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African Review

FEBRUARY 2017

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Cover picture : Rio Tinto
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Editor: Luke Barras-Hill
Email: luke.barras-hill@alaincharles.com

Editorial and Design team: Bob Adams, Prashant AP, Hiriyti Bairu, Miriam Brtkova, Ranganath GS, Rhonita Patnaik, Rahul Puthenveedu, Zsa Tebbit, Nicky Valsamakis, Vani Venugopal and Louise Waters

Group editor: Georgia Lewis

Publisher: Nick Fordham

Publishing Director: Pallavi Pandey

Magazine Manager: Richard Rozelaar
Tel: +44 207 834 7676 Fax: +44 207 973 0076
Email: richard.rozelaar@alaincharles.com

India — TANMAY MISHRA
Tel: +91 80 65684483
Email: tanmay.mishra@alaincharles.com

Nigeria — BOLA OLOWO
Tel: +234 80 34349299
Email: bola.olowo@alaincharles.com

UAE — RAKESH PUTHUVATH
Tel: +971 4 448 9260 Fax: +971 4 448 9261
Email: rakesh.puthuvath@alaincharles.com

UK — STEVE THOMAS
Tel: +44 20 7834 7676 Fax: +44 20 7973 0076
Email: stephen.thomas@alaincharles.com

USA — MICHAEL TOMASHEFSKY
Tel: +1 203 226 2882 Fax: +1 203 226 7447
Email: michael.tomashefsky@alaincharles.com

Head Office: Alain Charles Publishing Ltd, University House, 11-13 Lower Grosvenor Place, London SW1W OEX, United Kingdom
Tel: +44 (0)20 7834 7676, Fax: +44 (0)20 7973 0076

Middle East Regional Office: Alain Charles Middle East FZ-LLC, Office L2-112, Loft Office 2, Entrance B, PO Box 502207, Dubai Media City, UAE,
Tel: +971 4 448 9260, Fax: +971 4 448 9261

Production: Kavya J, Nelly Mendes and Sophia Pinto
E-mail: production@alaincharles.com

Subscriptions: circulation@alaincharles.com

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Editor's Note

The slump in commodity prices last year posed a considerable challenge for global businesses, particularly mining. But trying as the times may be, "there is a common consensus in the industry that it has reached the bottom of the cycle and growth will eventually return", notes research and consulting firm Frost & Sullivan. As we begin 2017, the sniff of a rebound can help inject new confidence into potential sales and purchases. Mining companies will continue to streamline balance sheets in the face of cost hikes, resource and portfolio pressures, geopolitical risks, not to mention adapting to the rise in new technology to stay competitive.

With that in mind, this month's issue of *African Review* is a mining special. We chart the challenges and opportunities facing the niche African mining insurance sector, preview this month's Mining Indaba and interview Olympus on new technologies. Elsewhere, sub-Saharan countries are given a macro-economic health check, including prospects for growth, in our business outlook and forecast. Plus, don't miss an exclusive interview with Nigerian Ports Authority MD Hadiza Bala Usman on the new Badagry deepsea mega port and free zone, and much more.

On a different note, this will be my last issue as editor of *African Review* as I move on to pursue a new opportunity outside the industry. I'd like to take the chance to thank everyone I have had the pleasure of interviewing during my tenure, and I do hope our paths cross again in the future.

Luke Barras-Hill, *Editor*

Contents

North African entrepreneurship bottlenecks 'need attention'

More should be done to help budding entrepreneurs in North Africa start and sustain their businesses, the African Development Bank (AfDB) has said.

A new report says that while entrepreneurial skills are very much in evidence among the region's youth, conditions for making businesses thrive long-term remain extremely challenging.

Many new start-ups fail to make it to the next level and become viable businesses, it states, citing tough initial conditions facing entrepreneurs.


Businesses display their wares at a bazaar in Egypt (Source: Pixabay)

"In fact, there is too much loss during the process, to the detriment of a private sector-led growth," the report, entitled 'The Role of Nascent Entrepreneurship in Driving Inclusive Economic Growth in North Africa' notes.

It analyses the role of entrepreneurship in driving "inclusive" growth in the region, which is growth that allows vulnerable groups (the poor, women and youth) to contribute more to the economy.

However, too many nascent entrepreneurs fail to ultimately grow into formal business owners.

While there is no shortage of young entrepreneurs aged 25-34 years, these people typically come from low income families, the report shows. However, statistically, most new firm owners are individuals working for rich families with access to informal investors.

One of the problems is the low level of education, which impacts on opportunities for aspiring business owners.

"Most of the individuals that engage in business creation have at least post-secondary education," the report states. "This implies they are able to deal with the basic paperwork required to set up a business."

Another constraint is access to finance. It has been shown that individuals with informal investor and/or wealthy family are willing to be business owners, the AfDB says, meaning the failure rate for newly created enterprises across North Africa remains too high.

The bank urges governments to step in to bridge the gap in supporting nascent entrepreneurs during the transition into formal business.

TUNIS FINANCIAL HARBOUR NEARS COMPLETION

Bahrain-based GFH Financial Group says its ambitious US$3bn Tunis Financial Harbour (TFH) is on track and will be open soon for business.

It recently held a ceremony in the Tunisian capital to mark the near completion of infrastructure works on the first and second phases of the project, an event attended by Prime Minister Youssif Chahed.

The development will house a financial district designed to act as a hub for financial and banking activities in North Africa, attracting financial institutions, investment banks, insurance companies and allied services.

The multi-phase scheme will ultimately extend over 523 acres in the coastal area of Hessiene, Ariana in Tunis and will also include residential and recreational areas such as a golf course and marina. It follows a recent gathering of world leaders at the Tunisia 2020 International Forum for Investment, where more than US$14bn in aid was announced by Arab and European countries to support Tunisia's economy.

BIG BRAND HOTEL INVESTMENTS BODE WELL FOR REGIONAL ECONOMY

A series of new hotel openings and planned expansions by major global brands' Marriott and Hilton underscores a continuing level of confidence in North Africa's economy.

In Algeria, Marriott International has opened its seventh hotel in the country, the Sheraton Annaba and the company has more in the pipeline.

The new Sheraton Annaba, owned by Société d'Investissement Hôtelière, boasts 201 guest rooms spread over 18 floors with easy access to the airport and the city's main attractions.

The company already operates six other hotels in Algeria, offering a total 1,580 rooms.

With another six hotels under development, it is set to double its footprint in the North African country.


(Source: Starwood Hotels & Resorts Worldwide)

"The opening of Sheraton Annaba further underlines our commitment to growth and expansion in Algeria, a market which continues to be integral to our overall development strategy throughout Africa," said Alex Kyriakidis, president and managing director, Middle East and Africa, Marriott International.

Other major developments include Hilton Hotels' plans for a first hotel in Casablanca, in neighbouring Morocco. It announced this month that the construction of the Hilton Garden Inn Casablanca Sidi Maarouf is set to begin in 2018.

BRIEFS

ONEE assembles LNG project team

Morocco's state-owned power company ONEE (Office Nationale de Electrcite et de l'Eau Potable) has assembled a legal and financial advisory team to help fast track imports of liquefied natural gas (LNG) into the country.

The utility has selected HSBC Middle East as financial adviser, with the law firm Ashurst LLP chosen as legal adviser.

The HSBC contract is worth US$7mn while Ashurst will earn around US$2mn, ONEE said in a statement.

ONEE is looking to import up to seven billion cubic metres (bcm) of gas by 2025 to help bolster local energy supplies.

The entire project, worth up to US$4.6bn, includes the construction of a jetty, terminal, pipelines and gas-fired power plants.

Algeria data speeds surge

Nokia and Ooredoo Algeria have achieved a ground-breaking transmission speed of 1.2 terabits per second over optical fibre in Africa's first field trial of innovative optical communications technology.

The trial was conducted between Algiers and Aïn Defla province over a distance exceeding 200km.

Commercial deployment of the technology in the near future will allow Ooredoo Algeria to offer high capacity-based solutions to its subscribers.

Pierre Chaume, head of Nokia's North Africa market unit, said, "This trial is an important and critical step in helping Ooredoo Algeria increase capacity and add flexibility to its network.

"The deployment will also support the 4G deployment plans of the service provider."

Uganda launches its first grid-connected solar plant

Uganda has officially launched its first grid-connected, 10MW solar power plant as part of the country's move to tap its renewable energy resources and expand its electricity generation capacity.

The US$19mn plant, funded by Norway, Germany, UK and the European Union, was officially unveiled by Uganda's minister of state for energy, D'Ujanga Simon. The project was developed under the Global Energy Transfer Feed in Tariff (GET FiT), a support scheme for renewable energy projects managed by Germany's KfW Development Bank in partnership with Uganda's Electricity Regulatory Agency (ERA).

The power plant is one of the largest solar power plants in East Africa (Source: zhangyang13576997233/Shutterstock)

Commenting on the development, European Union head of delegation to Uganda, the Ambassador Kristian Schmidt said, "The regulatory framework is conducive and government rightly recognises Uganda's energy future must be renewable. It is great that this is now triggering private sector interest in solar power generation. The European Union is proud that our grant contribution ensures the realisation of the Soroti Solar Plant, and I hope this is only just the beginning for many more to come."

The plant was developed by Access Power and Eren Re, two energy sector investors based in Dubai and France respectively. According to a press release by Access Power, the plant is made up of 32,680 photovoltaic panels and is one of East Africa's largest solar plants and the electricity generated will help power at least 40,000 homes.

MD project origination at Access Power, Vahid Fotuhi, commented at the launch of the plant that although the station has a nominal capacity of 10MW, it is scalable to 20MW.

ADDIS ABABA-DJIBOUTI RAILWAY COMPLETES

Ethiopia and Djibouti have officially announced the completion of the Addis Ababa-Djibouti Railway, a new 752km track linking Ethiopia's capital with the Port of Djibouti.

At ceremony held at the Nagad Railway Station in Djibouti, the new railway linking Djibouti to Ethiopia was officially inaugurated in the presence of Djiboutian president, Ismail Omar Guelleh and Ethiopian prime minister, Hailemariam Desalegn, and senior officials from across the region.

The new US$4.2bn railway, which will cut cargo journey times between the Port of Djibouti and Addis Ababa from three days by road to just 12 hours, can reach speeds of 160 km/h for passenger trains and 120 km/h for cargo trains. Trial services for the new railway began in October 2016, with regular services transporting goods and passengers expected to begin early this year.

Aboubaker Omar Hadi, Chairman of the Djibouti Ports and Free Zones Authority, said, "This railway marks a new dawn for Africa's integration into the global economy. From today, millions more Africans are now linked to Djibouti's world-class port facilities."

TANZANIA TO BEGIN CONSTRUCTION OF FIRST WIND FARM

Singida Wind Power project, Tanzania's first wind farm, is expected to begin construction from May 2017 following negotiations for power purchase agreement between the developer and the government.

Managing director of Six Telecoms, a project partner, Rashid Shamte, told the press that the power purchase agreement negotiations with TANESCO, the ministry of energy and minerals and the Attorney General office are at an advanced stage and is expected to be concluded by April 2017. He also commented that construction of the project would take 22 months before power generation begins.

Shamte added that more than 250 families would be relocated for the construction of the project. Negotiations are currently on going with the regional authority and the ministry of energy and minerals to make sure the relocation would be done in the best way possible.

Other partners for the wind farm project are said to include UK-based Aldwych International Limited and the World Bank's International Finance Corporation.

The US$300mn Singida Wind Farm is a potential 100MW wind-powered electricity power station and will be developed by Wind Power East Africa in Singida Region, a special purpose vehicle formed by the consortium to develop, own and operate the wind farm. The power station is owned by a consortium that consists of Six Telecoms, a Tanzanian company, Aldwych International Limited of the United Kingdom and the International Finance Corporation.

The development of the wind farm project follows the government's commitment to delivering clean, affordable, reliable and sustainable energy to all Tanzanians by 2030.

BRIEFS

Tanzania invites Chinese investors

The Tanzanian government has taken measures to attract Chinese investors and make it easier for them to process and invest in manufacturing and other sectors in the East African country.

The government has enabled the Tanzania Private Sector Foundation (TPSF), Confederation of Tanzania Industries (CTI) and Tanzania Chamber of Commerce, Industry & Agriculture (TCCIA) to establish regional offices in China towards this end. The three institutions are expected to attract potential investors from the Far Eastern countries interested in investing in Tanzania.

The offices would be used as information centres that will publicise Tanzania's investment portfolio.

Uganda secures loan for four-lane expressway

Uganda has secured a US$150mn loan from the African Development Bank towards the construction of the Busega-Mpigi 4-Lane expressway.

The project will involve construction of four major interchanges to facilitate interconnection with roads at designated locations including Nabbingo, Nsangi, Maya and Lungala, construction of 20 km of link/service roads, and the construction of 8 km of auxiliary lanes.

The project will cover construction of the 23.7 km Busega - Mpigi four lane express way, supervision consultancy services, quality assurance, financial and technical audits, studies and institutional support, in addition to compensation of project affected persons.

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Caledonia production to rise in Zimbabwe following healthy 2017

Gold mining earnings to increase in Zimbabwe into 2017. (Source: TTstudio/Shutterstock)

Caledonia Mining Corporation announced a record quarterly and yearly gold production from the Blanket Gold Mine in Zimbabwe, of which it owns a 49 per cent subsidery.

Approximately 13,591 ounces of gold were produced during the fourth quarter of 2016, a new record representing an 18 per cent increase on the same time in 2015, up from 11,515 oz. It was also a 1.2 per cent increase on the previous quarter, Q3 2016, up from 13,428 oz.

Caledonia also announced that this was a record gold mining year, stating that the total gold production in 2016 was 50,351 oz, representing a 17.6 per cent increase over 2015 which produced 42,804 oz.

The reason for the increase of output in 2016 was largely due to the start of production from below 750 metres, improvements that were made in underground infrastructure and the commissioning of the new ball mill. This is all part of the investment plan at the Blanket Gold Mine.

Caledonia's CEO, Steve Curtis, said "2016 was a significant year for Caledonia as the continued investment at Blanket begins to bear fruit. As well as achieving this record gold production level, the sinking of the new central shaft continued according to plan and reached a depth of 534 m by year end.

"We look forward to a further improvement in 2017 as we target 60,000 oz of production from Blanket, being a 20 per cent increase on the production achieved in 2016. We continue our progress towards annual production of 80,000 oz by 2021.

"As we increase production we expect earnings will continue to benefit from the increased sales volumes and from a lower average cost per ounce as fixed production costs and overheads are spread across higher production. This improvement makes us confident of achieving a significant improvement in earnings for 2017."

As target production for 2017 is 60,000 oz, the estimated on-mine cost is in the range of US$600-US$630 per oz and an all-in sustaining cost is in the range of US$810-US$850 per oz.

Highgate Mall, South Africa to become home and construction hub

South Africa's Highgate Mall is to be renamed the Home of Africa and will become a specialised home and decor mall, creating over 2000 jobs and accommodating 250 international and local brands. Small businesses in the construction sector are set to recieve a large boost through the discounted prices on materials through a partnership between te Chinese Commerce Ministry and the new specialist mall. Build n Buy, the international building materials supplier, is investing R500mn and will anchor the new Home of Africa Mall.

The regeneration is being headed by 27-year-old entrepreneur Nicholas Tan. He says, "The response of Home of Africa has been phenomenal in terms of people seeking occpation. This is the only mall of its kind in South Africa. We will have 250 international and local brands, 2,000 jobs will be created and mall products will be priced 30 per cent lower than other malls.

Nick Melrose, MD of Home of Africa said,"We had the benefit of converting Highgate Mall into this fantastic mall that is one stop for everyone. We have all home and décor products, from construction to home-related products."

AFRICAN INFRASTRUCTURE A KEY TARGET FOR ME INVESTORS

The Middle East's Islamic investors are targetting sub- Saharan African infrastructure assets, according to Nadim Khan, a project and infrastructure partner at Jones Day, one of the world's most integrated law firms. Development projects in sub-Saharan Africa are always looking for external financing, however, according to Nadim Khan, these projects may have added Islamic investment in the coming years. However, he does warn that legal and regulatory environments in African nations will need to evolve to better accommodate the needs of Sharia investors.

"Infrastructure is the driving force behind the emergence and continued growth of Africa's major new economies. And in order to sustain their trajectory and realize their promise they will need to continue to attract significant levels of project capital to fund their development," said Nadim Khan.

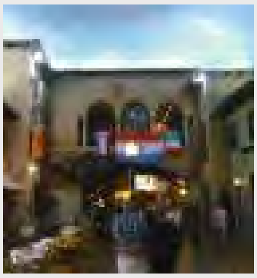
"The Islamic investment community has the capital, and it has the desire to engage in projects that deliver clear social and economic benefits to people and shareholders," continued Khan, "so to close this gap a more carefully structured regulatory environment that enables Sharia transactions is needed."

Projections estimate that that infrastructure spending in sub-Saharan Africa will increase by 10 per cent by 2025, exceeding US$180bn, maintaining its two per cent share of the global infrastructure market.

Currently, Islamic investment is severly underrepresented across African Infrastructure. Two years ago, South Africa issued a US$500m 5.75-year Sukuk, the largest Sukuk issuance from Sub-Saharan Africa at the time and only the third Sukuk to be issued by a non-Islamic country.

"South Africa's successful Sukuk issuance is a demonstration of promise and precedence for Islamic investment in Sub-Saharan Africa," continued Khan.

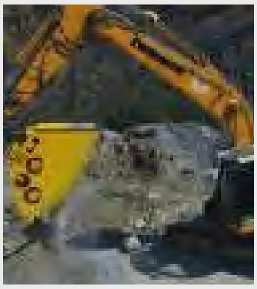
BRIEFS



The CILT will host Africa Forum 2017. (Source: Andy Mitchell/Commons)

CILTSA to Host Africa Forum

The Chartered Institute of Logistics and Transport: South Africa (CILTSA) won the bid to host the CILT Africa Forum 2017. The show will take place at Montecasino, Fourways, Johannesburg from 28 to 31 March 2017. CILTSA President Elvin Harris said: "With CILT's strong footprint in Africa, the event is a unique opportunity for individuals and businesses to expand into other markets and for the South African industry to tap into the African network at one time and in one place."



