal Owned Entity to a potential crisis"
>
> **JOHN TONKIN, JOHN TONKIN & ASSOCIATES**

Does the BWA have government backing in its efforts, or could this be improved?

Support for the BWA from government in general has been good and a special mention must be made of the Department of Water and Sanitation, which has given us excellent support.

Last year, the BWA teamed up with Johannesburg Water in an initiative to promote the drilling of boreholes within the Johannesburg metropolitan area. It was really refreshing to see a proactive stance being taken by a Municipal Owned Entity (MOE) to a potential crisis.

In this case, the figures are daunting. According to a dissertation published by a student at the University of South Africa, the population of Johannesburg has increased from 3.6mn (2006 census) to over seven million in 2012. This is a common trend throughout the world, but in a southern African context it is cause for much concern.

How can education improve the sustainable use of groundwater and what would the BWA recommend to government, industrial and domestic users that would really make a difference to the longevity of water resources?

There is absolutely no question that all aspects of education form a solid foundation for all human activities. The BWA is working hard to spread the word about the sustainable use of groundwater, but as already stated, this is a journey and not a destination. As for a recommendation: use the water that comes out your borehole as you would use the money you saved for your pension.

There is a finite amount to start with, hopefully wise investments will bring a rate of growth, withdrawals to fund living expenses should not exceed growth and, hopefully, at the end of it all, there will be something left over for the next generation. ■

Tim Guest

A borehole being drilled for the Bryanston Country Club in Johannesburg as part of the launch of a MOU signed between BWA and Johannesburg Water (Source: Borehole Water Association of Southern Africa)

"We see clear winners for the next 25 years – natural gas but especially wind and solar – replacing the champion of the previous 25 years, coal.

FATIH BIROL

Executive director, IEA, speaking at the launch of the World Energy Outlook 2016 report held in London

"Across Africa, PPPs (public-private partnerships) have come into the spotlight as part of the infrastructure financing and delivery mix over the last decade, starting with only a handful of countries, notably South Africa in the 2000s, to the point where the 8th Africa PPP Conference and Showcase held in London was attended by representatives from 14 African countries.

GORI OLUSINA DANIEL

Lead transaction advisor, Africa PPP Advisory

"The results suggest that while travel is innaccessible to many and is difficult for those who do travel, there is still a strong desire to travel more.

DINO GELMETTI

Vice president, Europe, Middle East and Africa, Airline Solutions, Sabre following the release of company research revealing African air travel spend is expected to rise by 24 per cent with the introduction of the African Union passport in 2018

"Kenya and East Africa has come of age with several oil and gas discoveries in the last few years.

MARY JANE MWANGI

AG. CEO, National Oil Corporation Kenya

"With the new discoveries of oil and gas across the region, we must get the business environment right for the exploitation of extractives in a sustainable and equitable way – we need to encourage investment while ensuring local populations benefit from revenues.

NIC HAILEY

British High Commissioner for Kenya, speaking during the 4th Annual East Africa Oil and Gas Summit & Exhibition in Nairobi

"Africa is poised to become the next centre for entrepreneurship, but we must provide Africa's youth with the required skills and create an environment that will enable them to become the business leaders of tomorrow.

AKINWUMI ADESINA

President, African Development Bank, following the launch of the Ashish J. Thakkar Global Entrepreneurship Index, which measures entrepreneurial environments around the world

"We have to scale up our efforts to ensure Africa does not continue to lose billions of dollars that could be funding its own growth and development.

ABDALLA HAMDOK

Acting executive secretary, United Nations Economic Commission for Africa, addressing the issue of illicit financial outflows from the continent

"If we focus on economic corridors and think that energy itself is not seen as just purely commodities to be exploited, we can accelerate development.

EMEKA ENE

CEO Oildata and Xeneri, explaining to delegates attending the recent inaugural Africa Energy and Technology Conference in Nairobi, Kenya that energy investment requires new and sophisticated forms of thinking

"We will see in the near future very well-educated Ethiopians coming out (of university), whether they are working in agriculture, business, manufacturing – it really is a big asset that is increasing.

SOLOMON TADESSE

CEO, Ethiopian Tourism Organisation, commenting on the rise in infrastructure development in the country