The new BC crushing bucket. (Source: Atlas Copco)

Atlas Copco expands range

Atlas Copco expanded its BC range of crushing buckets with two new models on 5 January 2017.

The equipment firm said in a company statement that the new BC 2100 and BC 5300 models have service weights of 2 tonnes and 5.3 tonnes respectively. The range already included teh BC 2500 and BC 3700, which were launched at the Bauma show in 2016. These two models will increase the capactiy spectrum of the line-up and diversify the equipment's applications.

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Amandi begins construction on 200MW Ghana power plant project

Once complete, the plant is expected to generate more than 1,600GWh per year (Source: Christian Lagerek/Shutterstock)

Amandi Energy has announced it has reached financial close and begun construction of the 200MW combined cycle, dual-fuel power project Amandi Energy Power Plant in Aboadze, Ghana.

The US$552mn funding required for the Amandi project comprises US$134mn in equity from the sponsor group.

This includes majority project owner Endeavor Energy – an Africa focused independent power company backed by global private equity firm Denham Capital – AFG, Aldwych, Pan African Infrastructure Development Fund 2 managed by Harith General Partners, and ARM-Harith Infrastructure Fund.

Amandi Energy is the first project-financed independent power producer (IPP) in Ghana to achieve financial close since the Cenpower Kpone IPP in 2014.

Fieldstone Africa advised the project company from early in its development in mid-2013 through to financial close and led the equity capital raise and debt structuring for the project's financing.

"We are very pleased to have advised on the successful financing of Amandi Energy. Fieldstone Africa is committed to solving the difficult financing challenges faced by the infrastructure sector across the region and continent," said Jason Harlan, CEO of Fieldstone.

Once constructed, the plant is expected to be one of the most efficient power plants in the country and will produce more than 1,600GWh per year, with a capacity to power up to one million Ghanaian households. The plant will be initially fuelled by light crude oil, but is expected to switch to indigenous gas from Ghana's offshore Sankofa natural gas field once available.

The Electricity Company of Ghana (ECG) is the primary off-taker and has signed a 25-year Power Purchase Agreement.

The Amandi Project is scheduled to come online in April 2019.

NIGERIA TEST RUNS SOKOTO STATES'S 30MW IPP

Nigeria's Sokoto State government has successfully conducted a test run of what is described as North Nigeria's first independent power project (IPP). The US$9.4mn IPP will have a minimum installed capacity of 30MW and a maximum capacity of 38MW.

During the test run, the chief operating officer of the contracting firm, Vulcan Elvaton Ltd, Franklin Ngbor, stated that the turbine of the project had already been tested three times.

He said, "What remains now is the synchronisation of the plant with the fuel tank and the main evacuation line, down to the transmission line. The plant when fully completed, finally fired and integrated into the national grid, can work for five consecutive years nonstop. It is only after it works for five years that it can be shut down for routine maintenance."

NIGERIA TO LAUNCH NEW E-PAYMENT PRICING POLICY

The Central Bank of Nigeria (CBN) has announced the deregulation of the merchant service charge (MSC) and said that it will be implementing a new pricing regime on electronic transactions by the second quarter of this year. MSC is a fee paid by merchants for e-transactions done through point of sales (PoS) terminals.

CBN director of banking and payment system Dipo Fatokun announced that from 1 May, the apex bank would no longer regulate the MSC and that it would be replaced with Interchange Fee regime.

He said that the decision was made as a result of the limitations of the MSC regime and in tandem with the objectives of the Payments System Vision 2020. The CBN, in consultation with stakeholders, has decided to migrate the payment card to a superior pricing mechanism, he added.

The new pricing regime is expected to boost payment card issuance, investment in loyalty programmes and the expansion of acquirer network infrastructure across the country.

In a document entitled 'Circular on the Implementation of the Interchange Fee', Fatokun stated, "With the introduction of the Cash-Less Nigeria Project and the release of the Guidelines on PoS Card Acceptance Services, the CBN outlined the MSC and the modalities for the payments system. This had enhanced the issuance and utilisation of cards transaction in the country and brought structure to the compensatory mechanism for parties involved in the transaction."

"With effect from 1 May 2017, the CBN will no longer regulate Merchant Service Charge (MSC). The interchange fee regime will replace the MSC. Merchants and acquirers will henceforth negotiate the MSC, while the CBN will control the interchange fees paid by the acquirers to the card issuer and other regulated service providers, as defined by the CBN."

BRIEFS

Ghana ratifies Trade Facilitation Agreement

Ghana has ratified the Trade Facilitation Agreement (TFA), with its instrument of acceptance submitted to the WTO on 4 January. The TFA will enter into force once two-thirds of the WTO membership has formally accepted the Agreement. Ghana is the 104th WTO member to ratify the agreement and only six more ratifications from members are needed to bring the TFA into force.

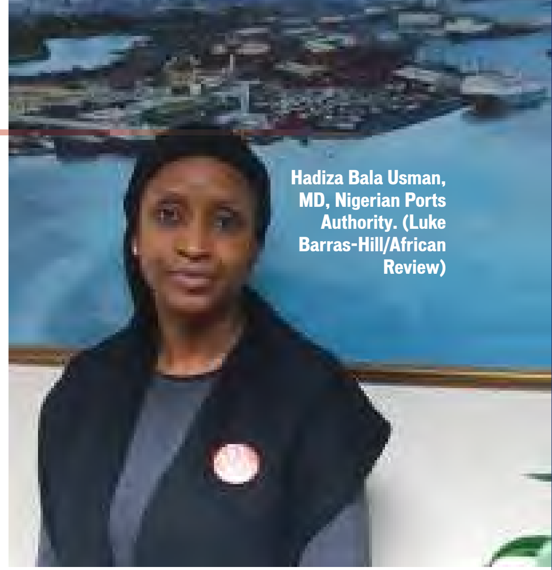
The TFA, which was concluded at the WTO's 2013 Bali Ministerial Conference, contains provisions for expediting the movement, release and clearance of goods, including goods in transit. It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues. It further contains provisions for technical assistance and capacity building in this area.

Ingenico partners with Interswitch in Nigeria

Ingenico Group, the global leader in seamless payment, has announced a strategic partnership with Interswitch Nigeria Limited, the leading transaction switching and electronic payment processing company in Nigeria.

The integration of Ingenico Group technology with Interswitch's switching and processing system is expected to allow end-users to benefit from the next generation of payment technology and the smoothest and most secure user experience when initiating electronic transactions

"As Nigeria enters a new era of payment, Ingenico Group and Interswitch are joining forces to better address the market challenges and eliminate the need for cash," said Mitchell Elegbe, Group Managing Director and CEO at Interswitch.



Hadiza Bala Usman, MD, Nigerian Ports Authority. (Luke Barras-Hill/African Review)

High tide for change

As construction is set to begin on Africa's largest deep sea port in Badagry, Lagos, *African Review* speaks to Hadiza Bala Usman, MD, Nigerian Ports Authority, about future Nigerian maritime success

"The job is enormous," responds Hadiza Bala Usman, when asked by *African Review* how big a task regenerating Nigeria's ports infrastructure represents.

Previously chief of staff for the Kaduna State governor, Usman is well known for her passionate campaign entitled #BringBackOurGirls to rescue Nigerian schoolgirls kidnapped by Boko Haram in 2014, a cause she remains committed to today. Appointed MD of the Nigerian Ports Authority (NPA) – a crucial government artery – by President Muhammadu Buhari in July last year as the successor to Alhaji Habib Abdullahi, Usman is the first female chief in NPA's history. At the time she took office, she proclaimed the NPA "would strive for enhanced operating efficiencies to facilitate improved revenue generation and inflows into the national treasury," with "anything less than world-class service simply unacceptable". Seven months into the role, Usman tells *African Review* a number of mechanisms are in place to improve Nigeria's ports' infrastructure, such as blocking revenue leakages, strengthening monitoring and compliance processes, deploying a single-window platform for payment systems and reviewing concession agreements.

While outside the purview of the NPA, the issue of hastening import and export clearances in Nigeria is important to the maritime economy, especially to exploit its essential minerals resource trade. Collaborating with relevant stakeholders to automate processes and ensuring timely clearances, Usman says, remains important for the NPA. One particular issue, she says during interview, is the problem of diverted cargo to neighbouring West African ports such as Benin and Togo.

"Some governments' fiscal and trade policies, though well intentioned, are largely responsible for the diversion of Nigerian-bound cargo ships," she explains.

"For an import dependent country like Nigeria to ban items that we don't produce locally to meet our demands, but which are absolutely essential, can only result in diversion. These items still end up in the country through smugglers."

Usman admits that at present, Nigeria's ports are "not as competitive as they should be", and the NPA is currently conducting a tariff review to ascertain price competitiveness at its ports, alongside making tariff regimes more transparent via its website.

"We have written to appropriate government functionaries informing them of the situation and requesting such policies be revisited with a view to ensuring the diversion of ships is eliminated and at the same time, the government's good intention is also preserved," she tells *African Review*.

"We are also prepared to consult and make informed adjustments to our tariff regime if that would be in the overall interest of the national economy."

Badagry: addressing the capacity gap

The jewel in the crown in improving competitiveness across Nigeria's ports is the construction of the US$2.5bn Badagry MegaPort, the outline plans of which were approved by the Federal Executive Council last August. Part of the Badagry Free Zone (BFZ) located in Lagos, the project is set to act as a focal hub for Nigeria's port development, aside creating thousands of jobs. As important is the port's envisaged ability to recapture cargo bound to other ports.

"The project is extremely important if our ports are to remain competitive in terms of international trade and commerce, as neighbouring countries are in the process of developing deep-sea ports capable of handling the very large carriers that require large draughts," explains Usman.

"As a result of economies of scale, larger vessels calling at the port will ultimately translate to lower cost of import/export for Nigerians."

In addition, the Federal Government's recent ban on the importation of vehicles through the land border is welcome news for the country's ports business.

At the time of writing, Usman clarified that construction work on the port had yet to begin – despite widespread reports to the contrary – with conversations currently ongoing with developers.

Alongside project partner Integrated Logistics Services (INTELS), NPA and the Ministry of Transport has concessioned 25 terminals to different companies. All the terminals have development plans based on pre-agreed terms, the first of which is up for concession in Q1 this year, *African Review* learns.

Last month, the Nigeria Export Processing Zones Authority (NEPZA) granted a licence to the Badagry area, officially named Maritime Africa Economic City, shortly after NEPZA's managing director Gbenga Kuye was criticised by Members of the Senate Committee on Trade and Investment for failing to perform adequate oversight of the authority during a visit to Calabar Free Trade Zone.

Fundamentally, the new port will address the question of improving regional port capacity; with no room currently available for further expansion in the Lagos area and the technological pace of change in shipbuilding and cargo structures posing infrastructure challenges in handling new generation vessels and cargo, change is required.

"The current lull in port activities is occasioned by the economic recession but there is still a lot of interest to develop capacity (across the country) because it is well known that the economy will pick up sooner or later," Usman notes.

Looking ahead, a 25-year port master plan will feed into the strategic plans of the Federal Government, one element of which is provisioning appropriate infrastructure to cater to the important minerals and agricultural sectors of Nigeria's economy.

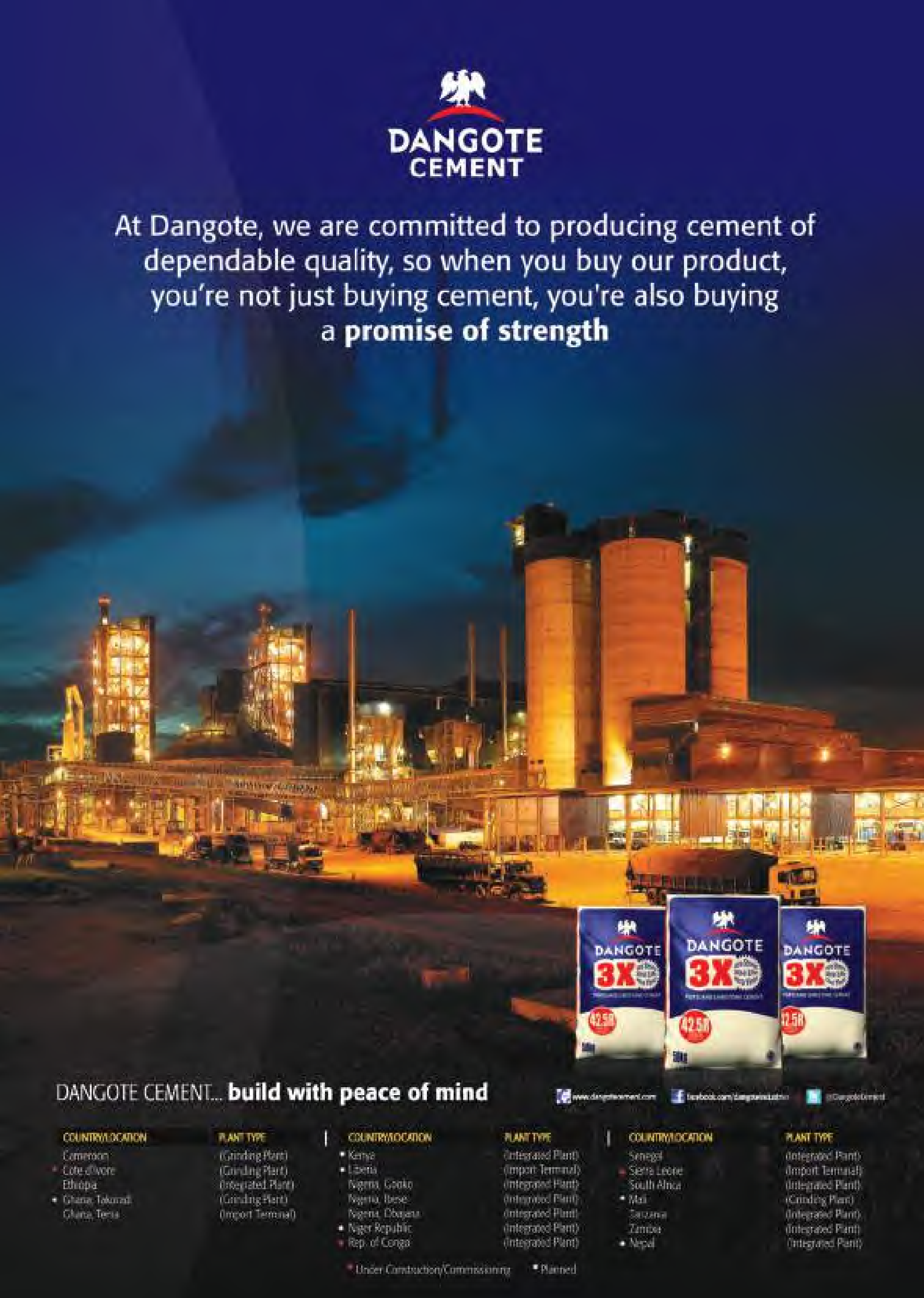
Another obligation is concession agreement reviews, however, Usman discloses that "after more than 10 years of concession, no review has been undertaken due to a lack of political will."

The current state of ports' infrastructure is being assessed by the NPA, and it has recently concluded maiden visits and inspections of infrastructural facilities in all port locations.

"We were surprised by the level and extent of deterioration of numerous port infrastructures," Usman comments. "That is partly why we have made a case to the government for an upward review of our current share of the 7 per cent Port Development Levy to augment our financial capacity for the challenge.

"What we are currently doing is drawing up a comprehensive port infrastructural renewal programme with priority given to those infrastructure whose immediate renewal would positively impact on port operations and revenue generation.

In the meantime, Badagry will provide some highly-anticipated crumbs of future comfort… ■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* Cote d'Ivore (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

Upcoming Events Calendar 2017

FEBRUARY

6-9
AFRICA MINING INDABA
Cape Town, South Africa
www.miningindaba.com

14-16
MIDDLE EAST ELECTRICITY
Dubai, UAE
www.middleeastelectricity.com

15-17
CIBEX/SCALEX EAST AFRICA
Nairobi, Kenya
www.cibexeastafrica.com / www.scalexeastafrica.com

21-22
AFRICA ENERGY INDABA
Johannesburg, South Africa
www.africaenergyindaba.com

21-23
SOLAIRE EXPO
http://solaireexpomaroc.com/

21-23
AIR CARGO AFRICA
Johannesburg, South Africa
www.stattimes.com/aca2017/

MARCH

27 Feb-2
NIGERIA POWER FORUM
Abuja, Nigeria
www.nigeria-power..com

1-3
BUILDTECH
Kiev, Ukraine
http://www.kievbuild.com.ua

7-9
PROPAK EAST AFRICA
Nairobi, Kenya
www.propakeastafrica.com

7-11
CONEXPO-CON/AGG
Las Vegas, US
www.conexpoconagg.com

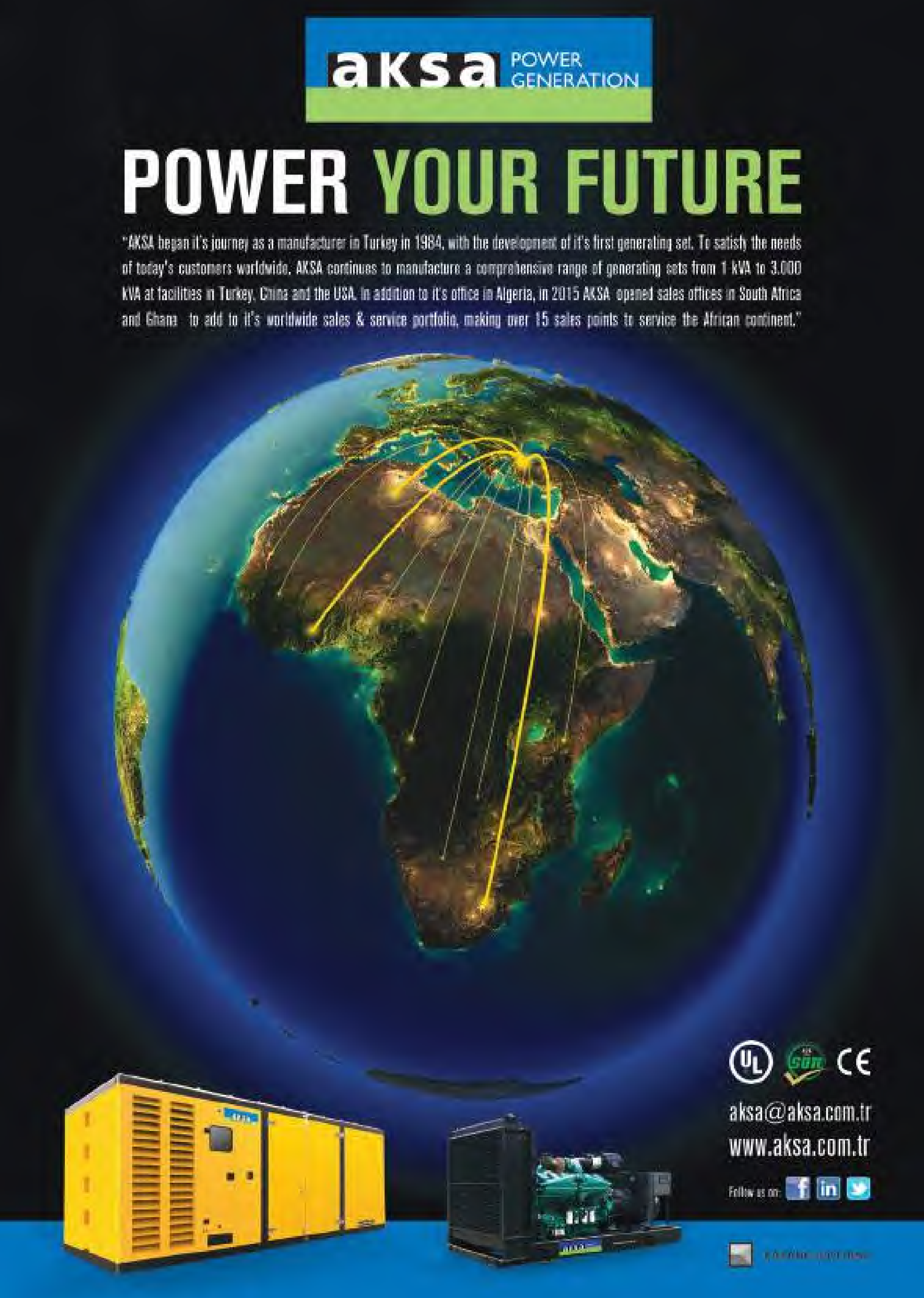
14-15
SEAMLESS
Cape Town, South Africa
www.terrapinn.com/exhibition/seamless-africa/index.stm

20-21
AFRICA CEO FORUM
Geneva, Switzerland
www.theafricaceoforum.com

20-22
BUILD EXPO AFRICA
Nairobi, Kenya
www.expogr.com/buildexpokenya/index.php

21-23
SECUREX, WEST AFRICA
Lagos, Nigeria
www.securexwestafrica.com/conference/

28-29
POWER & ELECTRICITY WORLD AFRICA 2017
Johannesburg, South Africa
www.terrapinn.com/exhibition/power-electricity-world-africa/index.stm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A selection of product innovations and recent service developments for African business
Full information can be found on www.africanreview.com

NIGER RENEWABLE PROJECTS TO BENEFIT FROM FUNDING

Abu Dhabi Fund for Development (ADFD) and the International Renewable Energy Agency (IRENA) has announced on 14 January that Niger, along with the Marshall Islands, Seychelles and the Solomon Islands, will recieve US$44.5mn in funding to develop local renewable projects. The funding will support the development of a diverse range of projects including a hybrid micro-grid project employing solar PV and advanced lithium-ion batteries, a hydropower project, integrated wind and solar, and a combination project consisting of micro-grid and solar home kits.

REGIONAL GAS-TO-POWER HUBS 'A WIN-WIN FOR AFRICA'

APR Energy operators conducting maintenance on a mobile gas turbine generator at Rocha Pinto, Angola (Source: APR Energy)

Cross-border power solutions wield the greatest potential in capitalising on burgeoning gas-to-power regimes across the continent, APR Energy's regional sales director Colm Quinn has told *African Review.*

The firm, a leading provider in fast-track mobile turbine power, says the creation of intra-regional generation hubs to power pool with neighbouring countries represents a 'win-win' scenario for Africa as countries such as Namibia, Mozambique, South Africa and Ghana continue to develop crucial infrastructure such as LNG import terminals.

"We believe this is an extremely viable solution for Africa: countries with reliable access to fuels like LNG or propane can install enough generating capacity to meet their national needs," commented Quinn.

UGANDA TO CONSTRUCT BUSEGA MPIGI EXPRESSWAY

The Ugandan minister of finance, Matia Kasaija recently signed a US$150mn loan from the African Development Bank which will be used to construct a four-lane expressway. "This project is expected to change the face of Uganda as it will ensure that the transport system of the country is streamlined and transportation of goods will be easier," Matia Kasaija said.

The four-lane expressway is expected to improve the transporation of goods in Uganda. (Source: Wikimedia commons)

Powering Our Future

How a mining company will ease a country's power crisis and help thousands of small businesses realise their ambitions.

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to grow my business
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so I can stay
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New economic realities

Despite the pronounced economic slowdown in Nigeria, South Africa and Angola - Africa's three biggest economies - over the past two years, the picture for economic growth in the rest of the sub-Saharan region is rosier

After a decade of real GDP growth averaging 5.7 per cent per year until 2014, economic activity over the past two years has fallen well-below potential growth because of a sharp downturn in sub-Saharan Africa's (SSA) three dominant economies. The rest of SSA, however, posted healthy growth in 2015 and 2016 – estimated at 4.7 and 3.9 per cent, respectively – according to the International Monetary Fund (IMF). Closer analysis suggests that media headlines centring on faltering growth in SSA are rather misleading, since roughly two-thirds of the countries are proving resilient by growing at a healthy pace. This is thanks to continuing diversification and good governance (Table 1). Africa is a highly diverse regional economy (Table 2). Aggregate growth numbers for the New Year should fall into three divergent groups.

High-tier performers: Most of the non-resource intensive economies led by Cote d'Ivoire, Ghana, Senegal, Ethiopia, Kenya and Tanzania, are projected to record the world's highest growth in 2017, driven by improved competitiveness, buoyant private consumption, high infrastructure investment and greater diversification.

Mid-tier performers: These countries, such as Botswana, Cameroon, Mozambique, Zambia and Uganda, depend on resources and services and manufacturing sectors. Reasonable growth is expected to be supported by public investment and ongoing business reforms, alongside some improvements in power supply, as new capacity comes on-stream and the few extractive-related projects are implemented. Lower oil import bills benefit this group, which includes DR Congo, Guinea, Mauritius, Namibia and Sierra Leone.

Low-tier performers: Regional oil-exporters Angola, Chad, Equatorial Guinea, and Nigeria, plus 'non-oil' South Africa are under severe strains as cuts in public spending, forex shortages, lower imports of capital goods and rising inflation have spread beyond the extractive sectors to the entire economy, with greater risks of the recent downturn becoming deeply entrenched. Policy uncertainty and structural bottlenecks (especially in power generation) dog South Africa. A modest growth is probable among oil-exporters if crude prices average US$55 per barrel, or higher, in 2017, which should help fund vital public projects, revive domestic demand and increase bank credit to the private sector.

The IMF explains, "The largest countries are expected to return to only very modest positive growth rates and other resource-intensive countries will register marginal improvements in their outlook, while others will continue to be propelled forward by ambitious public infrastructure plans and dynamic private sectors."

Countries with buoyant growth have seen fiscal deficits widen and debt levels expand in recent years, largely due to higher developmental spending. In those countries (with limited buffers), the IMF urges striking a better balance between increased investment spending needs and debt sustainability.

Table1. Sub-Saharan Africa's 2017 Growth Falls Into Three Groupings

COUNTRY	Employment shares in (percent)					
	GDP (2015) US$Bn	Population 2015 Mn	Real GDP Growth (%)		Consumer Prices (yr-avg; % chg.)	
High Performers			2016	2017	2016	2017
Cote d'Ivoire	31.75	22.70	8.0	8.0	1.0	1.5
Ethiopia	61.54	99.39	6.5	7.5	7.7	8.2
Ghana	37.86	27.41	3.3	7.4	17.0	10.0
Mid-Tier Performers						
Uganda	26.37	39.03	4.9	5.5	5.5	5.1
Mozambique	14.69	27.98	4.5	5.5	16.7	15.5
Namibia	11.55	2.46	4.2	5.3	6.6	6.0
Low-Gear Growth						
Chad	10.89	14.04	-1.1	1.7	0.0	5.2
Angola	102.60	25.02	0.0	1.5	33.7	38.3
South Africa	312.80	54.96	0.1	0.8	6.4	6.0

Source: World Bank and IMF projections

Battling global headwinds

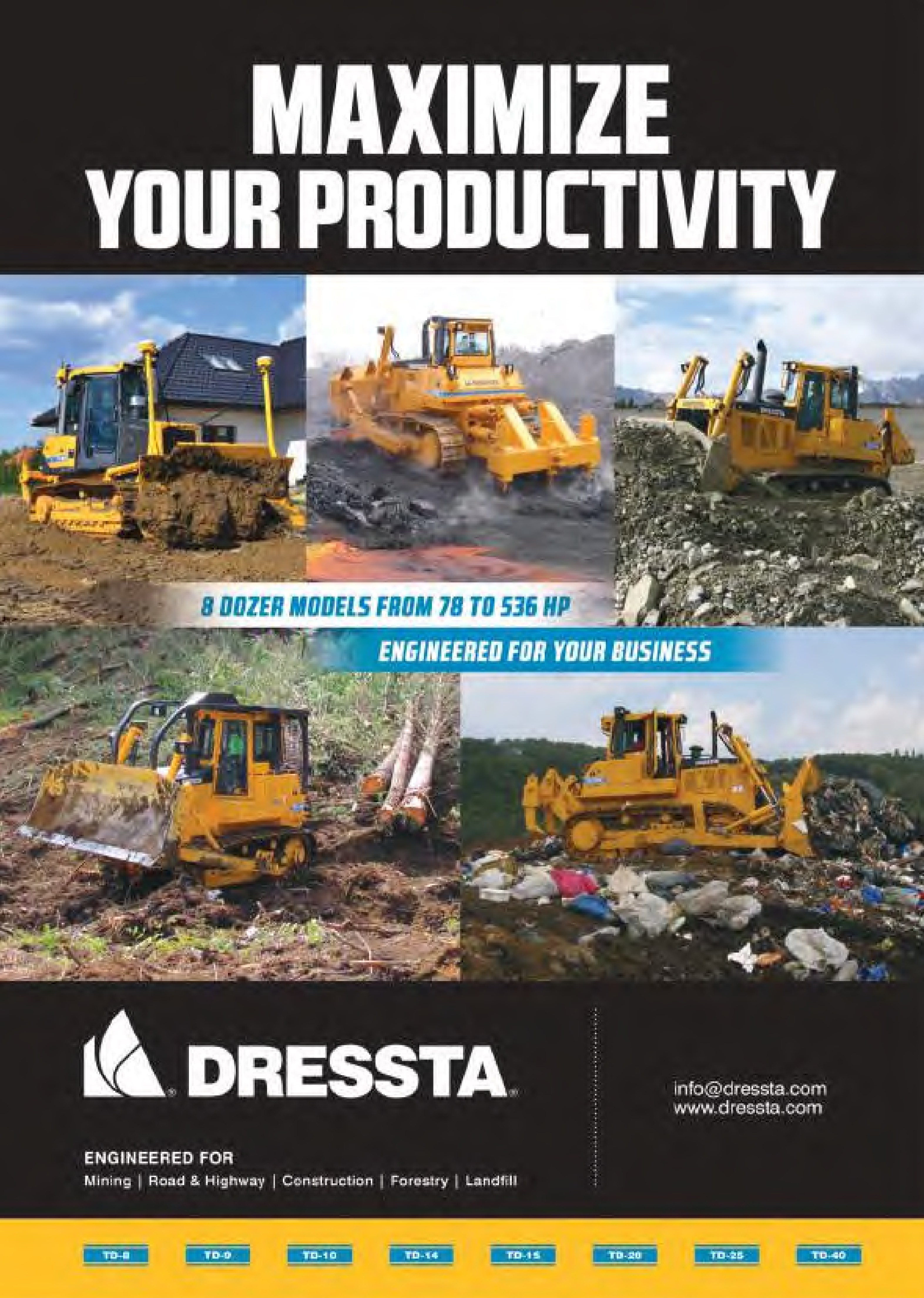
2016 was another tedious year for the global economy, with repercussions for the SSA region. Commodity price fluctuations (Bar Chart 1) hit oil-producing countries, which represent about half of SSA's GDP. Cheap oil hit by slack demand, supply glut and soaring inventories amounted to hefty 'terms-of-trade' shocks for oil-exporters – cutting their national income by 15 to 50 per cent of GDP since mid-2014, based on IMF estimates. Depressed industrial metal prices have also affected other commodity exporters, chiefly DR Congo, South Africa and Zambia, and to a lesser extent Guinea and Niger. Several major mining projects (including three iron-ore projects worth US$30bn) were either deferred or suspended.

China's appetite for commodities is abating, reflecting its gradual transition from investment-led to a services and consumption-based economy. This has prompted large falls in SSA exports of natural resources to China – now the largest single trading partner (ahead of the European Union and United States). Recent research shows the plunge in the value of exports to China for 23 resource-intensive countries was as much as 40 to 50 per cent in 2015, after robust expansion in earlier years fuelled by a booming Chinese economy.

Volatility in global capital markets resulted in increased risk aversion and higher borrowing costs for SSA frontier market governments. Concurrently, sovereign bond yields rose sharply, with investors demanding higher returns to compensate for deteriorating fiscal/external balances of borrowing countries. After record Eurobond issuances in the region during 2013-15, only Ghana and Mozambique had tapped debt markets during 2016.

Foreign direct investment (FDI) and other capital flows have levelled-off, in tandem with other emerging markets. This is coupled with feeble growth in the Euro-area, the UK and Japan, which remain major export markets, and a slide in remittances and official aid to the region. Moreover, a reduction or withdrawal of correspondent banking relationships, whereby major financial groups provide credit-lines for international trade and deposit-taking services on behalf of local banks, has curtailed funding, mainly for lower-rated countries such as Liberia, Sierra Leone and Mali.

The construction sector has also been impacted by cuts in infrastructure spending, mostly in Angola and Nigeria. In 2016, 286 projects valued at US$324bn were being constructed across Africa, a drop from 301 (valued at US$375bn) recorded in 2015, according to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Deloitte's 2016 *Africa Construction Trends* report. West Africa recorded 92 projects (valued at US$120bn) versus 85 in southern Africa (valued at US$93bn). South Africa recorded the highest number of projects at 41 for a single country, followed by Nigeria with 38.

Structural challenges

Greater efforts are required to improve SSA's growth dynamism to level with Asia and South America. This, in turn, requires further measures to improve the business environment by cutting red tape and safeguarding private property rights. Better domestic revenue mobilisation through efficient tax and customs collections and encouraging more savings can reduce vulnerability to external shocks. Promoting manufactured exports will mitigate the impact of bearish commodity markets. According to an IMF survey, the commodity price index could recover only to 60 per cent of its 2011 peak by 2021. But prices of key African exports (petroleum, iron ore and copper) are projected to remain low for the foreseeable future (Chart2). A more diverse export base helps unlock regional manufacturing and trade, while integrating SSA into global value chains.

While capital spending has doubled over recent years, growing population numbers and industrialisation across the region demands more sophisticated physical and digital infrastructure. The World Bank estimates Africa needs US$100bn per year over the next decade to close its infrastructure-financing gap. Investing in educational systems to upgrade skills and technological advancements, as well as developing higher-productivity industries and building the capabilities of small, medium enterprises (SMEs) are prerequisites for a resilient regional economy.

Benign prospects

Despite exogenous shocks and challenges, SSA's fundamentals remain sound thanks to strong demographics, continuous infrastructure development and an abundance of resources. Africa is among the lowest cost producers of several raw materials, which increases the attractiveness of its resources sector when demand and capital investment recover. In the long-term, four positive trends are likely to sustain future prosperity: a swelling middle class, a growing and skilled workforce, high urbanisation rates, and accelerating technological change. "These will help drive rapid growth in consumer markets and business supply chains, and will offer opportunities to build large, profitable industrial and services companies," says McKinsey Global Institute (MGI).

The World Bank expects urban growth to make a tangible contribution to GDP over coming years, with the share of Africans living in urban areas rising from one-third in 2010 to half by 2030. Much-needed investment into the construction sector for new developments such as retail parks, housing and transport will drive the growth of Africa's middle class - sources of purchasing power and private investment.

Over the next decade, an additional 187mn Africans will live in cities – representing half the population of the US – according to the United Nations. Urbanisation is strongly correlated with output growth, since productivity in cities is more than double compared to rural areas.

In an ageing, developed world, Africa could have a larger workforce than either China or India by 2034, projected at 1.1bn. The combination of a young population working and living in cities, good amenities, educational training and new markets bodes well for economic activity. MGI envisages household consumption and business spending rising to US$2.1trillion and US$3.5 trillion, respectively, by 2025 (including North Africa). Nigerian consumers alone could account for one-third of the continent's consumption growth in the coming decade.

The factors that made Africa favourable to investors in the first place are largely intact. A new Ernst & Young report echoes, "We have witnessed a structural evolution rather than cyclical change that marked previous boom and bust periods. Although exports remain commodity-oriented, private consumption has become a key growth driver, as has investment in infrastructure. The services sector constitutes an increasingly significant proportion of most economies and the role of manufacturing is increasing. However, most African economies are in a fundamentally better place today than 15 to 20 years ago."