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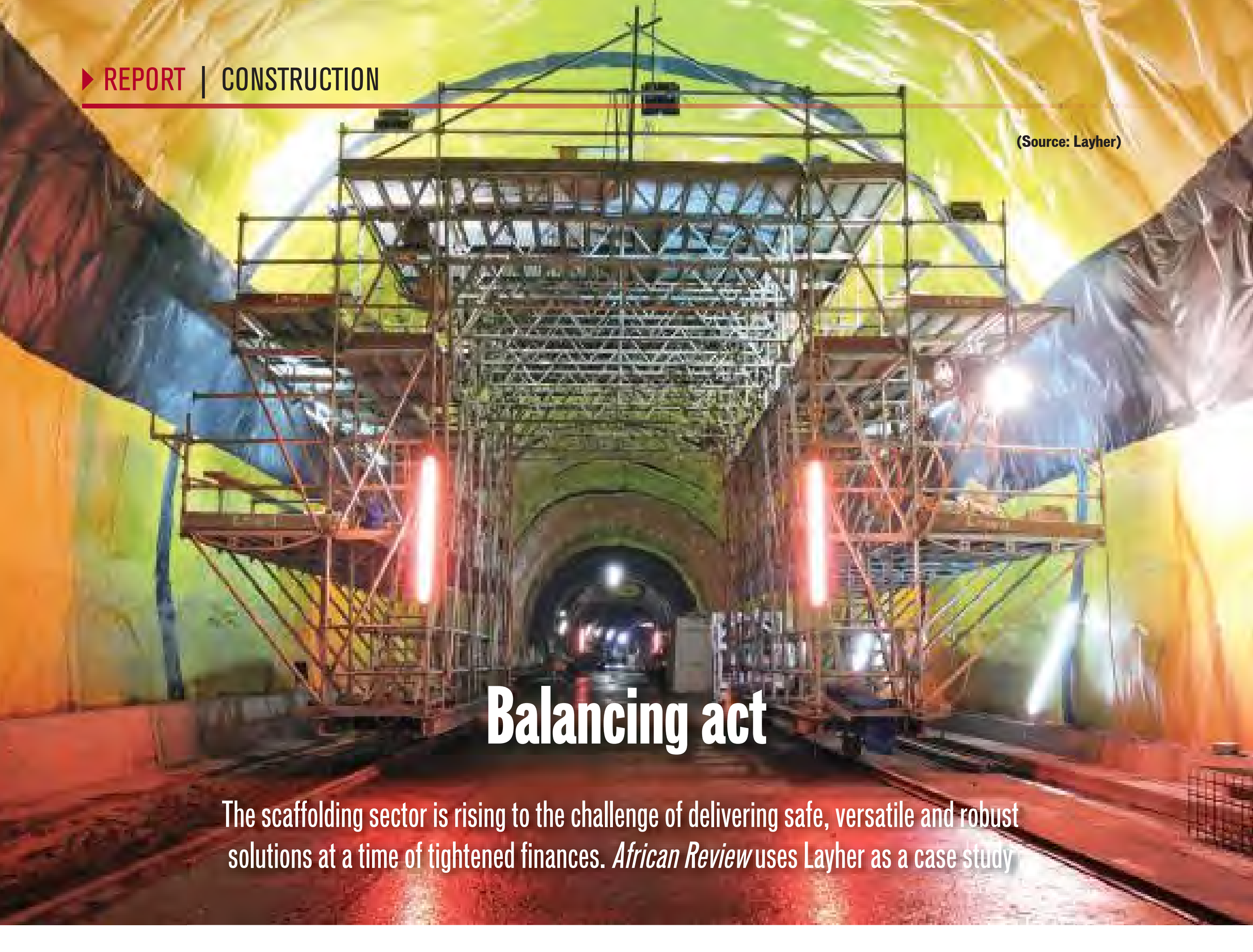
(Source: Layher)

Balancing act

The scaffolding sector is rising to the challenge of delivering safe, versatile and robust solutions at a time of tightened finances. *African Review* uses Layher as a case study

If Africa's infrastructure is to grow at a pace to meet the continent's soaring population, then it bodes well for all players operating in and around all of the key construction disciplines. Forecasts for future spending on infrastructure vary widely, but quality is always in demand, which means those companies offering reliable and well-priced services and solutions to customers are at an advantage. That certainly holds true in specialist niche areas like formwork and scaffolding, rarely in the limelight, but critical nonetheless to the roll-out of Africa's new highways, dams and other big infrastructure projects. As an area integral to industrial safety, it seems logical that this niche will flourish as the continent expands. And while there may always be a degree of uncertainty in the global economy that does not mean there isn't plenty of construction going on locally. Deloitte's Africa Construction Trends 2016 report, which includes projects valued at more than US$50mn, features 286 construction projects in Africa that had broken ground by 1 June. Collectively, these projects are worth a cool US$324bn. That's a little down from a year earlier (301 projects worth $375bn) but still represents significant activity on the ground.

Project Economics

The report also hints at some of the challenges facing formwork, scaffolding and other suppliers as they seek to deliver robust and timely solutions in an era of tightening costs. The Deloitte report identifies cuts in infrastructure spending, particularly in the big oil producing states like Angola and Nigeria – understandable given the persistent slump in crude oil prices in recent years. Yet, West Africa still accounts for the largest regional share of activity with a recorded 92 projects (worth US$120bn), versus 85 in southern Africa (US$93bn). South Africa scores the highest number of projects for a single country with 41, followed by Nigeria with 38. So, plenty going on, and across a broad spectrum of industry sectors too. Larger construction projects include dams, ports, mines, oil and gas and energy facilities, alongside roads, schools, water and sewerage work and electricity and health infrastructure, among others. Again, in Africa the mining sector, continues to pull in investment from far and wide. These trends are driving leading industry players to continue innovating and targeting the African market, with its tremendous long-term potential. This is despite greater awareness surrounding the need to reduce costs and spending.