In summary, SSA should remain the world's second fastest-growing region (after emerging Asia) in the period to 2020, adds the IMF. ■

Moin Siddiqi, economist

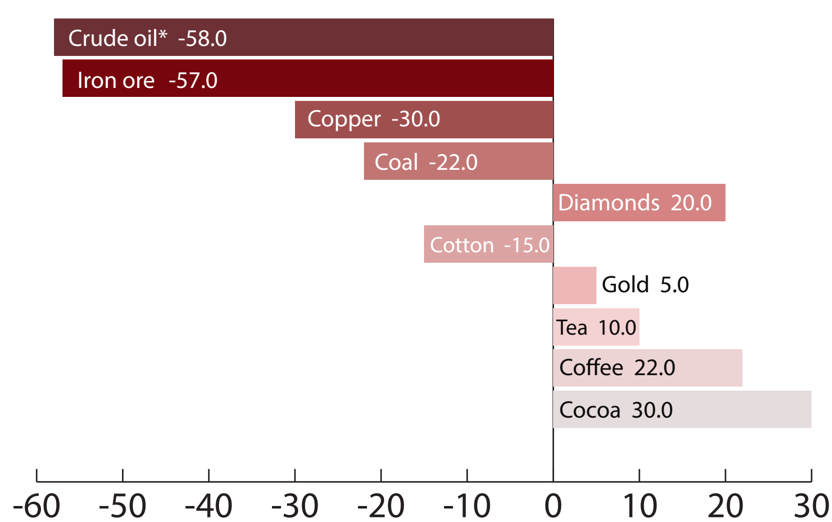
Table2. Sub-Saharan Africa Macro-economic indicators

	2014	2015	Est. 2016	Proj. 2017
Real GDP Growth (% chg.)	5.1	3.4	1.4	2.9
Excluding Nigeria & South Africa	5.7	4.7	3.9	4.9
Inflation, annual (% chg.)	6.3	7.0	11.3	10.8
Fiscal Balance, incl. Grants *	-3.2	-4.3	-4.6	-4.0
Government Debt *	31.7	37.1	41.1	42.1
Total Domestic Investment *	22.0	21.2	20.2	20.4
Banking Penetration /	57.4	60.1		
Merchandise Trade Balance *	-2.6	-11.4	-1.1	3.0
Terms-of-Trade (%) //	6.3	7.0	11.3	10.8
Foreign Exchange Coverage #	5.3	5.4	4.6	4.3
Net Foreign Direct Investment *	1.6	1.9	1.5	2.1
External Official Debt *	14.2	16.7	20.4	21.3

**As percent of GDP; / Total banking assets in percent of GDP; // Annual percent change in terms-of-trade (the ratio of export to import prices); # Gross FX reserves in months of total imports.*

Source: IMF, Regional Economic Outlook, SSA, October 2016.

Bar Chart 1. Selected Commodity Prices 2021 Projection (Percentage Change from 2013 Average)



Source: IMF Commodity Price System as of August 2016.

The fintech era

A tech-charged dawn is breaking over Africa. As better financing options spread across the continent, so too are the conditions that support it

Phone ownership and fibre optic connectivity are growing rapidly, bringing a world of fresh commercial opportunity. In particular, the continent's economic potential is leading some entrepreneurs to reimagine how finance works. Fintech innovations are opportunities for both lenders and borrowers as technology gets cheaper and more accessible.

The Alliance for Affordable Internet has noted the falling cost of smartphones, down by 20 per cent between 2008 and 2014. New fibre optic cables for Ghana and the whole East coast are laying the infrastructure needed for quicker internet. The One Network Area in East Africa has eliminated roaming charges to encourage communication and trade across the borders of Uganda, Kenya, Rwanda and South Sudan. The fintech revolution is riding this wave of technological progress by offering access to credit and financial services without the need for the banking infrastructure we have come to expect in western economies.

Affordable smartphones made by Xiaomi and Micromax are widespread in pockets across the continent, making the Internet just a few taps away. With this comes new opportunities in the form of innovations such as digital currencies, payment methods and sophisticated risk assessment models. This access creates a brand new customer base, allowing companies like my own, Prodigy Finance, to make finance simpler and more available.

To give one example, it challenges traditional banking structures that exclude those who can repay, but can't access loans. Banks are restricted by national legislation and often deny loans to those simply because a borrower is not native to the country where they wish to borrow. Prodigy Finance is using the power of the Internet to lend across borders to the world's brightest and most ambitious students. The process of lending needs streamlining, and there is now a rush to capitalise on technology that draws investors together with borrowers. Crowdfunding apps do this by cutting out financial institutions from the lending chain, making it more direct to access loans. African startups are challenging these pillars of finance across the board, such as Aella, a Nigerian company founded in 2015 whose app assesses a borrower's credit rating. This is one of many companies that are gradually eliminating institutionally slow, inflexible working practices.

Cameron Stevens, founder and CEO of Prodigy Finance (Source: Prodigy Finance)

The changes taking place mean that talented individuals with earning potential have greater access to capital. This capital is potentially an opportunity to pay tuition fees, find a job, or start a business. In the developed world, a rigid system presents a barrier to growth. Whereas in Africa, entrepreneurs, perhaps without access to a bank or a reliable postal service, can use the Internet to get on and get the capital they need to succeed in business. Reducing the number of intermediaries in big finance is strengthening the foundations of African business, providing a fast moving model for future economic development. The reach of Fintech stretches beyond lending, too. Everything from insurance requirements to physical cash is being challenged by a tech-savvy generation on the continent, as millennial entrepreneurs embrace the Fourth Industrial Revolution.

Today, internet access is the gateway to a credit system that is fully-functioning and awaiting investment. As electricity supply grows and as internet access continues to spread, so too will access to credit. The strength of Africa is unmatched by competitors, and the region is well positioned to embrace the current digital technology revolution. ■

Cameron Stevens is the founder and CEO of Prodigy Finance, an innovative fintech company lending to top students from emerging markets

Meeting capacity demands

The availability of international connectivity in Africa is helping support the economic and social needs of a developing continent, says Africa's carriers' carrier WIOCC

A key element underpinning Africa's continued growth is undoubtedly the improved availability and affordability of reliable, high-capacity international connectivity.

African consumers are increasingly utilising, and then becoming reliant upon, international connectivity to access information; communicate with others on social media platforms such as Facebook, Twitter, Skype and LinkedIn; stream videos, music and films access e-health and e-government services; participate in online gaming; support and undertake education and research.

According to the latest figures from Internet World Stats, at the end of June 2016 there were close to 147mn Facebook users in Africa and nearly 341mn people – more than a quarter of the continent's population – used the internet.

Businesses meanwhile are exploiting the improved connectivity to boost their efficiency and competitiveness, and to open up new markets globally. Investment is key to meeting this ever-increasing demand.

Investment in ICT infrastructure – from upgrading existing submarine cable systems, extending terrestrial fibre and creating more cross-border links, to constructing and expanding data centres, carrier Points of Presence (PoPs), metropolitan area networks and improving last-mile connectivity – is critical to the ability of local operators and Internet Service Providers (ISPs) to deliver the reliable, affordable, high-capacity international connectivity needed to serve an increasing percentage of the population.

WIOCC has spent well over US$200mn on its infrastructure in Africa to ensure the quality, reach, accessibility and reliability of its unique, award-winning network, which connects many African countries to each other, to Europe and to the Middle East and Asia.

Mike Last, chief marketing officer and vice-president, international business development, WIOCC (Source: WIOCC)

As well as investing in the major cable systems serving sub-Saharan Africa, WIOCC also owns and continues to expand a diversely-routed terrestrial network that links South Africa's east and west coast submarine cable landing stations and interconnects key cities. It has recently rolled out in Johannesburg the largest metro network in Africa.

Resilience and bandwidth requirements can be met by existing submarine cables

Despite the availability of multiple high-capacity submarine cables serving South Africa, there has been speculation regarding the possibility of new submarine cables landing in the country.

However, Chris Wood, CEO of WIOCC, firmly believes the existing submarine cable systems serving sub-Saharan Africa are able to offer sufficient broadband capacity and, very importantly, diversity, to not only meet existing and projected future demand, but also to provide a suitable level of protection against cable cuts.

A big issue currently is that some ISPS have chosen to utilise only a sub-set of the five submarine cables serving South Africa. As a result, their customers are more vulnerable to service interruptions arising from single and multiple cable cuts (such as the concurrent cuts to WACS and Seacom in 2016) than those on other networks. If such providers split their traffic across more of the existing cables, the impact of submarine cable downtime would be greatly reduced, preserving the connectivity of end-users.

WIOCC CEO Chris Wood explains: "The EASSy cable has a design capacity of 10Tbps, of which only just over half a Tbps has been lit and only 50 per cent of that is currently in use. A further capacity upgrade of EASSy in 2017 will add another 2Tbps, and that is expected to take at least another two to three years to be soaked up by the market."

Developments in optical technologies could further increase design capacity in the coming years. The WACS and Seacom cables also currently have spare capacity, and the technology on these cable systems also allows for significant capacity upgrades.

Complex challenges: solutions made simple

Supporting carriers in their efforts to improve communications to, from and within Africa requires reliable infrastructure, local expertise, market knowledge, contacts and an understanding of the regulatory environments.

The ability to establish long-term partnerships, where shared goals and the ability to work flexibly together to ensure that rapidly-changing end-user demands can be quickly and easily met is also vital.

WIOCC will continue to help carriers and ISPs with overcoming complex connectivity challenges, using all its expertise and experience to deliver reliable, scalable, high-speed connectivity solutions that enable businesses to flourish and consumers to enjoy a complete internet experience. ■

Mike Last is chief marketing officer and vice president, international business development at WIOCC

Bridging the digital divide through wireless technology

Cambridge Broadband Networks' (CBNL) CEO Lionel Chmilewsky speaks to *African Review* about how wireless technology is revolutionalising Internet connectivity across the continent

Lionel Chmilewsky, CEO, CBNL (Source: CBNL)

Application of wireless technology for connectivity has seen tremendous growth in the past few decades. With the shortcomings of fibre connectivity including high installation costs, long deployment time and constraints in productivity and operation, wireless technology is growing in popularity among operators and consumers in Africa.

British company Cambridge Broadband Networks (CBNL) provides extensive point-to-multipoint (PMP) microwave backhaul and enterprise access networks on 2G, 3G, LTE and 5G across Africa. CBNL also provides residential access, which delivers residential buildings and apartments with a high level of connectivity. The company has more than 25 customers across 15 African countries and works with Tier 1 operators like MTN, Vodacom and Airtel on the continent.

> "Wireless is the perfect technology when you are starting on greenfield and when you have a combination of remote areas and urban areas"
>
> **LIONEL CHMILEWSKY, CEO, CBNL**

Exploring the potential of point-to-multipoint connectivity

Point-to-multipoint communication refers to communication that is accomplished through a distinct and specific form of one-to-many connections, offering several paths from one single location. CBNL has played a major role in expanding the potential of point-to-multipoint technology in Africa. Speaking about the benefits, CBNL CEO Lionel Chmilewsky points out that it allows the operators to virtualise the infrastructure at the hub site and eliminates the need for elaborate infrastructure development. Since the technology operates through a hub that distributes and transmits capacity to the remote terminal, it requires only one piece of equipment at the hub and can have as many remote terminals as needed.

Point-to-multipoint solutions deliver cost savings and the time to deploy is also very short compared to traditional networks because once the infrastructure is active at the hub, incremental remote terminals can easily be added in the network.

"I think that is a very good solution, especially for SMEs because you can start with a small network and then you invest as you grow," he comments.

"This is a very good solution for Africa because it is very affordable, delivers high performance and is quick to deploy. Wireless is the perfect technology when you are starting on greenfield and when you have a combination of remote areas and urban areas. This is the perfect solution to connect the unconnected. This is why it has been very successful in Africa for the last 10 years."

Chmilewsky says that CBNL has been working in Africa almost since the company was established. The reason is that the company offers a solution that allows operators to deploy a network cost efficiently and quickly when they do not have existing cable or fibre
infrastructure. CBNL provides licensed point-to-multipoint networks – licensed because the operators need to have obtained the regulator licence to deploy.

Describing the potential of wireless to meet the challenge of the exponential rise in demand for data in Africa, Chmilewsky says, "The demand for data is a worldwide phenomenon. If you look at how people use their smartphones or their computers, downloading, video streaming, cloud services and voice over IP are being used increasingly. All of this consumes a lot of data. In the future, there will also greater demand for Internet of things and machine-to-machine. In the next five years, a range of 50bn machines will be connected worldwide in machine-to-machine. All of this will require very high capacity on the network. This is why high capacity wireless solutions are picking up very quickly."

Expanding 3G-4G backhaul

Speaking about CBNL's efforts to expand 3G and 4G backhaul in Africa, Chmilewsky stresses the major role played by wireless.

"The best thing about wireless technology is that you can leapfrog from a 2G network to a 4G network."

Affordability of the solution is a commonly faced challenge in the development of backhaul.

> "The best thing about wireless technology is that you can leapfrog from a 2G network to a 4G network"
>
> **LIONEL CHMILEWSKY, CEO, CBNL**

Point-to-multipoint connectivity helps to reduce the amount of infrastructure necessary to set up a network. (Source: Elena Ramburger/Shutterstock)

However, point-to-multipoint allows operators to have a much lower total count of ownership (TCO) than other technologies and some independent reports have quoted 30 to 50 per cent TCO savings with the technology.

"CBNL is spending a lot of time in educating and training our customers to make sure that once they have a network in place, they will make the best use of that network," Chmilewsky says.

Network systems virtualisation

Network systems virtualisation refers to the use of software to allow system hardware to run multiple instances of different operating systems concurrently. This allows different applications requiring various operating systems to run on one computer system.

One of the key benefits of network systems virtualisation is that it reduces the amount of hardware in the network to the lowest possible minimum.

Chmilewsky explains the CBNL approach as, "The way we are doing it with our point-to-multipoint technology is by using the one piece of equipment at the hub site through what we call ecolomultiplexing. That is using the peak and mean of a conversation in order to optimise the number of subscribers you can route on a sector. Not everyone is talking at the same time, not everyone is transmitting at the same time and our technology uses the blanks of a transmission or a conversation to create more remote terminals".

This allows all users in the network to potentially have full capacity. Chmilewsky says, "That is the beauty of virtualisation, the beauty of the technology that we use."

Another advantage of the technology is that it allows operators to oversubscribe. "Basically, they can create more users than they do in the point-to-point technology and we believe that the ratio that could be used with the technology is a factor of four. So, it is possible to sell up to four times the capacity that the network can provide. Let us say you have a network that can provide 1.2GB per sector, you can probably sell 4.8GB per sector. This is something that finds a very interesting application in Africa."

The multiple benefits offered by wireless technology continue to make it a key tool in delivering connectivity across Africa. ■

Expanding Uganda's sewerage infrastructure

Experts in Uganda are urging the national water and sewerage body to expand its sewerage network coverage to meet the needs of a rising population

Engineers in the construction industry say Uganda's sewerage system is still very limited in its ability to cope with the population of capital Kampala, which has expanded to more than 1.5mn. Statistics from Kampala Capital City Authority (KCCA) indicate that about 10 per cent of Kampala homesteads are connected to the National Water and Sewerage Corporation (NWSC) sewer line, a development they say poses serious sanitation and health challenges for residents of the city.

The NWSC, a government body in charge of providing water and sanitation services in the country, has been urged to expand the sewerage network for better disposal methods.

Engineer Wycliffe Mutesasira says residents in most places within Kampala, like Nsambya, are using septic tanks that are not environmentally friendly. This causes leakage of sewage that spills into the roads and in neighbouring areas.

"We have encountered damaged septic tanks resulting in seepage of effluent into surrounding areas and this could cause diseases as the water finds its way into the ground, thus causing contamination. Not every home in modern cities have a septic tank; it's not common except in countries in Africa," he adds.

According to the State of Environment report for Uganda 2008, poor on-site sanitation (pit latrines) and dilapidated sewerage systems significantly contribute to the contamination of both surface and ground water. It notes that the "most common sanitation hazard is the poorly constructed pit latrines, which are widely used in the rural and peri-urban areas."

Kampala is a cosmopolitan town comprising both rich and poor citizens. Most of the residents live in slum conditions and acute poverty. The rapid expansion of the city's population allows little time to plan accommodation, jobs, social amenities and infrastructure. Many people live in makeshift accommodation in flood plains, water ways and wetlands, the report outlines.

However, the report notes that many "Ugandans increasingly understand the link between the environment and human well being. Many people now easily relate deforestation and poor soil and water conservation practices to declining soil fertility, reduced agricultural production and worsening poverty".

The 2014 Population and Housing census carried out by the Uganda Bureau of Statistics (UBOS) says proper disposal of human waste involves the use of a toilet facility.

"The most commonly used toilet facility was a covered pit latrine without a slab (33 per cent) followed closely by the covered pit latrine with a slab (21 per cent)."

The Bureau says a higher proportion of households in urban areas than rural areas used VIP latrines. Improved sanitation includes flushing mechanisms, VIP latrines, covered pit latrines, private toilets with a slab, and EcoSan.

The census figures put the number of households in Kampala at 516,210 and only 51,621 of the reported homesteads are connected to the sewer line. This development, experts say, results in hundreds of tonnes of human waste ending up in the environment.

Positive infrastructural plans

The NWSC says many treatment plants are set to be built in the future and those in place are to be expanded to cover for the growing population.

The Corporation's public relations manager, Samuel Apedei, was quoted in the Independent Monitor publication admitting the big challenges ahead in ensuring all sewerage is managed, but also blamed the current situation on poor city planning.

He adds that for areas that are well planned, like the central business district and the old colonial areas, sewerage coverage is at 100 per cent, pointing out that the said planned areas are the smallest part of the city.

The official is further reported as saying that one of the facilities being expanded – and expected to be completed this year – is the Bugolobi treatment plant. It is expected to treat 45mn litres of waste water and serve 380,000 people while the multi-billion Lubigi plant handles five million litres of both piped and faecal matter from pit latrines every day.

The NWSC's managing director, Silver Mugisha, notes that "service to the urban poor remains one of the biggest challenges for most utilities in Africa".