> “West Africa still accounts for the largest regional share of construction activity with a recorded 92 projects in 2016

Scaffolding solutions

Among the crop of scaffolding players is Germany's Layher, which is tracking opportunities in Africa's all-important mining sector, offering contractors scaffolding solutions to improve safety and efficiency, and potentially to increase profits. For more than 70 years it has been a pioneer in top-class scaffolding systems with the 'Made in Germany' label and for much of that time it has been paying attention to the mining industry. For more than 40 years, its Layher Allround Scaffolding has offered an optimised and complete system for mining projects around the globe, available in steel or aluminium, or a lightweight alternative. The company says its scaffolding system permits optimum adaption to the respective local problem which, given the uniqueness of mining projects, is quite an asset. A few basic components – standard, ledger, diagonal

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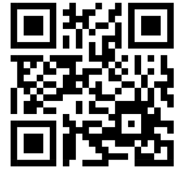


Layher is the world's leading manufacturer of scaffolding and protective systems for mining applications. For more than 70 years the Layher brand has been synonymous with proven safety, ground-breaking innovation, exceptional quality and complete dependability. Put simply, Layher means more possibilities. What's more, with its global presence, Layher can make its expertise and experience available wherever they are needed. Our customers' success is our aim.

Learn more on **mining.layher.com**

More Possibilities. The Scaffolding System.

Germany's Layher is tracking market opportunities in Africa (Source: Layher)

brace, deck – form the basis of the application to create almost limitless usage. And there are many additional parts for special solutions within the system – all steel components are hot-dip galvanised, and hence durable and practically maintenance-free, while the use of tubes with a 48.3mm outer diameter permits combination and extension using traditional tube and coupler scaffolding at any time.

Mining developments

Layher's long history with the mining sector is apparent too, with expertise suited for some very specific applications. It is an expert in solutions for the assembly of crushers and other large mining equipment, for instance, which requires a high load-bearing capacity and structural strength, as well as fast and reliable design and deployment. For scaffolding in the assembly of SAG grinding mills, Layher works in tandem with each customers' engineering department to optimise equipment and support the need for any temporary structures. Layher Allround Scaffolding is also suited for short-term maintenance or repair work. Grinding mills are vital in the production chain, therefore interventions must be quick and effective. For the reinforcement of slopes, equipment is adapted to the design and assembly of the work platforms necessary to complete the task; solutions are suitable for working with shotcrete equipment and assuring the stability and resistance necessary for difficult work. For reinforcing underground mining tunnels, it is necessary to have stable and resilient work surfaces that are quick to assemble and dismantle. For this, Layher has designs for Allround rolling towers and fixed towers with a minimum number of parts – again, a critical factor in shortening deployment time and, ultimately, cost. For the assembly of circular tanks, Layher provides rapid designs with elements unique to the market, such as the divided foot ledger, which allows a significant number of parts to be dispensed. These take up small angles, maintain the scaffolding's load capacity and reduce assembly times. Layher also has solutions for temporary access applications that are suited to specific requirements and stages of each project, utilising aluminium, steel and access stairways with stringer beams. It makes it possible to provide access to massive excavations, slopes, temporary installations and structures under construction.

> "Increased safety with versatility is a key feature for all high class scaffolding systems

Safety first

Of course, in the case of much larger projects, the stakes are certainly high, and it isn't too hard to find out why. In China, at least 74 people were killed when scaffolding collapsed during construction work at a power plant in Fengcheng, southern China, the state-run *Xinhua News Agency* reported in November. Such incidents – though far from Africa – are reminders to all in the industry to be vigilant.

Increased safety with versatility is a key feature

A number of quick-to-assemble solutions are required for maintenance or repair work in mining operations (Source: Layher)

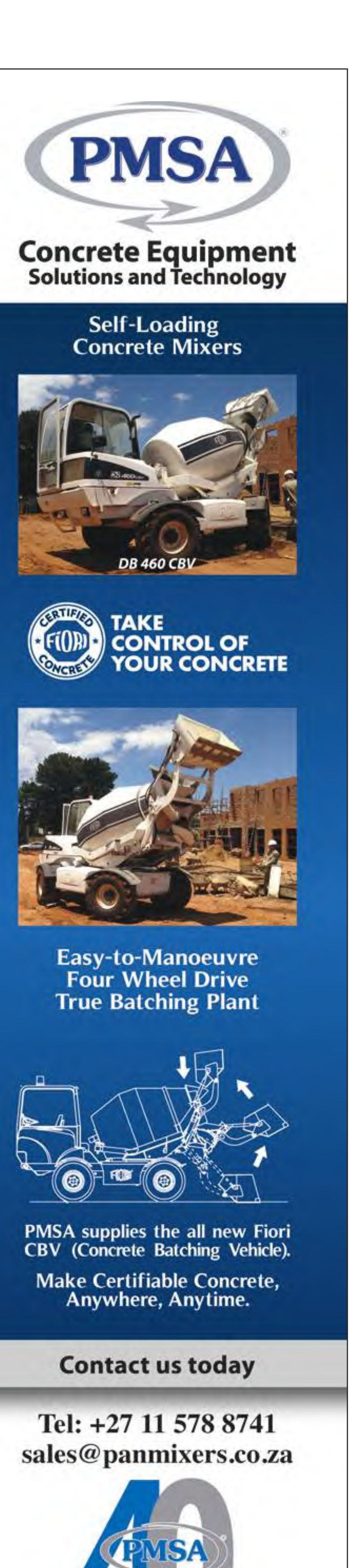
(Centre and below) Versatile and ultra-safe scaffolding solutions are an invaluable aid to success (Source: Layher)

of all high class scaffolding systems.That has clearly driven research and development at specialist providers like Layher from the very beginning. Sure enough, where commercial pressures and strict timings are involved – and there are no better examples than in the mining world – it can be a daunting challenge to deliver such robust and timely solutions.

The high safety demands and ever shorter periods of time available for building mining plants, and for extending and maintaining these plants, mean that versatile – and ultra safe – scaffolding systems are an invaluable aid to success.

Layher says its certified quality, versatility and variety of parts enable it to provide customers with safer and more profitable solutions for working at heights, and for temporary access applications as required by each unique project.

The design of all equipment has been optimised to reduce transportation costs and deliver savings in labour costs too, all helping to improve overall project profitability. The company also keeps significant stocks of all available materials, so it can supply the right solution at just the right time. Such attention to detail can make all the difference in making sure any project get off the ground smoothly. ■



Packaging suppliers respond to rising demand

Business in Africa's packaging sector is set to soar over the coming years and global packaging equipment suppliers are jostling to take advantage of consumer-led growth

Growth in Africa's packaging sector is tipped to explode over the coming years and global packaging equipment suppliers are certainly keen to capitalise on the potential for consumer-led growth. As reported by Africa's Big Seven (AB7), Africa's biggest food and beverage exhibition, sub-Saharan Africa's key food and beverage market grew by 18 per cent last year. Over the next 20 years, it is projected to be four times the region's urban market growth average. Sub-Saharan Africa's packaging growth is predicated on some of the most favourable demographics in the world: Africa has the youngest population of any continent. According to some estimates, of its 1.2bn people, one in three is a middle-class consumer. Italian packaging machinery manufacturers association Ucima predicts that most of the world's market growth of 4.9 per cent per year in global demand for packaging machinery to 2018 will come from Africa, second only to Asia in growth terms.

The Polyoak Packaging Dairypack division specialises in plastic packaging for dairy, beverages, juices and traditional beer (Source: Polyoak Packaging)

Packing a high demand

Much of the demand for packaging is taking place in South Africa, where the continent's first beverage carton recycling plant was recently launched in Germiston in a partnership between the global food packaging solutions company Tetra Pak and South Africa's Gayatri Paper Mills. South African packers are also upgrading their equipment with the introduction of all-electric blow moulding machines. Polyoak Packaging is the country's largest rigid packaging producer with eight divisions and 32 manufacturing plants. Its Durban facility has operations for two Polyoak divisions: Blowpack (bottles and drums) and Lubripack (motor-oil bottles). The plant currently has four all-electric double-sided Uniloy shuttle machines and another Uniloy all-electric press has now been ordered. Since 2012, it has purchased only all-electric machines. Africa's two other leading regional packaging markets are East Africa led by Kenya, and West Africa led by Nigeria. This summer, Ishida Europe announced its expansion into the East African food market by signing a partnership agreement with Kenya's top packaging machine supplier Allwin Packaging International. Ishida Europe is a leading global supplier of automated solutions. It designs, manufactures and sells individual machines and provides integrated and complete packing lines for fresh and snack food applications. The company recently introduced a new range of multihead weighers and checkweighers, which it is looking to distribute in East Africa. Allwin Packaging International will act as its agent for the region, and, together with Ishida Europe, will help to support East African food manufacturers' growth through the effective use of automation in markets such as snacks, nuts, cereals, pulses and sugar.

The agreement with Ishida is a major boost for Allwin. Starting in Kenya in 2004 as a domestic supplier of simple hand sealing machines, today it is the largest supplier of packaging machines in East and Central Africa, supplying more than 200 different types of packaging machines and materials. Its product range includes Form-Fill-Seal (FFS), powder filling, shrink wrapping, liquid filling, flow wrapping, and vacuum packing machinery. As well as its agreement with Ishida, Allwin also acts as distributor for Italy's SMI Pack shrink wrapping machines and it is the sole distributor of packaging marking and coding machines from US supplier BestCode.

Nigeria's dairy mission

Meanwhile in Nigeria, a groundbreaking Memorandum of Understanding (MoU) was signed this summer between the Swedish-Danish Arla Foods Group and Nigeria's federal government. The agreement could help to strengthen and expand the country's dairy industry and lead to the local production and packaging of powdered milk products. Arla Foods says the Nigerian dairy market, which is expected to reach 450mn consumers by 2050, presents a huge market opportunity. In Europe, Arla Foods is in the vanguard of Tetra Pak and HDPE milk packaging. However, its accord with the Nigerian government is still at an early stage. One challenge that will need to be overcome is the cultural hurdle that has resulted in a comparatively low per capita consumption of dairy products, such as fresh milk

and cheese, particularly in southern Nigeria. However, a *Euromonitor* study concludes that there is plenty of room for growth as the country's middle class expands. The variety of products is already increasing as producers introduce dairy products with new flavours. The dairy and drinks company Promasidor Nigeria, which in 2014 and 2015 had a 30% retail value share of the Nigerian dairy market, was the first to introduce smaller packaging of powder milk products. Its Cowbell Choco brand is a very popular milk drink among Nigerian children who constitute a substantial percentage of drinking milk consumers in Nigeria. In November, there were unconfirmed reports in the Nigerian media that Japan's Ajinomoto and PepsiCo are among bidders seeking to buy a stake in Promasidor in a deal that would give them access to its distribution network across the continent. The deal could value Promasidor at roughly US$1bn. Other recent deals in Nigeria's food and drink market include the investment by Coca-Cola in Nigerian drinks firm Chi this January and the stake bought last year by Kellogg's in the Nigerian food company Multipro. Danone has also made several stake acquisitions over the past few years.