Mugisha adds that the NWSC has also continued with the implementation of the Kampala Sanitation Project, which aims at improving urban hygiene and sanitation services within Kampala. ■

Geoffrey Muleme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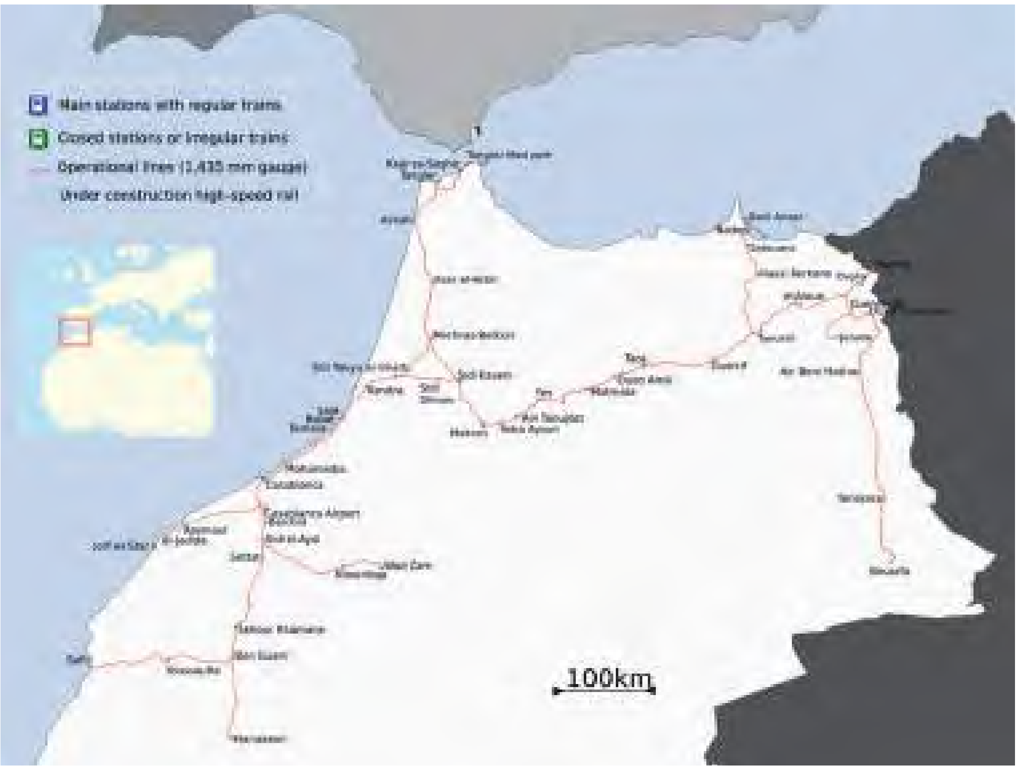
North Africa in Motion

The MENA region in the midst of a number of exciting transport initiatives



High speed rail network routes in North Africa (Source: achfin/Wikimediacommons)

In October, MAN Truck & Bus company opened a number of new workshops and dealerships across Morocco in association with Sefamar, MAN's importer in the country. To support this launch, MAN and Sefamar arranged a convoy of MAN's latest trucks to display its range to a growing market.

Samira El Mansouri, MD of Sefamar said, "The roadshow gave us the chance to get closer to our existing customers and to catch the eye of potential new ones. The fact that we opened three new sites sent a clear signal that customer service is our priority."

However, this is not a one off. Interest in the transport sector in North Africa is growing.

Now, many are describing the region as a bridge into Africa, which posesses plenty of untapped investment potential.

Peugeot trucks

PSA Group and Stafim, Peugeot's long term partner in Tunisia, signed a letter of intent in November to assemble and sell Peugeot branded pick-up trucks in Tunisia. If the plans keep to schedule, operations should start in mid-2018 and will produce 1,200 units per year, enough to cope with the Tunisian market and its demands.

Public Transport

In February, Oman's government-owned public transport company Mwasalat is to host the 7th International Union of Public Transport in Middle East and North Africa. The event will bring together global experts and key players in the public transport sectors to discuss and learn from each city around the world with the aim of enhancing public transport systems.

Mwasalat will host the event from 12-16 February 2017 at the Oman Convention and Exhibition Centre in Muscat.

HE Dr Ahmed bin Mohammed bin Salim Al Futaisi, Minister of Transport and Communications, will open the Seminar on 13 February and discuss the master plan of public transport in the Sultanate. The opening session will include Khalid Al Hogail – chairman of UITP MENA Division and chief executive officer of Saudi Arabia public transport company SAPTCO – and the keynote speaker Dario Hidalgo, sustainable mobility researcher and practitioner, who will present the best ways to make public transport the preferred mobility choice in the Sultanate.

Aviation

At the end of November 2016, The International Air Transport Association (IATA) highlighted four areas that North Africa can improve to benefit most from its aviation sector. These are: assuring infrastructure is sufficient and affordable, curbing the spate of increased taxes and charges, aligning customer protection regulations with the rest of the world, and enhancing security. Alexandre de Juniac, IATA director general and CEO, outlined this during the Arab Air Carriers Association general meeting in Casablanca.

"Aviation is the business of freedom. Its success generates prosperity. A safe, secure, efficient and sustainable air transport industry contributes to the welfare of nations. Strengthening aviation, in partnership with governments, pays huge social and economic dividends. Airlines in MENA face very different business challenges.

> "The MAN roadshow gave us the chance to get closer to our existing customers and to catch the eye of potential new ones"
>
> **SAMIRA EL MANSOURI, MD, SEFAMAR**

But whether building or protecting competitiveness, cost-efficient infrastructure, global standards, reasonable costs and secure operations are critical."

Rail

In December, Progress Rail Services signed a contract with Tunisian Railways for 20 EMD GT42AC locomotives. The Caterpillar company has operated in North Africa and the Middle East for more than 60 years and is continuing its operations there.

"After a highly competitive process, we were extremely pleased to be selected as the supplier of choice for our GT42AC model based on reliability, fuel economy, advanced technologies and digital capabilities," Billy Ainsworth, Progress Rail president and CEO said in a statement. "These units will upgrade a previously aging railway fleet, by transforming it into a powerful, modern fleet for today."

Additionally, Morocco is continung its progress with the Tangier-Kenitra-Casablanca high-speed rail link. This is part of Morocco's economic growth plan to enhance its infrastructure, which has already been realised at Tanger Med Port and Rabat's new airport and toll roads linking Tangier, Rabat, Casablanca and Marrakech.

The 185km line, with operating speeds of 320km/h, is expected to open in 2018, and cuts a three hour 15 minute journey to 47 minutes. Tests took place last year to ensure that the TGV trains performed properly on the new line.

"These tests are to make sure that the performance of the TGV, including brakes, speed, and receiving electric power, is going well," said the directors.

The train, which is considered the first of its kind in Africa, is expected to carry "approximately 533 passengers with 121 in first class and 412 in second class".

These projects demonstrate not only the ambition of North African nations to look to the future, but their practice of implementing infrastructure projects as many regions cut back transport provision. ■

MAN trucks travelled 1,700km from Agadir to Tangier in 10 days (Source: MAN Truck & Bus)

Keeping Africa's machinery running

Sourcing spare parts quickly for machinery and equipment across Africa's huge landscape is not always easy, but the continent's immense flair for entrepreneurship and creativity means there is always a way to fix a problem

Ilala motor ship in Lake Malawi (Source: Chris Morrow)

Africa's sheer size, diversity of terrain, and the number of countries and borders, have always challenged logistics companies, especially when it comes to supplying time-critical parts to projects or key machinery. The general lack of infrastructure throughout the continent, which has long been regarded as a brake on development, has likewise tested the supply chain. West Africa's big mines, dams or other remote construction projects are rarely conveniently sited next door to a deepwater seaport or aviation hub, for instance. It's true that South Africa and other parts of the continent may be better connected, but sourcing and supply generally can present a major headache for those seeking to carry out day-to-day business activities across this vast landscape. Whether that's keeping a fleet of trucks on the road or locating specialist parts for diamond-tipped drills from across the world and getting them on site in as short a time as possible, Africa presents unique challenges. From potholed roads to red tape and corrupt customs officials, where spare parts never make it to their destination, Africa takes supply chain management to a whole new level. Sometimes, it may be quicker moving a product thousands of miles by truck from South Africa, rather than airfreight it into a logistics void like the DR Congo, where customs clearance can take a punishing 45 days. Dedicated South African expert providers, the likes of Barloworld Logistics, play a major role in helping businesses overcome many of these uniquely African hurdles.

Supply chain squeeze

Such challenges are continually evolving, however. The role of China has further warped the supply chain, according to Thomas Neumann, managing director of Assem Audi Company, a German business that has been supplying spare parts to Africa for 40 years.

"Many projects nowadays are given to Chinese contractors," he says. "They use their own equipment to realise projects, so for companies like us, and other suppliers, there is no real chance to supply equipment or parts." This has squeezed business for many third party logistics providers serving the Africa market, a problem compounded by many large foreign aid-driven contracts. "The awards for many projects by relief organisations are determined by budgets; they distribute projects such as highways, tunnels, airports and railways to contractors with the most competitive prices. In the end, Chinese companies are getting these projects with the lowest price, so the story starts again."There are other nuances to understanding the Africa market, as well, says Neumann. His company, which supplies heavy equipment, trucks and road building machinery and spare parts for major projects such as mines and quarries, cement companies and road builders, still understands the unique needs of its customers in this testing locale. "The understanding of quality is way different than in other regions of the world, such as Europe or the Middle East," he says. "In many cases, counterfeit parts or reconditioned items are used. Whatever fits can be used."

Creativity and innovation

Indeed, one of the unique facets of Africa's supply chain is its creative, flexible approach, one geared at getting the job done, rather than demanding the very best product or replacement part. This may be borne more out of necessity than anything else, but nonetheless reflects Africa's strong entrepreneurial spirit."They have had to make things last," says Linda Middleton-Jones, regional director for the Institute of Export & International Trade. "There is this wonderfully creative instinct. Africa embodies creativity; they have to be innovative because of the challenges involved." It is a trend highlighted in a recent paper by consultants McKinsey & Company, where it is argued that creativity and flexibility are essential ingredients to supply chain success in Africa, with its diverse physical, economic and political conditions. This is perhaps no more evident than in landlocked countries like Malawi, where the challenges of supplying heavy equipment far away from seaports are multiplied. "We overcame things in a different way," says Chris Marrow, who used to run the shipping service on Lake Malawi. "Ordering new parts could take months but creative fixing could mean much shorter repair times." Problems were compounded during the Mozambique war, he says, when access to Beira port was closed and the rail link destroyed by combatants. Now a part of the IOE stakeholder network, and chairman of Business Forum Southwest in the UK, he says that while airfreight opens up possibilities - and, of course, the war has long ended - little has changed through the years, with trucks still coming up from South Africa to

provide Malawi with essential supplies. Factoring in the cost of fuel for such long journeys, means inflated supply prices too, a critical issue especially for landlocked countries. "I think that mentality of 'managing', even though you don't have access to a supply chain, is really important," he says." And I don't see this as necessarily being a weakness."

'Healthy family' networks

Such 'creative fixing' eases the predicament for companies as to whether to hold onto large stocks of items on site, or await deliveries of new parts, which could take weeks or months. Yet there are numerous examples where the supply chain has clearly advanced tremendously, shaping itself around the uniqueness of Africa. Middleton-Jones cites the example of Coca-Cola, perhaps the world's most famous brand, which incorporates a wide network of micro distribution centres (or MDCs), which serve as local distribution nodes. These MDC owners move products by handcart to each tiny outlet in their local town. A key part of the success of this, or any, network, she says, is the contact between these micro entrepreneurs and the Coca Cola Tier 1 regional base in South Africa, which offers access to sales training, financing and merchandising. There are now an estimated 3,000 MDCs cross eastern Africa alone. "Key to any supply chain is communication, and that has really been helped in Africa in recent years by the use of mobile phones and even social media," she says. "It means you can do so much more than just ordering new stock." She calls it a 'healthy family' where best practice filters both downwards from the top, and vice versa, with the MDCs able to

The lack of infrastructure across Africa has challenged the supply chain process (Source: Chris Morrow)

relay the voice of the customer back up to headquarters. "All supply chains throughout the world have to have this mutual engagement to prosper," she adds. This model has sparked other innovation, with a medical delivery service embedded into the Coca-Cola network. Medicines and other supplies can be fitted into crates in-between the drinks bottles and delivered to an area without extra cost. Sharing resources has, in this way, minimised some of the risks inherent in the African supply chain.

Supply chain resilience

The growth of Africa's economy in recent years, and the ensuing investment dollars attracted, means major players are more willing to commit to building stronger, more resilient networks. This is certainly evident in more prosperous parts of the continent such as North Africa. German truck company MAN recently opened three new dealerships in Morocco, all with workshops, to extend its footprint. The new 10,000 square metre Agadir workshop includes five repair bays and a parts shop, as well as a sales showroom. By taking greater control over its supply chain, it is not only enhancing resilience, but also reassuring customers, with a mechanical or engineering facility on site with its own depository of spare parts, ready to fix problems at a moment's notice. But, much like doing business in Africa generally, overcoming supply constraints requires a tailored approach in order to understand specific market conditions, as well as a continuous improvement mindset. This includes taking advantage of regional economic agreements and trade corridors, as well as building the right partnerships, reckons McKinsey & Co. in its report. With more investment coming in, new infrastructure being built, better communications, and with growth rates holding up, Africa's supply chain dynamics are improving. Nonetheless, the on-the-ground reality shows the continent lags behind: the cost per ton-km of road haulage in Africa far exceeds that of western Europe by at least 20 per cent, and as much as 120 per cent, depending on the route. "Despite these improvements, much of Africa continues to struggle with poor logistics infrastructure and high distribution cost, requiring careful design of physical distribution networks (warehousing and transport) for commercial supply chains," the McKinsey paper states. With a little luck, and in true African style, a creative solution may be just around the corner. ■

Martin Clark

Layers of local experience

Ugandans are acquiring the skills to manufacture paint to East African standards. As as a result, the country's industry is now competing with international players

Local paint manufacturers in Uganda say the complexion of the industry is wholly different today. Unlike in the past, when foreign companies with no local expertise dominated the arena, Ugandans have now acquired the skills to produce paint that can meet the recently established East African standard. As a result, they are now able to compete on a good footing with foreign companies. East Africa recently launched one standard for its countries in an effort to improve the quality of the paint manufactured. All countries have to conform to the standards set.

Sempala Joseph, technical director of Sparrow Chemical Industries – a manufacturer and dealer in industrial products, industrial chemicals and paints – says Ugandans have joined the business of making paint, citing companies like Global paints, Peacock Paints and Seweco Paints among others.

"Ugandans have read industrial chemistry and paint technology and this has enabled them to make paint. They have also acquired skills from outside the country and are competing favorably," he says during an interview. "Unlike in the 1970s when foreigners left the country due to economic problems, Uganda lacked paint companies and resorted to smuggling paint from neighbouring Kenya."

Joseph says most buildings back then looked ugly. Relying on distemper, painted surfaces could be washed away with rain. The situation today however, is different entirely. Most buildings in Kampala and other towns are now painted with weatherguard decorative paints, unlike in the years gone by when snowcem, a by-product of gas, was used.

Uganda's paint manufacturing sector has come a long way since the economic challenges of the 1970s (Source: Apiwan Borrikonratchata/Shutterstock)

Decorative water-based paints, he continues, feature many brands at different price points. These include flat grade, which has standard, premium, matte varieties; emulsion paint; vinyl silk paint; weather guard paint and plastic undercoat.

"These paints are all decorative," Joseph notes. He also says there is textured stone paint for external walls, which is a protective coating, alongside auto paint, marine paint and aviation paint. Other mixtures like oil paint, which is used on surfaces like metal doors and frames, include primers for metal. Among these are zinc chromate, universal undercoat, aluminium zinc chromate, aluminium self knotting, and the aluminium pure leafing paint for petrol tanks.

"This paint is very important because it throws back the heat when the sun shines on it and the reflection keeps the tank cool," Joseph observes.

"Paint is a source of beauty. It is a beautifier. Good quality paint is determined by opacifier (e.g titanium dioxide) and binder (e.g acrylic). If you blend these two in reasonable quantities, these determine the quality of paint you're going to manufacture. The paint manufacturer says Ugandans use more decorative paints in their homes, schools, hospitals, churches and other buildings, noting, "decorative paint is very important because almost every homestead requires decorative paint.

"Paint is one of the useful products since it protects buildings from the weather. It also has preservatives to maintain cleanliness in addition to having colour that helps scientifically like colour codes."

Local knowledge - International links

Sadolin Paints Uganda manufactures a varied range of high-quality decorative products for both commercial and retail markets, while maintaining a licence agreement with Sadolin Paint Denmark Limited, which originally established the company in Uganda in 1963.

In addition, the company also provides protective coatings from International Paint South Africa, which offers high-performance coatings for all types of environment.

Sadolin Paints Uganda's sales manager Nilesh Jani tells *African Review* in an interview that Sadolin is the dominant player in the market and exports its products to neighbouring countries like Rwanda, Burundi and South Sudan.

"The construction industry in the country has been growing, but following the elections last year the market hasn't picked up and business is currently down. Sadolin is a franchise of Akzo Nobel which is the world's largest paint manufacturer and we follow international standards when it comes to quality, finish, hygiene, health and safety."

The company, Jani continues, has access to modern, decorative paint technology and supplies, textured finishes for buildings, and manufactures high quality wood-finish products, premium quality automotive, industrial and special application paints and coatings.

Joseph stresses that the "technology to make paint is sophisticated and requires qualified, trained and skilled people who are paint technologists". He adds that most chemicals are imported outside the country, although there are some chemicals that can be mined locally such as calcium carbonate (whiting), sodium sulphate and varium sulphate. Uganda is layering the canvas in paint manufacturing. While the final picture is yet to be completed, the country has made huge strides. ■

Geoffrey Muleme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Solving the supply and demand equation

Across Africa, there are ongoing plans to develop new gas power stations to reduce the gap between electricity supply and demand

Only seven of 48 sub-Saharan African countries have electrification rates above 50 per cent, with the remainder averaging just 20 per cent, notes Ernst & Young, Power Transaction and Trends, Q2 2015. In Kenya for example, although 73 per cent of the population live within 1km of a transformer, only 18 per cent are connected to the grid, according to Kenya's Electrification Authority, October 2016. Even those with access suffer high prices for an insufficient and unreliable supply, adds management consulting company McKinsey in its Powering Africa 2015 report. Currently, the region's total generating capacity is around 80GW, the same as the UK's.