Allwin Packaging International says it is the largest supplier of packaging machines in East and Central Africa (Source: Allwin Packaging International)

> "Sub-Saharan Africa's packaging growth is predicated on some of the most favourable demographics in the world"

Local power

Nigeria's packaged food sector has grown in line with the switch by consumers from unpackaged, unbranded products to packaged products, and local companies are competing well against the multinationals. Indeed, most of the leading companies in Nigeria are local players. Aside from Promasidor Nigeria, there is also Dufil Prima Foods, and Yale Foods Nigeria. Multinationals, such as Cadbury Nigeria and Nestlé Nigeria, also have a strong presence. However, it is common for them to form alliances with Nigerian companies to repackage and/or market their products in Nigeria. Meanwhile, the country's drinks packaging sector, particularly the carbonated soft drink (CSD) and beer segments, have become highly competitive. There is a growing demand for polyethylene terephthalate (PET) and Tetra Pak designs away from traditional

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A technician working in one of Polyoak Packaging's laboratories (Source: Polyoak Packaging)

glass bottles. La Casera Apple Drink, which pioneered the use of PET bottles in Nigeria, is a leading CSD brand, having made its debut in the Nigerian market in 2001. Since then, it has captured a substantial slice of of the market.

A similar move away from glass bottles towards PET bottles is evident in the Nigerian beer market. Earlier this year, Nigerian Breweries commissioned packaging manufacturer PET Engineering to extend its Climax, Amstel Malta and Maltina brand packaging to PET. The order included the need to use a preform, which was readily available on the market, to create unique shapes and enable containers to withstand the pasteurisation process up to 61°C. PET Engineering R&D researcher Fiorenza Ferrero said several different types of resins were tested before three prototypes were produced using a single type of preform. The project has successfully been completed and the Nigerian Breweries plant at Ota has taken delivery of four mould series.

It is clear that the future for packaging equipment suppliers to the African market is bright. Although the importance of good packaging has often been underestimated, the rise of an increasingly sophisticated and demanding urban population should ensure healthy returns for Africa's packaging sector and its equipment suppliers. ■

Nnamdi Anyadike

INMESOL SHIPS FIRST BATCH OF NEW IIRN-165 GENSET MODELS TO MOROCCO

Lorry carring six IIRN-165 model generators to Morocco (Source: Inmesol)

A noise emission test on the IIRN-165 unit (Source: Inmesol)

Inmesol has turned demand for its new canopy design generator set model 145-165kVa into supply with news of its first shipments to Morocco.

The first shipment, comprising six units of the new IIRN-165 generator set, recently left the Inmesol facilities, *African Review* has learned.

Loaded on the lorry were generators bearing the new design, with the capability of generating up to 900KvA of PRP power.

Up until several months ago, two lorries like the one pictured were needed to transport the same amount of power, Inmesol said.

As a result, CO2 emissions into the atmosphere and expenses associated with fueling and labour are reduced by half with the new solution.

Inmesol says transport of the six units in the 40-feet long lorries required a reduction by a few centimetres of the canopies used to house the models.

However, there were difficulties in making the reduction, overcoming potential overheating problems and dealing with an increase in the equipment's sound emissions levels.

"The larger the canopy opening to enable enough air flow to circulate and prevent engine overheating, the easier the sound emissions escape, and the higher the perception of those sound emissions," Inmesol explained.

The R&D department managed to resolve the problem through the use of a design that offers optimal air flow (so that overheating does not occur) and a good sound trapping system (elements that absorb sound emissions) to prevent the sound from escaping the enclosure.

Inmesol disclosed the new canopy design model 144-165KvA for generator sets in a blog post in September.

According to the post, the canopy is suitable for generator sets IIRN-145, IIRN-165, IVRN-145 and IVRN-165.

The smaller design retains all the qualities and satisfactory noise emissions as those of its predecessor.

New dimensions of 3525mm x 1140mm x 1950mm allows it to take full advantage of both maritime and land load combinations.

"This new design will benefit many renters who must transport several generator sets constantly from one place to another, and will be very welomed by clients and potential clients who were looking to meet these kind of needs, and whose suggestions I collected at Bauma 2016," said head of the rental commercial department in Europe Antonio Mármol in the blog post.

The new 40MVA Namugongo substation in the outskirts of Kampala city (Source: Umeme)

Sustainable grid connections

Uganda is boosting rural electrification by implementing a number of projects

Uganda's Rural Electrification Agency (REA), a semi-autonomous body created by an act of parliament, says the government recognises the importance of rural electrification in enhancing growth and economic development in the country.

To date, 108 out of 112 districts have been connected to the electricity grid, with over 150 rural electrification schemes implemented across 50 districts in the 2015/16 financial year. Designed to activate the government's rural electrification drive, the agency has so far implemented a number of projects that include grid extension, independent grids, off-grid solutions, photovoltaic schemes, and renewable energy projects.

"(The) provision of electricity to previously unelectrified locations will stimulate growth of strategic economic activities like agribusiness, small and medium industries, and enterprises. This, in turn, will stimulate job creation, investment and revenue generation and enhance income generation in both rural and urban sectors, hence contributing to economic growth and poverty alleviation," the REA notes.

It says grid extension is one of the key contributors to the government's target of electrifying rural Uganda. The REA says it has carried out a number of initiatives to expand the main grid. These include the construction of lines to district headquarters, providing electricity to trading centres to boost economic activities for income generation, and delivering electricity to communities to meet social needs such as education and health.

Rural Electrification Master Plan

The agency developed the Rural Electrification Master Plan (IREMP) in 2008, as part of a move to rationalise, sequence and implement programmes on a value-for-money basis, as well as achieving regional equity. The projects selected are based on a combination of factors, such as cost efficiency.

The plan also considers other factors. These include the spread of regional distribution to achieve equity between projects in a given area that might compete against each other, connections to district headquarters, and to large, rural industrial activities like tea, coffee, fish and mineral processing.

According to the latest Background to the Budget publication of the Ministry of Finance,"while household access to electricity at the national level is improving, Uganda's population without access to electricity remains relatively high compared to its regional neighbours, with the problem being more pronounced in rural areas of the country". The publication adds that "Uganda's rural electrification rate was at seven per cent in 2013, which is three (percentage) points lower than that of Ethiopia, but equal to that of Kenya. The country's rural electrification rate was, however, higher than that of Tanzania and Rwanda".

The 2016/17 publication says rural electrification remains a major priority in the government's investment agenda. The reason for this is that it has brought an increase in access to affordable, modern sources of energy, especially for low-income earners as seen from the decline in the household use of local paraffin candles.

The publication continues, "Government is focused on increasing the number of transmission lines under the Rural Electrification Programme. In (the) financial year 2016/17, (the) priority will be on enhancing (the) transmission of energy infrastructure with the aim of

accelerating value addition through agroprocessing to enhance export growth. Government will continue with (the) extension of the national electricity grid to the remaining district headquarters, rural growth centres and rural social infrastructure services like schools and health centres."

It says the government and the German Development Cooperation agreed a €10mn grant (US$10.5mn) in the 2015/16 financial year to finance the electrification programme for rural communities in the country, especially those located along existing power lines in rural and peri-urban areas. This is expected to promote investments in medium and low-voltage electricity lines and transformers and household connections, thus benefitting private households, small-scale companies and public institutions.

Engineers from Umeme, Uganda's largest energy distributor, working at an electricity substation (Source: Umeme)

"Uganda has made strides in improving household access to modern energy, but the cost of accessing it remains high," the document notes. "Uganda's end-user tariff for domestic consumers increased from UGX531.5 (US$0.15) per kilowatt hour in 2015 to UGX651 (US$0.18) in 2016. In order to cater for the country's poor, the lifeline tariff was not increased and remains at UGX150 (US$0.04) per unit up to the first 15kWh per month."

Boosting capacity

The REA says government plans to attain a rural electrification rate of at least 26 per cent by 2022 – up from the current seven per cent – is still very low. The body says during the 2013/14 financial year, a total of 1,657km of medium voltage lines (11kV and 33kV) and 806km of low-voltage distribution lines were constructed. This follows from 2014/15, when 3,279km of medium voltage lines (11kV and 33kV) and 2,977km of low voltage distribution lines were also constructed.

The agency says various financing sources have made the rural electrification programme possible. These include a levy on energy sales by government companies and development partners, especially the World Bank through the Energy for Rural Transformation (CERT) programme; the Swedish International Development Cooperation Agency (SIDA); the Japanese International Cooperation Agency (JICA); the Norwergian Agency; and others which have contributed hundreds of millions of dollars.

"Renewable energy development is a major ingredient of Uganda's rural electrification strategy and plan," the agency explains.

"Under this category, they have hydro-power sources, biomass, geothermal, solar and wind. Solar photovoltaic is also one of the technologies that REA promotes for rural electrification and solar water heater technology, mainly for urban buildings."

In a bid to ensure it has a reliable and adequate supply of the energy it requires to meet its development aspirations, the Ugandan government continues to invest in necessary energy infrastructure. This strategy is designed to maximise the country's swathe of renewable energy sources, including nuclear, geothermal and hydro power.

"In (the) financial year 2016/17, (the) government will continue to focus on (the) exploitation of Uganda's abundant renewable energy sources including hydro power and geothermal. This is meant to meet the target of increasing power generation capacity from 825 megawatts in 2012 to 2,500 megawatts by 2020," the publication confirms.

"This will be achieved by expanding the national electricity power grid network, completion of other small energy projects and promoting energy efficiency and use of alternative sources of energy like solar, wind and bio energy."

There is also a capacity target of 41,738MW in electricity to be achieved by 2040.