South Africa and Nigeria have each planned at least four gas power plants. Ghana and Kenya are also planning gas powered stations, says Greg Stonefield, international corporate finance partner at King & Wood Mallesons LLP.

Drivers

Appreciation of the rate of population increase, now and in the foreseeable future, is the main driving force spurring governments to confront their country's energy deficit. In the past year, Africa's population increased by 30mn. By 2050, Africa's total population will have doubled to 2.4bn, according to the UN.

PwC's *Africa Power and Utilities Sector Survey* forecasts that installed capacity will rise to around 380GW by 2040, but this is insufficient to meet demand and would leave around 530mn rural dwellers without power.

Even with determined efforts, closing Africa's energy gap is a huge challenge, for as recent research by McKinsey shows, it takes an average of 25 years to get from 20 per cent electrification rates to 90 per cent.

Why gas is an option

Adoption of gas power is a realistic strategy for Africa's governments and investors. According to the IEA, Africa has lots of gas – in 2011 KPMG reported that Africa had proven natural gas reserves of 14.53tn cubic metres (tcm), a figure that constitutes 6.97 per cent of the world's known supply and is equivalent to 71.7 years of current production. At least 15 African states enjoy significant gas resources and many more are undiscovered. Also, much gas is wasted by flaring. Indeed, according to the World Bank, the amount of gas flared in Africa each year is enough to power the whole continent. Gas power is also economical and greener than either diesel or coal. For example, one year's cost of diesel fuel for a 100MW power plant amounts to the cost of building an entire gas power plant of the same size. In addition, the technology is well proven, easily scalable, efficient, and above all, enjoys a short construction period of around 30 months, notes nicnewmanoxford.com, January 2016. Lastly, gas is more versatile than renewable energy providing base- load, peak and stand-by power. Therefore, it is surprising that there are only around 92 gas power plants in Africa. However, recognition of the availability and advantages of gas has come of age. In October, South Africa announced a tender process for 3000MW of liquid natural gas- to- power Independent Power Producer plants. These will be shared between Coega (1000MW) and Richards Bay (2000 MW), with the potential to import more capacity from Mozambique in the coming decade.

Eskom, which supplies electricity to the Ankerlig station (pictured), is claimed to be interested in a tender for the new Coega and Richards Bay LNG IPPP plants (Source: Eskom)

Following a November request for pre-qualification process, submissions for proposals are planned for February. In April, the prequalification bidders will be shortlisted, with four or five consortiums likely for each location. Subsequently, there will be discussions between parties before request for proposals are invited in August 2018. It is likely the priced bid will not be announced until early 2018, due to delays caused by the Christmas and New Year holidays in South Africa.

"Already, potential interested parties include Exxon, Royal Dutch Shell, Siemens, Sasol and Chevron, and state agencies such as the national oil company PetroSA, state-owned grid operator Eskom and national port, rail and pipeline agency Transnet," Nico Bezuidenhout, director of ORBIT Energy Solutions, tells *African Review*.

Table 1

	2010	2040
Nuclear	14	14
Gas	28	710
Coal	225	371
Imported Fuels	85	104
Hydro	92	256
Geothermal	1	28
Wind	0	6
Solar	0	127
Total Twhours	444	1616

Source: Mckinsey, Powering Africa 2015

The rise of gas power

McKinsey research predicts that if every country in sub-Saharan Africa built enough capacity to meet its own needs, gas generation would rise from under 10 per cent of capacity to nearly 50 per cent by 2040, or around 710TWh, joining coal as the dominant source of power in the region (*Table 1*). This is estimated to cost around US$490bn for new generating capacity, plus another US$345bn for transmission and distribution.

Challenges

Perhaps the biggest barrier to foreign and private domestic investment in power generation in Africa is the inability to recover the cost of new generation under current electricity tariffs. Without the prospect of cost-reflective tariffs, market liberalisation reforms, availability of 'bankable' power purchase agreements, and sufficient safeguards for foreign investors from robust laws, regulations and independent regulators, it is questionable whether sub-Saharan Africa will attract the foreign capital it needs to close the energy gap. ■

Nicholas Newman

Industry gears up for Nigeria Power Forum

Africa's largest energy gathering returns to the Abuja International Conference Centre (ICC) next month, 27 February-2 March.

The Nigeria Power Forum draws together prominent stakeholders from Nigeria's power sector, providing a platform to assess the current barriers to electricity provision across the nation.

"Power remains the principal catalyst for transforming Nigeria's industrial and commercial landscape, releasing the potential across sectors and strengthening the economy," commented the organiser of The CWC Group.

"Over the last three years the Nigeria Power Forum has provided a platform for the entire industry value chain to discuss solutions to the barriers that remain in creating access to electricity across the nation."

The lineup of speakers this year includes: HE Babatunde Fashola, minister of Power, Works & Housing, Federal Republic of Nigeria; HE Mustapha Baba Shehuri, minister of State for Power, Works & Housing, Federal Republic of Nigeria; Dr. Anthony Akah, acting chairman, NERC; Matthias Onweazuka Obiaya, chief executive officer, Association of Nigerian Electricity Distribution (ANED); Sheri Abegbenro, chief control and compliance officer, Eko Disco; Yesufu Alonge, head power of procurement and power contract management, NBET; Francis Agoha, chief operating officer, Transcorp Power Limited; and Edu Okeke, chief operating officer, Azura Power Holding.

A key focus of the forum will be on government strategy and measures to enable growth in the power sector.

Accompanying this will be an analysis of solutions to the financial challenges facing the industry, a gas market outlook, how the entire value chain can work to ease revenue collection, and the policy and regulatory obstacles faced by all stakeholders. The forum will also ask what Nigeria's energy mix will look like in the medium to long term. "Local and regional power players will meet with international investors for what promises to be a fruitful forum full of thought provoking discussions and unrivalled networking opportunities," added the organiser. ■

The Nigeria Power Forum 2017 takes place at the Abuja ICC, Nigeria, 27 February - 2 March (Source: The CWC Group)

Powering on or powering out?

FG Wilson describes why it is important to think about lifetime ownership when you buy a generator set

Generator sets are a regular sight across Africa and likely to remain that way for a long time to come. Of course, buying a generator set is one thing, but making sure it has a long and productive life with good running costs is another. How long is that life? FG Wilson carried out field research of owners of all generator set brands globally and found that an average generator set has a life of about 10 years. Steve Lorimer, aftermarket manager at FG Wilson, says consideration of lifetime costs is very often swept away in the buying process.

"When you're buying, it's usually because you've lost power. You're fed up, annoyed. It's a problem you don't want and a reluctant purchase. It's like buying insurance. The big temptation is to go for the cheapest."

Sometimes that makes sense, if power outages are rare and the generator set is going to be used infrequently. But when it's going to be relied upon and used more regularly, lifetime cost and efficiency really need to be weighed up.

That's not always easy to do and Lorimer helps put it into perspective.

"Local, effective support is very important. Our experience shows that over a 10 year product lifetime, being able to resolve an issue with one less visit to site can save you an average of US$6,000 for every generator set. That means local dealers who carry parts are trained to diagnose issues correctly first time. We put a big priority on this and support our dealers with a parts facility carrying 11,500 parts lines, taking 500 orders a day and shipping three million parts a year to dealers who know our products just as well as we do. We also test and validate all our parts and offer a warranty. That's important: it's tempting to buy cheaper 'will-fit' parts and while they may solve an immediate problem, you won't get the same level of performance or lifetime and longer term, they will cost you more money."

Longevity and performance of engines in generator sets are an important consideration and can lead to big fuel savings in the future, says FG Wilson (Source: FG Wilson)

There are many reasons why generator sets fail, Lorimer explains.

"It's easy to focus on the engine and think that if engine parts are easy to obtain, this will cover most support needs. But our experience and external research indicate that only one in four problems occur in the engine. That leaves much scope for other issues. Often they are electrical and we see a lot of people attempting DIY wiring inside control panels which leads to further problems and can be dangerous. When you're buying a generator set, it's really important to think about whether your supplier can support every aspect of it through its lifetime. If they can't, you may end up spending a lot of time hunting down people who can, and when you find them, how do you know they are trained to fix the problem properly?"

That's not to downplay the importance of the engine in a generator set because engine life and performance are a very important consideration. Lorimer calculates that an engine life of 20,000 hours versus one of 4,000 hours is worth US$6,000, so yes, it really is worth buying a generator set with the best and most modern engine which is within your budget. That can also translate into big fuel savings if you're running your generator set regularly. Lorimer says,

> "It really is worth buying a generator set with the most modern engine which is within your budget"
>
> **STEVE LORIMER, AFTERMARKET MANAGER, FG WILSON**

"FG Wilson generator sets run with the most modern and fuel-efficient engines available. We calculate that running at 75 per cent load for 2,000 hours per year, the lower fuel consumption can save you up to US$21,000 per unit over 10 years versus a typical 'low cost' engine based on an old design. So yes, while a generator set with a more modern engine has a higher upfront price, over time, it will pay for itself, not only in terms of durability but also in terms of fuel usage if you're going to use it regularly."

Lorimer gives one final piece of advice which is interesting, but maybe not surprising. "About a quarter of all reasons why generator sets fail is simply because the battery has run flat, the unit has run out of fuel, or had poor quality fuel pumped into the tank. A low-cost battery charger and just keeping an eye on the fuel or oil situation can make these problems go away.

To find out more about FG Wilson service and support, visit www.fgwilson.com/support ■

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Diesel genset sales to grow after a tough year

Africa's import of diesel generator sets dropped by 30 per cent for the first three quarters of 2016 compared to the same period in 2015, according to research from PowerGen Statistics

The import market for diesel gensets appeared to suffer last year, but future market prospects remain promising (Shutterstock Mehmet Dilsiz)

Imports of diesel generator sets waned by one third in the first three quarters of 2016, research for *African Review* on behalf of PowerGen Statistics, a market leading database dedicated to the diesel power generation sector, has revealed.

The report states the decline (see Chart 1) branches across all power brands (0-75kVA, 75-375kVA and more than 375kVA).

On a market level, the three greatest importers – Algeria, Egypt and Nigeria – witnessed strong declines compared to 2015.

"The most dramatic decline has been in Nigeria – historically it is the largest market in the continent but seems to be struggling to maintain its normal levels," said a PowerGen Statistics spokesperson.

The firm maintains that the decline is not linked to slowing demand, but rather "to an alignment of multiple negative factors, mainly currency and oil price declines".

Italy jumped into the top three exporters with a decline in volume of a mere 7 per cent, taking the place of France, which recorded a drop of more than 40 per cent in the first three quarters of 2016.

"China and UK exports to Africa have seen the strongest declines but still maintain their leadership in the continent," said the spokesperson.

And import levels are expected to maintain across the continent next year if the international economic situation remains the same.

"A positive note is the possible appreciation of the oil price that could have a fast and strong impact on the Nigerian oil-producing markets," added the spokesperson.

> "Nigeria is historically the largest market in the continent but seems to be struggling to maintain its normal levels"
>
> **POWERGEN STATISTICS**

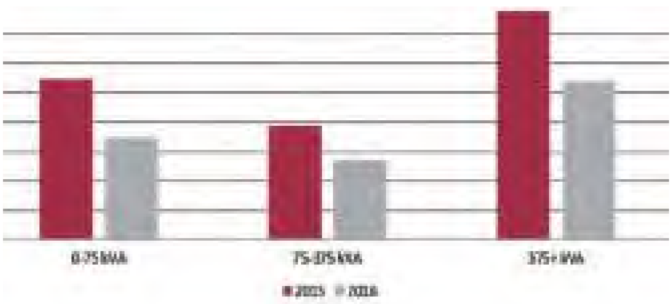

Chart 1. Africa Q3 genset import declines, 2015 vs 2016 (Source: PowerGen Statistics)

Market outlook

However, a closer look at the longer-term growth prospects for diesel gensets in Africa paints a promising picture.

According to a report from TechSci Research, the market for diesel gensets in Africa is predicted to grow at a CAGR of more than 12 per cent during 2016-2021. Powering this growth is a demand for primary, as well as standby, power sources, especially in oil and gas exploration sites, industrial infrastructure and mining activities. Accordingly, the industrial sector was the largest purchaser of diesel gensets, followed by commercial and residential sectors, TechSci Research notes in its report synopsis: "Africa Diesel Gensets Market by Type, By End User, By Country, Competition Forecast and Opportunities, 2011-2021".

Against more specific sector growth is a wider demand for safe and reliable electricity. At present, access to grid infrastructure on the continent is poor, with power outages an enduring problem.

"The deploment of diesel gensets can effectively reduce the demand supply gap of electricity, and is capable of suppling regular as well as reliable electricity," the synopsis notes.

"According to the World Bank, Africa's population is projected to increase from 1.2bn in 2016 to 2.8bn by 2060. Backed by increasing population, Africa's diesel gensets market is expected to grow at a healthy rate over the next five years." ■

John Deere Power Systems to showcase innovations at MEE 2017


The company is exhibiting at booth S2, C30.

John Deere Power Systems (JDPS) will unveil the very first engine of its new generator drive range aimed at non-emissions regulated markets at the Middle East Electricity 2017 show in Dubai, 14 -16 February.

The product to be launched covers the key 200kVA prime node, says the company.

"Our OEMs and customers are asking for more cost-effective diesel engine solutions for power generation but won't compromise on the quality, reliability or performance," said Arnaud Blanchard, market and product planner for Europe, Middle East and Africa.

As a result, JDPS is developing a new range of products for the power generation segment, optimising key 30 to 250KvA nodes, which are all made in France.

"This new engine lineup was developed based on market research and will demonstrate our commitment to meeting the increasing expectations of our OEMs (original equipment manufacturers) and end-users," Blanchard continued.

As an entirely independent engine manufacturer of diesel driven power generation engines, JDPS offers OEMs unbiased engine expertise and a complete range of products from 30 to 630kVA that meets most worldwide emissions regulations - from non-regulated engines to EU Stage IIIA and EPA Final Tier 4.

John Deere provides customer support via more than 4,000 service locations worldwide.

Founded in 1837, John Deere remains dedicated to providing products and services to farmers, ranchers, landowners and builders.

John Deere Power Systems manufacturers and markets 30kW to 448kW (40 hp to 600 hp) industrial diesel engines and 56kW to 559kW (75hp to 750hp) marine diesel engines, as well as drive train components for use in a variety of off-highway applications. ■

Resilient urban infrastructure for a damaged city

Burundi, one of the world's poorest, with a population of about 10.6mn is undertaking a big economic transition

Economic reforms are ongoing in Burundi. (Source:

This economic transformation is remarkable because it's happening inside a densely populated and small landlocked country. The national economy is dominated by subsistence agriculture, where 90 per cent of all citizens work. (For more on Burundi's economy see graphs on page 46). Armed conflict lasting more than a decade has devastated much of the country's physical, social and human capital. Despite this, substantial improvements are being made, thanks to a relatively well-performing demobilization programme. The Army retreated back to barracks; roadblocks and checkpoints were dismantled; night curfews lifted. The army is now seen as a stabilizer. Economic reforms are ongoing; institution building is underway.

Burundi is enjoying its first decade of moderate economic growth. But poverty remains widespread. Inequalities -- between the capital, Bujumbura, and the rest of the country -- remain high. But these are decreasing, despite rapid economic growth in urban areas. From 2005 to 2015, Burundi's ranking on UNDP's 'Human Development Index' increased by 2.5 per cent p.a. This happened as education and health outcomes significantly improved over that same period. The road will be a long one: in 2015 the country still ranked at 184th out of 187 countries.

Development programmes have shifted focus onto modernizing public finance, strengthening basic social services, and upgrading economic infrastructure and institutions.

The country's path upward was interrupted when death and destruction, wrought by torrential rains in 2014, killed dozens, destroyed 3,500 homes, leaving 15,000 homeless. "Most victims had built their homes in the beds of major water courses, whereas construction is forbidden in these locations," said Univ. of Bujumbura Prof. Bernard Sindayihebura. Construction in the city is haphazard and had not followed any regulations.

Bujumbura's deputy mayor, Remy Barampama, argues that drains were badly designed, in some places acting as funnels which were "incapable of coping with all the water from the mountains and households of the city".

International assistance has flowed since the 2014 disaster, most notably from the World Bank. Burundi is using an initial US$25mn of World Bank funds to implement an unusual "Infrastructure Resilience Emergency Project". The national government says that the goal is to "enhance the climate resilience of key transport and drainage infrastructure in Greater Bujumbura, while strengthening the country's capacity to manage and prevent natural disasters".

> "Burundi is using an initial US$25mn of World Bank funds to implement an unusual Infrastructure Resilience Emergency Project"

According to Steve Shalita, World Bank Africa region's manager for communications and partnerships, "the Burundi Emergency Infrastructure Rehabilitation Project became effective only on 17 August 2016. The Government of Burundi is currently in the process of procuring contractors to start civil works and implement the project components. This is normal for a project that has been operational for under three months".

According to one Burundian source (on 24 November 2016) who works inside the World Bank, "the take off of the project was delayed due to the political challenges on the ground, and the project only became effective three months ago".

The project has three main components:

- rehabilitate roads and urban infrastructure, esp. those which are deteriorated and flood-affected;
- capacity strengthening in disaster risk management;
- institutional support, project management and coordination,


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which pays for consultancy services and technical advisory services such as technical studies and assessments, training, media information, financial audits. This third component is also expected to finance project management and coordination costs, including the Project Management Unit's operating costs.

The first component has two key elements:

- Transport Infrastructure Rehabilitation (estimated cost: US$12.6mn). The works to be financed under this component would consist in reconstructing and/or rehabilitating approximately 30 km of the NR-1 and related structures, including, inter alia, installation of slope protection measures, stabilization of embankments, rehabilitation of drainage systems, and redirection of groundwater.
- Urban Infrastructure Rehabilitation (estimated cost: US$9mn)

Strengthening of river channels and embankments. This entails strengthening of Nyabagere and Kinyankonge river channels for a length of about 7.5 km; building of a channel between the two parts of Camara neighborhood (serviced and non-serviced areas); re-sizing of water outlet to allow better water flow from the new main channel along NR9; building of a channel from Gasenyi River; the waste water treatment plant at the junction of the Nyabagere and Kinyankonge rivers.