According to figures from Umeme, Uganda's major energy distributor, the total number of its customers increased by 13 per cent and 22 per cent between 2013 and 2014 and between 2014 and 2015, respectively. Customer numbers increased to 793,544 in 2015, marking its highest connection rate. The company says that out of an additional 142,971 customers registered in 2015, more than 70,000 connections were attributed to the Output-Based Aid (OBA) project funded by the government in partnership with the World Bank and Germany's KfW.

Government officials say that despite the efforts in increasing power generation in the country, with about 15 per cent of the population in urban areas having access to electricity, the situation in the rural areas is still bad, with only the aforementioned seven per cent of the population having access to power – a development they have attributed to the high poverty levels in rural areas.

The Background to the Budget publication says Uganda is also implementing the Green Growth Pathways project, which aims at laying the policy foundations for green growth in the country. This seeks to be achieved via the Green Growth Development Strategy and Green Growth Implementation Roadmap, alongside work on the Uganda Green City Development Roadmap and other capacity building initiatives for policy makers. ■

Geoffrey Muleme

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Mining's responsible path

Corporate social responsibility remains integral to credible mining operations

The activities of mining firms often affect the communities in which they operate in; In some instances, a large number of people have to be relocated due to mine constructions.

It is against this backdrop that players in the mining sector are taking the corporate social responsibility (CSR) agenda seriously.

The World Bank defines CSR as "the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large to improve their lives in ways that are good for business and for development".

According to the African Mining Vision, it is necessary for mining companies to embrace the notion of CSR in order to contribute to wider development objectives. Mining firms now accept that neighbouring communities need to have basic services like water and sanitation, clinics and schools.

However, misgivings about what mining firms are reaping and what the locals are getting in return persist in various parts of the continent. So what is being doing?

Zambia

In the case of Zambia, The Centre for Trade Policy and Development (CTPD) feel there is work to do.

"Many Zambians are disillusioned by poverty levels which remain stubbornly high and wonder whether the perceived low benefits from mining or its environmental cost are a price worth paying for," CTPD executive director, Isabel Mukelabai says.

At a recent mining expo in Kitwe on the Zambian Copperbelt, former general manager of the Zambia Chamber of Mines, Fred Bantubonse, said the 'give-back' gesture depended on how much profit companies could manage to set aside.

Giants such as Konkola Copper Mines (KCM), Mopani Copper Mines (MCM) and First Quantum Minerals (FQM) have introduced elaborate CSR initiatives to support communities.

KCM has expanded its CSR programmes over the years to ensure effective and maximum outreach. Since 2005, the company has spent over US$150mn on CSR programmes that intersect health, education, sustainable livelihoods and sport. The Vedanta Resources-owned company has supported a number of important health initiatives such as eye screening, provision of artificial limbs to amputees, kidney disease surgery, the expanded Roll Back Malaria programme, and its workplace HIV/AIDS policy.

It operates two major hospitals, 14 clinics, runs two primary and two secondary schools in Chingola and Chililabombwe, and has also trained over 500 Zambians at local and foreign universities and colleges in the last 10 years.

"Investing in the health of our employees, the local community and the population of Zambia is a key priority for us, says Shapi Shachinda, manager, public relations and communications - strategy and business development at KCM.

KCM's interventions in the community, which straddle a number of initiatives, include the firm's US$2.5mn enhanced Sustainable Livelihood programme. This has provided over 600 cattle to communities in four locations in the past four years, which has helped to lift hundreds of households out of poverty.

Barrick Gold, which owns Lumwana mine in the north-western province, implements projects such as women's savings, education, health and agriculture. Barrick Gold's CSR route includes the development of the Lumwana Multi-Facility Economic Zone (LMFEZ), which will comprise manufacturing, agroprocessing, hotels and resorts, and the construction of a brand new Lumwana town.

Since 2005, First Quantum has invested over US$50mn in education and skills development in Zambia, with initiatives extending from early childhood programmes through all levels of schooling to adult literacy classes. The Canadian investor has also introduced a unique conservation farming initiative under the auspices of its Kansanshi Foundation to make conservation more sustainable and contribute to food security and enhanced livelihoods.

"This programme has been an absolute winner in terms of sending people back to their villages empowered with knowledge," quips Guy Hammond, the programme coordinator.

FQM chairman of the board and chief executive officer, Philip Pascall adds, "For First Quantum, CSR means rolling up our sleeves and doing all that we can to ensure our operations have a new, positive impact."

Visiting its Kansanshi mine in May last year, Zambian President Edgar Lungu prodded the firm to extend its CSR intervention beyond education and health and assist in improving the road network in the area. FQM has since responded positively by budgeting US$50mn towards the rehabilitation of the economic lifeline: the 180 km Chingola-Solwezi road that carries two thirds of the country's copper production.

As a way of ensuring the post-employment livelihood of former employees within the host communities, Mopani facilitated the acquisition of 1,300 hectares of land, which is being developed in Mufulira for agricultural purposes.

Ghana

Mining companies including, but not limited to, AngloGold Ashanti, Newmont, Gold Fields Ghana, Golden Resources, Abosso Goldfields, Ghana Manganese Company and Golden Star Resources have contributed tremendously to the development of their host communities. The Chamber of Mines has adopted a policy where member companies set aside a minimum of US$1 out of every earning per ounce of gold and one per cent of their net profit to develop communities.