Burundi's road transport carries about 90 per cent of all goods, due to the absence of a railway network and increasingly unreliable Inland Water Transport on Lake

Burundis Macroeconomic indicators

	2014	2015(e)	2016(p)	2017(p)
Real GDP growth	5.0	4.8	5.0	5.9
Real GDP per capita growth	2.1	1.8	2.1	3.0
CPI inflation	-0.3	0.8	2.0	1.9
Budget balance % GDP	-1.8	-2.5	-3.1	-3.7
Current account % GDP	-6.1	-4.5	-5.3	-6.9

Source: African Economic Outlook 2016 - Data from domestic authorities; estimates (e) and projections (p) based on authors' calculations.

African Countries by level of human development

Region	Low human development (less than 0.550)		Medium human development (0.550-0.699)		High human development (0.700-0.799)	
Central	Cameroon Central African Republic Chad	Congo (Democratic Republic of the) Madagascar	Congo Equatorial Guinea Gabon			
East	Burundi Comoros Djibouti Eritrea Ethiopia Kenya	Rwanda South Sudan Sudan Tanzania Uganda			Seychelles	
North	Mauritania		Egypt Morocco		Algeria Libya	Tunisia
Southern	Angola Lesotho Malawi	Mozambique Swaziland Zimbabwe	Botswana Namibia Sao Tome and Principe	South Africa Zambia	Mauritius	
West	Benin Burkina Faso Côte d'Ivoire Gambia Guinea Guinea-Bissau Liberia	Mali Niger Nigeria Senegal Sierra Leone Togo	Cabo Verde Ghana			

Source: African Economic Outlook 2016 - United Nations Development Programme (2015a).

associated with these roads is the long leads (more than 1000 km) from primary international gateway ports such as Dar-es-Salaam and Mombasa. Road transport is directly impacted by Non-Tariff Barriers imposed by transit countries; poor logistics and efficiencies; burdensome cross-border, customs and administrative procedures. The high costs of infrastructure development, coupled with equally high transport costs, are major constraints to agricultural economy like Burundi's.

The road network of Burundi comprises about 12,300 km of roads. Approximately 4,800 km are part of the "classified" road network managed by the Ministry of Transport, Public Works and Equipment (MTPWE) and by the National Road Agency (NRA), while the remaining 7,500 km are part of the "non-classified" road network managed by local communities. The greater part of the network was developed between 1960 and 1990, and is mostly in poor condition. Key parts of this poorly maintained road infrastructure network were damaged by the floods of 2014.

Technical oversight and general supervision is provided by an Inter-Ministerial Technical Steering Committee (TSC) located in the Ministry of Transport, Public Works and Equipment (MTPWE). Implementation of individual two Implementing Agencies (IAs) that are already operational under World Bank funded projects: the NRA and the Burundi Agency for Public Works (BAPW, or Agence Burundaise pour la Réalisation des Travaux d'Intérêt Public).

The TSC chaired by the minister of MTPWE has been established. The TSC includes representatives of the Ministry of Water, Environment and Urban and Regional Planning, which has oversight over the BAPW, and from the Ministry of Public Security, mandated with the prevention and coordination of Disaster Risk Management activities. It also includes representatives of key stakeholders. The TSC provides strategic direction and overall supervision for the project, approves the Annual Work Programmes and budgets, and ensures adequate coordination with line Ministries and alignment with sector strategies. ■

> "Burundi's road transport carries about 90 per cent of all goods, due to the absence of a railway network and increasingly unreliable Inland Water Transport on Lake Tanganyika"

Plugging Zambia's housing shortage

Zambia has a shortage of three million residential housing units and the country's population is set to increase to an estimated 23mn by 2030, up from around 15mn at the end of 2016

Low-cost houses for teachers at a boarding school under construction in Nsama District (Source: Humphrey Nkonde)

Shortly before northern Rhodesia, now Zambia, became politically independent from the UK on 24 October 1964, there were several low-cost housing projects that were targeted at Africans. Most of those houses located along the railway line running from Livingstone near Zimbabwe to Chililabombwe in Zambia's Copperbelt province on the border with the DR Congo were constructed by Richard Costain, a British company.

Richard Costain's housing projects gave rise to African townships such as Chilenje in the capital Lusaka and Chifubu in Ndola on the Copperbelt. Other low-cost houses were constructed by first President Kenneth Kaunda's United National Independence Party (UNIP) government between 1964 and 1991.

In 1996, second President Frederick Chiluba's Movement for Multi-party Democracy (MMD) government, which ousted Kaunda's government in 1991, sold government and council houses to sitting tenants. Financial proceeds from those houses were not put in revolving funds. As a result, only a few houses were constructed by the MMD government under the leaderships of Chiluba and third President Levy Mwanawasa.

Moreoever, the principal developer of houses, the state-run National Housing Authority (NHA), has not been adequately funded for several years *African Review* reliably understands.

President Edgar Lungu's Patriotic Front (PF) government has embarked on housing projects to reverse the trend. It has sanctioned construction of 2,000 houses for the Zambia Police Service and other security wings. The Ministry of Home Affairs, under which security wings fall, has an estimated shortage of 12,000 housing units.

> "China is deeply involved in housing projects in Zambia by way of loan financing and private sector participation"

China is deeply involved in housing projects in Zambia by way of loan financing and private sector participation. President Lungu's cabinet in December 2015 approved a US$295mn loan from China's Industrial and Commercial Bank for designs and construction of 2,000 low-cost houses for security wings.

The total cost of the housing project is US$320mn and the

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Jiangxi Construction Engineering Group at the site of a boarding school, which will have 27 houses for teachers in Nsama District (Source: Humphrey Nkonde)

contract has been awarded to China's Avic International. Of the 2,000 housing units, 454 are for police officers, 117 for immigration officers, 677 for prison officers and 102 for immigration offices. President Lungu launched construction of 48 houses in October 2015, two months before the loan from China was approved.

Apart from loan financing, China's private sector is involved in housing projects in Zambia. For instance, the Ndola City Council has partnered with the Henan Guoji Industry Group to erect 1,700 low, medium and high-cost houses at an estimated cost of US$2mn. According to the council's public relations manager Roy Kuseka, the council has already secured a piece of land in Dola Hill along the Ndola-Mufulira Road on which the houses would be constructed.

"Our role as a council is to provide land," Kuseka says in an interview with *African Review.*

"This housing project, in which Henan Guoji Industry Group will provide capital, is meant to empower the people as they would be allowed to buy the houses."

Kuseka explains that the project has been designed in such a way that beneficiaries would be allowed to pay for the houses in installments as they are being constructed. He says payments for houses are expected to be completed just before construction is concluded.

The ruling PF government has created further prospects for house building in Zambia in new districts, mostly in rural areas. The PF has a decentralisation policy in which it intends to take development to the grassroots.

One model being used in rural areas to build houses involves the provision of social infrastructure such as schools and health facilities. A typical example is the construction of the first boarding secondary school for Nsama, a new district created in 2011 and previously part of Kaputa district with no modern infrastructure at the time.

The school is being constructed by Jiangx Construction Engineering Group, a Chinese company, at a cost of US US$4.3mn.

It will have 27 modern houses for teachers. Most of the teachers working in Nsama are housed in grass-thatched huts. In spite of the houses being built for public service workers, there is room for the private sector to construct units with the growing middle class in need of good quality accommodation. Lawrence Chilonge, an employee in Nsama District Council's works committee, says there is room for private developers to construct houses in the district.

"We have abundant land on which the houses can be constructed. We need houses because our district has a huge shortage," he says.

Another aspect in Zambia that has led to a shortage of residential houses is the extension of mining activities from the Copperbelt to the fast-growing north western Province on the border with Angola and Democratic Republic of the Congo. Major copper mining company Kansanshi Mining, a subsidiary of First Quantum Minerals, has built some houses with workers making payments from their salaries.

The company has just embarked on a US$350mn housing project named Kipemba Housing Complex, some 12km west of Solwezi, headquarters of North-Western Province of Zambia.

Since the deficit of housing units in Zambia still remains huge, private sector involvement, especially from developed countries, will be required to participate in reducing the shortage of Zambia's three million housing units.

They can use loan financing and direct participation in the housing sector, the way it being done by China.

The loan financing model can be targeted at public service workers such as teachers, nurses and others who are currently being paid housing allowances.

When the housing units are constructed in various districts, those benefiting would forfeit the allowances. Government can use savings from forfeited housing allowances to service loans from several other players other than China or rely on direct private sector participation.

That is the only surefire way that Zambia can reduce its shortage of three million housing units. ■

Humphrey Nkonde

KPF builds world's fastest skyscraper lift in China

Visitors to China's sprawling port city of Guangzhou, the capital of Guangdong Province, are able to marvel at a new skyline feature as construction work on China's second highest building completed last year, which features the world's tallest skyscraper lift. US firm Kohn Pedersen Fox Associates' (KPF) 530 metre-high CTF Finance Centre, located in Guangzhou's Zhujiang New Town, is the city's tallest, and the second of two towers overlooking the Pearl River – registering 100 metres lower than China's 632 metre-high Shanghai Tower, situated in Pudong, Shanghai.

China's continued duel with the Middle East to claim top spot in the highest skyscraper stakes is an enduring plotline for any construction enthusiast. The Guangzhou CTF Finance Centre registers fifth in the Council of Tall Buildings and Urban Habitat (CTBUH) rankings, eclipsed only by the likes of Dubai's Burj Khalifa (828m) the Makkah Royal Clock Tower in Mecca (601m), the One World Trade Center in New York (541.1m), and Shanghai's aforementioned tower (632m).

Developer the New World Development Company has created an 111-storey mixed-use tower that includes a conference facility, office space, hotel, shopping centre and viewing deck offering a panoramic take on Guanghzou's metropolis while transport interchanges are positioned below the building.

THE CTF Finance Centre in Guangzhou is China's second tallest building (Source: Shanghai Liyu Steel)

Shanghai Liyu Steel provided technical support for the steel fabrication component of the project in what was an ambitious assignment. To achieve the desired height, a square core and eight concrete columns provided the primary structural support for the building, while four levels of steel outriggers and six sets of double-layer belt trusses added lateral stability, the company outlines on its website.

Speaking to African Review about the project, a Shanghai Liyu spokesperson says, "Shanghai Liyu Steel has provided technical support for steel structure fabrication at Shanghai Tower and Shanghai World Financial Center, but the CTF Finance Center is different.

"Firstly, CTF Finance Center is located in the Pearl River Delta, which is one of the most prosperous parts in China and attracts a great deal of attention.

Secondly, the technical characteristics of this project are also different from that of former projects because this is a mixed-use tower. This represents a great opportunity to improve our standing in the the steel structure industry, and it is also a challenge for us to undertake such a special project."

The spokesperson adds that the fabrication characteristics and materials of the project were also different to previous assignments.

"This project combines white terracotta and a modern architectural style, besides providing many environmental benefits such as offering shade from the sun, reducing energy needs and corrosion resistance. High-rise buildings in China are entering a new stage, one that cares about both function and design." ■

SDLG wheel loaders get rubber stamp from GREL

Ghana Rubber Estates Limited (GREL) has grown from operating 923 hectares of rubber plantations in 1957 to some 23,000 hectares today. Production at the company's Takoradi factory now tops 40,000 tonnes per annum, of which 99 per cent is used for the manufacture of vehicle tyres.

Managing director Lionel Barre says: "Despite the rubber price now being about a fifth of what it was in 2011 we have ambitious plans going forwards. We are looking to increase production to 50,000 tonnes in 2017 and will also be investing some 11 million euros in a second factory here on our existing 16 hectare site to take that figure to above 80,000 tonnes in the future."

In part, growth in production over the past 12 months has been facilitated by the company's investment in two 10.7 tonne SDLG LG936L wheel loaders. Maintenance manager for the factory and plant, William says: "The first machine has already done 9,373 hours, while the second, which was only delivered in July this year, has already passed 1,700 hours without a single breakdown. This level of reliability allied to the consistent performance 24 hours per day has definitely helped us reach our higher productivity targets."

The two SDLG wheel loaders boast two forward gears capable of propelling them to 38km/hour

This LG936L equipped with a standard 1.8 m^3 bucket has done over 9,300 machine hours in this two shift operation 6 days a week.

and are being used to manage stockpiles and load hoppers with the latex tapped from both GREL's own plantations and that supplied by out growers. While rubber is obviously a lightweight material, the work cycle of the wheel loaders involves separating out manageable lumps from the stockpiles, which places considerable demands on the hydraulics. "It is not simply a matter of driving into a stockpile and taking a bucket of material," says industrial project manager, Elliott Ledru.

"The loader operator has to break apart the latex pieces, which involves several bucket movements, before a load fit for the hopper can be taken," he explains. "With proper greasing and regular servicing the two SDLG machines are performing in a manner that ideally suits our activity and at a level that somewhat contradicts the purchase price point. With SDLG I would say we have simple but good machines that provide excellent value for money."

> "The two SDLG machines are performing in a manner that ideally suits our activity. With SDLG I would say we have simple but good machines that provide excellent value for money.
>
> **ELLIOTT LEDRU, INDUSTRIAL PROJECT MANAGER, GREL**

Like SDLG (see box story), GREL takes its corporate social responsibility very seriously. "We have some 3,500 employees, so I would estimate approximately 50,000 people are reliant upon us," says Lionel. "Part of our investment programme incorporates building a village, a school and a hospital for those families that live in and depend on our rubber plantations." Additionally, GREL recycles 100 per cent of the water it uses in production to minimise its environmental impact. "We are certified by Michelin both in terms of CSR and our environmental position," adds Lionel. "I believe the fuel efficiency and productivity of the SDLG wheel loaders lends itself to maintaining these certifications."

GHANA'S KOFI AMIGOSTEN AMOAH BUILDS ON AFRICAN SUCCESS

Kofi Amigosten Amoah shows off the new Centre of Knowledge funded by SDLG

Voted the Most Reliable Person in Africa in February of this year in a globally supported competition run by SDLG – China's leading manufacturer of construction equipment – Kofi Amigosten Amoah of Ghana has continued his journey towards building a better society through the opening, this week, of a new 'Centre of Knowledge' in Adjei Kojo in the Tema West Municipality, to the East of the capital Accra.

The new centre was funded and constructed by SDLG and its dealer in Ghana, SMT. SDLG marketing communications manager for sales region EMEA (Europe – Middle East – Africa) Magnus Rieger says: "In recognition of Kofi's Most Reliable Person in Africa award earlier this year, SMT and ourselves made our expertise, our machines and funding available to Kofi for a project of his choosing. He suggested this Centre of Knowledge and it has been our pleasure to support him and turn his hope into reality."

In just a matter of months following his award, a 2,500 square metre site was found, cleared and levelled in preparation for construction of the centre. "The SDLG loader was so impressive and fast!" says Kofi. "It prepared the whole site in no time and was quite a talking point within the community as we have never had such a machine in our midst."

Once the ground was prepared SMT Ghana transported in a specially converted high cube 40 foot long ISO container with entrance doors, electrical connections, book shelves and desks already installed. A secondary roof was then constructed over this to keep the facility cool.

Speaking at the inauguration ceremony attended by over 100 people including local school children, Chief of the Adjei Kojo Traditional Council, Mr Niiadjetey Adjei and a delegation from the Swedish headquarters of sales region EMEA, Kofi said: "I am so happy to have my community and my friends from SDLG and SMT here on this special day. This Centre of Knowledge is remarkable and will help so much with the development of our children. For the next generation it really does now start here!"

The new centre is a first for the Adjei Kojo community, a community that has grown massively in recent years and now totals some 20,000 people, 8,000 of which are children.

"This is my community," said Kofi. "I am known all over Ghana for the work I do in terms of road safety awareness, social development and supporting children who face disability or suffer extreme poverty, but my On the Road with Amigos charity has perhaps seen me miss what's right under my nose! My local community has its own needs and it struck me one night after I won the SDLG Most Reliable Person in Africa competition that with the support and funding from SDLG and SMT Ghana I could do something meaningful and lasting for this wonderful community."

Even while the site was being prepared, word spread of Kofi's Centre of Knowledge. "News of this library has spread very fast," says Kofi. "There's a real need for centres like this throughout Ghana and I am delighted, honoured and humbled that SDLG and SMT have supported me in realising this first example. I hope it can be the blueprint for similar such centres in other communities the length and breadth of Ghana."

Africa's mining industry navigates troubled times

Down, but not defeated: African mining industry squares up to global challenges

One of the continent's strategic industries, how Africa's mining sector performs to a great extent underpins how much the region's economy grows. But with the general outlook for the industry remaining subdued at best, 2016 marked another challenging year for miners. The hope is that 2017 will be the year things start to bounce back. In South Africa, the continent's biggest economy, performance was impacted by a host of factors, including slower than expected growth, the general downswing in commodity prices plus increased pressure on operating models and regulatory uncertainty. Financing new projects is another battle, according to analysis from PricewaterhouseCoopers. "Adding to the challenge is the increased difficulty in raising capital due to a loss of confidence by investors, and capital markets being seen as a last resort," it states in its most recent SA Mine report, highlighting trends from last year. The upshot is that companies had no choice but to cut back on new developments, refocus on profitable production rather than maximum production, and reduce costs. According to PwC, while a reduction in capital expenditure is evident, it may be that we have now seen the worst. "Although there is no consensus, we have probably reached the bottom of the cycle - but may stay here for some time." The influence of external factors on Africa's mining industry remains apparent across the continent. The slowdown in growth in the world's second-largest economy, China, which is a significant importer of commodities, is again likely to have a negative impact on demand from other territories, including South Africa and indeed the rest of Africa. The IMF estimates that a one percentage point decline in China's real GDP growth would lower South Africa's growth by 0.3 percentage points after one quarter. In addition, socio economic pressures within South Africa and labour challenges have put further pressure on mines' underlying operating environment. Here, though, there are some clear advances to be reported, particularly with regard to safety. The number of miners killed in South Africa's mines fell in 2016 to a new record low of 73, from 77 in 2015 because of a government drive to improve practices, mineral resources minister Mosebenzi Zwane declared in January.