Some key interventions include Chirano Gold Mine's US$5.5mn four-year malaria control programme and AngloGold Ashanti's malaria eradication programme in 40 districts across the country with funding from The Global Fund.

Gold Fields Ghana has invested US$20mn in various development projects in its host communities. Meanwhile, Golden Star Resources' interventions include the Golden Star Oil Palm Plantation (GSOPP) project that seeks to promote oil palm plantations within its catchment area.

Côte d'Ivoire

Endeavour Mining operates five mines in Côte d'Ivoire, Burkina Faso, Mali and Ghana.
In 2015, it relocated 27 structures and 300 people in Côte d'Ivoire who were affected by the construction of the Agbaou Gold Mine.

The new compound cost US$1mn, with the process including the compensation for loss of crops. According to Doug Reddy, the Canadian firm's senior vice- president of business development, the company allocates 0.5 per cent of gross revenue from the mine to the local community.

Among other initiatives, Endeavour has already drilled boreholes to provide water to Agbaou and Zaroko villages, renovated a maternal health clinic in Zego and constructed a local power line that has since been handed over to the national electricity company. In addition, around 91 per cent of the total workforce at Agbaou is Ivorian and around 25 per cent of this workforce is drawn directly from the impacted villages.

Konkola Copper Mines is committed to educating Zambians through its CSR programmes (Source: KCM)

Furthermore, it is estimated that for each direct job, a further 10 indirect jobs are created. On an ongoing basis, the firm will provide an annual contribution to support scholarships for training Ivorians interested in mining.

South Africa

South Africa has a mandatory Social Labour Plan (SLP) that requires companies to provide a local community development plan and set aside relevant funds. Gold Fields, one of the country's major mining players, focuses on helping communities around mines and in remote areas to access healthcare by building clinics, refurbishing local hospitals and supporting the growth and development of healthcare workers through the Gold Fields Nursing College.

Anglo American focuses on local procurement, training and recruitment, support of small and medium-sized businesses and corporate social investment, working with NGOs, governments and local communities to ensure long-term and sustainable economic growth.

Heavyweight commodity producer BHP Billiton supports local and national economies by paying taxes and royalties to host governments and partnering with communities.

During FY2016, BHP Billiton Sustainable Communities provided US$14.8mn to continue its long-term projects in Australia, Colombia, South Africa and Mozambique. This included a partnership with ACDI/VOCA, a non-profit economic development organisation, to deliver the Livelihoods Empowerment and Development project – an initiative to improve the livelihoods of small farmers in the Boane region of Mozambique.

Guinea

Rio Tinto's contribution to sustainable development in 2015 included its successful response to the Ebola outbreak in Guinea by tackling the situation locally.

"We introduced hygiene protocols and strong best practices, globally, where we liaised with governments and international organisations to help keep the country open for business," says Sam Walsh, chief executive, in the company's latest sustainable report. In 2015, Rio Tinto community contributions in Africa amounted to US$9.4mn.

Indeed, social and environmental issues are as important as technical ones for a mining operation to succeed in today's economic climate. Mining companies have an obligation to support the communities they operate in, and a robust CSR policy goes a long way to achieving this aim. ■

Nawa Mutumweno

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MODELLING SUCCESS

Building Information Modelling (BIM) is becoming increasingly sophisticated in equipping design, construction and engineering professionals with the tools required to successfully manage a variety of projects.

At Hatch, BIM remains integral in aligning project drawings and specifications with the 3D project model itself.

Hatch's Project Delivery Group (PDG), which provides engineering services to the various business units at Hatch including mining, metals, infrastructure and energy, is the key to deploying BIM effectively.

Multi-disciplinary engineering teams can conduct proper clash detection checks, extract detailed bills of quantities and provide a 3D representation of the asset, says PDG head Mulalo Silidi, regional director - engineering.

In order for 3D project models to function, close collaboration is required across all disciplines in a brief.

"There has to be a seamless flow of information in order for the work flow to be as effective as possible, and also to minimise the design time which, in turn, will make that potential project even more attractive to the client," explains Silidi.

Mulalo Silidi, regional director - engineering, Hatch

The next stage is 4D, which takes elements inherent to 3D modelling and assigns construction work packages linked to the project work schedule and materials planning. The net effect is a simulation of the exact construction sequence, long before teams are on site.

BIM 5D adds a cost element to the process to determine if the total project capital expenditure is within the parameters set. For Silidi, there are a number of factors that can impact on the construction sequence.

"If the materials and equipment are forecast to arrive late, the construction team can utilise the system to reprioritise the labour in order to minimise standing time and cost overuns," he says.

In addition, BIM 5 allows for productivity to be factored into the total cost by calculating the number of workers and their rates for the duration of the programme.

Environmental sustainability is the primary consideration for BIM 6D, including stakeholder engagement and local community involvement across the project's lifecycle. It is the resulting maintenance and support plans across this lifecycle that informs the work of BIM 7D.

"Following a design for a client, drawings are handed over and shelved to gather dust, long after the project itself has been finalised. However, there is a lot of intelligence in that data from an operational point of view, which can be inputted into the 3D model," Silidi concludes.

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