Although trade unions insist that the death toll is still too high, it marks the ninth consecutive year that fatalities have fallen in the country. The government has consistently pushed the industry to improve its safety record; during the apartheid era, hundreds of miners died in mining accidents each year. While the global backdrop for Africa's mining industry might not be especially conducive right now, it has not necessarily impacted all companies equally. PwC notes that the gold mining companies it studied on the Johannesburg Stock Exchange (JSE) enjoyed a significant increase in their market capitalisation, as investors continue to see gold as a safe haven in what remains a turbulent market. Market capitalisation of the top 10 JSE miners saw significant growth in the year through to mid 2016, it said, with AngloGold Ashanti achieving the strongest forward movement. It says the increase in the price of gold, as a result of investors seeking a safe haven in the commodity, resulted in the market capitalisation of gold companies increase by US$10.1bn since June 2015 [through to June 2016]." That trend also had a positive spin off effect for gold miners throughout the continent. It's hardly playing by a different set of rules, but while mining firms remain understandably cautious given the current climate for investment, gold producers do seem more bullish. Mali's gold production edged up to 50.9 tonnes of gold in 2016, up from 50.5 tonnes produced in 2015, the mines ministry said in early January, with more set to come. The West African country is the third largest producer of gold on the continent after South Africa and Ghana. Last year's numbers were boosted, in part, by improvements to the Syama mine, which is owned by Australia's Resolute Mining, officials said. And for 2017, the estimates seem more ambitious still. While official production targets are not available, the mining ministry has previously forecast output of 60 tonnes per year by the end of 2017, helped by output from two new mines. Recent years have been tough for all players, in Mali, South Africa, Ghana and all other states, but it seems that Africa's mining industry is now fighting back. ■

> "Mali's gold production edged up to 50.9 tonnes of gold in 2016, up from 50.5 tonnes produced in 2015

Delivering connectivity in African mining

Fast and reliable connectivity is transforming mining operations across Africa. Liquid Telecom is working with firms to provide networks that can support high-bandwidth applications in the future

The Chibuluma mine in Zambia has benefitted from improvements to its fibre network (Source: Metorex)

The mining industry must dig deep during a challenging 2017 in which falling commodity prices are expected to continue to impact profitability and sustainability. At the same time, many existing mines are maturing, forcing mining companies to look further afield in their pursuit of valuable minerals.

According to McKinsey & Company, global mining operations are 28 per cent less productive than a decade ago, as mining companies have slim-lined expansion plans and refocused on doing more with less. Despite the rich mining potential across sub-Saharan Africa, the forecast for the region's mining sector growth also remains slow, as companies face operational challenges and regulatory uncertainty.

Much hope and expectation for the sector's future therefore lies with technology and innovation, which are key to enhancing productivity, reducing risk and unlocking new efficiencies. The vision of a connected mine is slowly becoming a reality as some of the world's largest mining companies look towards emerging technologies such as cloud and Big Data to revolutionise the performance of their mining operations. As more mining companies pursue automation across their operations, greater focus is falling on connectivity. As a result, mining companies across Africa are on the lookout for higher quality network services – even to mines located in some of the remotest corners of the continent.

> "The vision of a connected mine is slowly becoming a reality"

Fibre to the mine

Metorex, an established mid-tier mining company with two mines in the DRC and one in Zambia, can be used as an example in understanding how enhanced connectivity is transforming mining operations across Africa. Its African HQ is in Johannesburg. In 2013, it completely reorganised its ICT infrastructure and functions to create a central management platform for employees to work more productively. However, following the introduction of the new platform, which received a positive reaction, it soon became clear that Metorex needed to review its connectivity. Fast and reliable links were essential between its three mines.

Metorex and Liquid Telecom restructured the network topology and calculated the most cost-effective way of connecting each site using an MPLS EP-LAN solution. MPLS is of particular importance to mining companies as it provides the required flexibility for legacy systems. In Zambia, new fibre was laid at the Chibuluma mine from Liquid Telecom's existing fibre network. The mine was connected within just one week of Liquid Telecom being appointed. Four months later, the Ruashi mine in the DRC was connected using a 5.8GHz point-to-point wireless link to cover the 4km from the existing Liquid Telecom POP at Lubumbashi International Airport – which connects to Liquid Telecom's pan-African fibre network. The Kinsenda mine in the DRC was the next to be connected, with a 5.8GHz link covering the 20km from Liquid Telecom's existing POP at Kasumbalesa. The Metorex HQ in Rosebank Johannesburg was also connected by Liquid Telecom's fibre. Meanwhile, Hong Kong was connected using the Liquid Telecom network via Fujairah in the UAE, which provides very aggressive latencies from Africa to the Far East.

Supporting tomorrow's mining technology

Liquid Telecom has provided Metorex with a fully integrated network with no third party dependencies. All five connections now receive 10Mbps, enabling Big Data transfer. The network has almost 100 per cent availability, so Metorex no longer needs a backup V-SAT service. Meanwhile, a multitude of new services have been made possible, including the creation of a new VLAN and global video conferencing over private IP and the Internet. Metorex has been able to standardise and develop its ERP system to improve the user experience, drive costs down, and introduce standard reports and financial processes. It has also achieved cost savings by centralising various tools for planning, geology, engineering, surveying and maintenance.

Metorex now has a network that can support future high-bandwidth applications which are being developed for the mining industry.

Liquid Telecom will be at Mining Indaba, stand 205, on 6-9 February 2017 in Cape Town, South Africa. ■

'Get ready to get the best tools, talent in Africa'

From healthcare to mining, Olympus has immense footfall in the continent. Now, the Japanese firm aims to create local technical expertise says regional managing director Maurice Faber

With falling metal prices and in a move to save production costs, Olympus has developed technology that can help save miners' time and money. (Source: RoDobby/Pixabay)

Olympus, leading manufacturer of optical and digital precision technology, offers innovative solutions for the mining sector, as well as state-of-the-art medical systems, digital cameras and scientific solutions. Now the Japanese company is headed to Dubai as it eyes expansion in the Middle East and Africa (MEA) market. Speaking exclusively with *African Review of Business and Technology*, Maurice Faber, regional MD for MEA, gives a sneak peak into the firm's future vision. His first words, however, were, "We are everywhere" (pointing towards the Olympus digital voice recorder in my hand).

Continuing, he says that the market for optical and industrial tools are the need of the hour as businesses – both big and small – in Africa and the Middle East look to optimise operations and Olympus provides precision tools for industries ranging from, but not limited to, healthcare, oil and gas to mining.

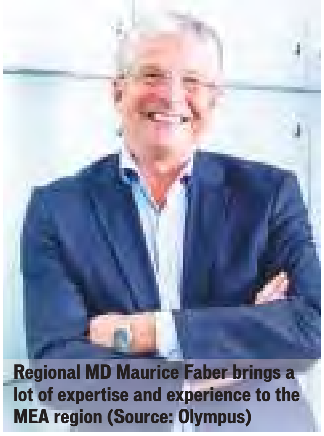
What is the status of Olympus' business with regards to mining in Africa and Middle East and which are the countries you are currently active in?

Maurice Faber: We are associated with almost all the mining companies in Africa. To name a few should include South Africa, Namibia, southern African countries, Mozambique, sub-Saharan Africa. I see a huge potential in Saudi Arabia now that they have announced US$16bn investment in mining sector. Also, Iran has a lot of mining possibilities, although it has just opened up and they are starting the market really fast. But Iran has to also invest in infrastructure because all these years of sanction have hit the country badly in terms of technology. In Africa, there is a slow but sure growth. Expansion of infrastructure is what the nations need to look into because they have a lot of resources.

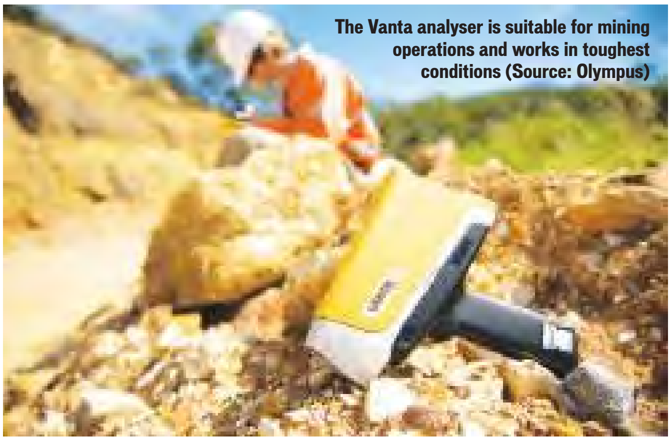
> "Olympus chose Dubai as its regional HQ because of its infrastructure, connectivity and ease to source a global pool of talent"
>
> MAURICE FABER, REGIONAL MD MEA, OLYMPUS

Have you commercially launched any new product for Africa specifically?

MF: We are soon going to launch X-ray equipment for the mining sector called Vanta. The Vanta handheld XRF analyser is designed for durability in harsh industrial environments, providing maximum uptime and a low cost of ownership. The instruments in the Vanta family



Regional MD Maurice Faber brings a lot of expertise and experience to the MEA region (Source: Olympus)



The Vanta analyser is suitable for mining operations and works in toughest conditions (Source: Olympus)

provide fast and accurate elemental analysis and quantification for a wide variety of materials in as little as one to two seconds. Combined with the new Axon technology, results are faster, more accurate and more reliable than ever. The Vanta analysers are the only handheld XRF devices that are IP 65 rated for protection against dust and water and drop tested to military standards. Their rugged design enables the analysers to work in harsh environments in applications such as positive material identification (PMI) and mining.

How is it different from whatever is commercially available in the market?

MF: It is of higher quality, has deeper penetration and better resolution. Vanta analysers give you the same accurate result every time from your first test to your hundredth test.

Are Africa operations a big part of your strategic move to Dubai?

MF: The MEA region has 72 countries and it needs a lot of focus. We cannot handle both regions from Tokyo. That will never help us understand what is going on in each market, what technology is wanted and customer requirements. What we also want to dwell in is customisation and adaptation. You cannot sell the same products in Africa like that of Japan. The customers may need something different. Mining technology, rapidly pacing forward in Africa and Middle East is not the same that goes into the deep sea.

Another aspect is training. We also have training centres in Dubai headquarters to bring and train specialists from both Middle East and Africa. This way they know what the market wants and adaptation is easier. The equipment need not be sent to Japan or Germany because experts will be sitting on your doorsteps in the region. The training centre will cater to both existing and prospective clients.

Olympus thinks long term. We are here to invest and to stay. We see a substantial growth in infrastructure in the coming years in Africa and Middle East. This is our strategy.

What specific target industries are Olympus aiming at in Africa and Middle East?

MF: The most important in terms of potential I would say are energy, oil and gas, aviation, mining and not to forget healthcare.

In terms of your training centres that you mentioned earlier, you have three training rooms, can you give an insight into it?

MF: It is unique. What we intend to do is to bring all of Olympus' equipment here and give the specialists a hands-down training by experts. Each specialist will be trained in their own field of expertise, be it oil and gas, mining, medical or industrial. We aim to provide dedicated training for the two regions and condition them to regional specifications. At our Dubai headquarters, we can train for the Nigerian, Kenyan, Saudi Arabian, South African markets, and the training will be unique, first complimentary and later at a nominal fee. That is great because we will be training in a very safe environment with high tech equipment. It is worth mentioning that this kind of training is not available in the region. To understand and learn how to maintain and manage these equipment, one needs to go to Europe, USA, or of course Japan. Imagine the technology in an endoscopy where there is a camera, fibre optic cables that go inside the human body and gets translated into data for someone sitting outside. The ability to translate all that data at that resolution is technology and it is extremely high tech. It is not something you would get off the shelf. That is one reason why quality is critical.

> In Africa, there is a slow but sure growth in the economy. Expansion of infrastructure is what the nations need to look into now"
>
> **MAURICE FABER, REGIONAL MD MEA, OLYMPUS**

Is the new training centre a part of the business strategy to bring in additional clients?

MF: We will definitely go for more distributors in the Africa and Middle East region. For now, we are happy with what we have. We have 72 countries to look at and we still have a lot of markets and countries to cover for all Olympus technology. Now we are looking to attract specialised distributers specialised in our field.

Could you name a few of Olympus' specialised products for the region?

MF: We have the Iplex videoscopes that are used for remote visual inspections. For instance, Iplex NX provides a bright, high-resolution image even in large spaces through a high-quality image sensor, bright laser diode light source, high-level image processing technology and Olympus's optical lens technology. Ideal for homeland security and mining industries, the Ipex NX has a vivid 8.4-inch touch-screen monitor delivers clear, bright images that are readable in any light.

Another technology is the PipeWizard specially designed for in-site weld-to-weld inspection in extreme environments in pipelines, onshore and offshore. Pipelines perform a critical function in the global economy, transporting huge volumes of gas, oil, water and other chemicals. Pipes are girth-welded on-site, typically using automated welding systems. For construction of pipelines, welds are the 'weak spot' as this is where defects tend to occur. With PipeWizard welds are non-destructively tested, coated, and buried or laid on the sea bed. The technology can also be used in steel structures in buildings, railway infrastructure or any other structure that has a pipeline laid.

ATR: What are you looking forward to with the new office in Dubai?

MF: We are looking for commitment as we are ready for Africa and Middle East. We are not here for the short term: we have come here to stay. The Middle East and Africa is the world's next growth area as governments implement a more focused and planned approach to infrastructure development to improve economic output and individual quality of life. ■

Influencers to attend 'revitalised' Mining Indaba 2017

Heavyweight stakeholders from the most influential mining companies, government officials and investors are set to gather at Africa Mining Indaba, 6-9 February, held at the Cape Town International Convention Centre (CTICC)

As *African Review* went to press, the number of investors registered to attend Africa's prestigious mining and investment conference was 65 per cent greater than in 2016, with the number of mining companies up by 40 per cent, the organiser said. At the time of writing, 71 countries were expected to be represented at the conference, 33 of which were drawn from Africa.

"Ministers from 24 countries have indicated that they will be attending, and we expect this number to grow," said Phillip Iofaso, director, marketing and public relations, Mining Indaba.

The event gathers more than 6,000 professionals across the industry spectrum including mining companies, governments and providers of professional services.

Keynote speakers this year include Dr. Mukhisa Kituyi, secretary general and former minister of trade and industry, UNCTAD and Republic of Kenya; and Dambisa Moyo, global economist and author.

The grandstand has been running for more than 20 years and is a crucial economic interlocutor for Cape Town and its surrounding areas, contributing at least R675mn (US$49mn) over the past 10 years into the city's leisure, hospitality and tourism sectors, and channelling billions of dollars of foreign investment into the African mining value chain.

Despite pronounced economic turbulence in the global mining and minerals markets over the past year – notably in South Africa – with increased costs, eroding margins and stagnant revenues, the market appears to be in recovery mode.

The number of mining companies registered is up by approximately 40 per cent year-on-year (Source: Mining Indaba)

"All indications based upon the conversations we are having with investors is an expectation of continued improvement in the sector," continued Iofaso.

"For Mining Indaba, another part of the resurgence effort is to ensure the quality of the attendees improves, and by quality, I mean an increase in the number of investors, miners and ministers who can come together and conduct business that results in more investment in African mining.

"I also expect to see an improvement in the type of company that provides services to the industry – the top investment banks, brokers, law firms, consultancies, insurers and equipment companies."

A comprehensive conference programme brings together stakeholders from the mining community to address opportunities, challenges and share insight on how the sector can drive investments in the industry. These include networking roundtables, country case studies, speed networking, business matchmaking, lounge meeting spaces, presentations from corporate mining firms and non-African governments, thought leadership sessions and career development opportunities.

Part of Mining Indaba's efforts will be on pinpointing emerging mining companies for investors, with approximately 16 businesses pitching their ideas to on-stage investors. Meanwhile, a partnership between the country's Chamber of Mines SA, Department of Mineral Resources and a newly formed JSS Empowerment Fund will showcase an Emerging Miners Pavillion area of the exhibition hall, representing several junior mining companies.

"Even more exciting is the Investment Battlefield," Iofaso commented.

"Here, 16 junior mining companies will present their projects to a panel of investors, the first and second place winners will share prizes worth over £15,000 –participation is free." ■

www.miningindaba.com

CONFERENCE VOICES

As expectation builds for African Mining Indaba 2017, African Review shares a selection of quotes from delegates, sponsors and speakers. All comments published kindly provided by African Mining Indaba.

"Investors take many factors into account when making investment decisions, but the situation may have been worse without country presentations and exhibitions at Mining Indaba. I come to learn from the experiences of other countries"

Richard Kofi Afenu Esq.
director
Minerals Commission of Ghana

"It is positive in 2017 to see incentives to encourage investors and miners to attend. AAMEG has been represented at Mining Indaba since our inception in late 2011 and given the significant footprint of the Australian resources sector across Africa it is imperative that we attend Mining Indaba"

Trish O'Reilly
chief executive officer
Australia-Africa Minerals & Energy (AAMEG) Group

"The new Mining Indaba format takes it back to the earlier successful formula with a focus on mining companies and investors. After many years, it will be good to return to Africa to re-assess the investment opportunities"

Joanne Warner
head of global resources
Colonial First State Global Asset Management

"Sibanye is participating in Mining Indaba for the first time. We like that the focus of the Mining Indaba is moving back towards promoting meetings with investors within the Mining Indaba venue itself and tackling issues pertinent to the industry"

James Wellsted
senior vice president, investor relations
Sibanye Gold

Edenville Energy trial mining begins

Edenville Energy has unveiled plans to roll out an integrated coal to power project in south western Tanzania. The energy firm has begun trial mining at the Rukwa Coal Project near Sumbawanga.

Edenville has generated a lot of interest from various companies for long-term coal supply. According to the firm, this has led to trial shipments of run of mine (ROM) coal being transported to customers to meet logistical, quality and quantity parameters.

The firm has now made a call to move the project to the next stage of development, which focuses on the commencement of commercial mining operations and the acquisition of a coal processing facility. Initial mining is expected to get underway in Q1 2017.

Workers at the Rukwa Coal project in Tanzania. (Source: Edenville Energy)

"I am very pleased we have been able to reach the stage where we are confident there is a long-term market for the coal from Rukwa. Our goal is to move our asset into generating positive cash flow in the near-term and to become a key supplier of coal in the East Africa region. Production will take place alongside the continued advancement of the planned coal to power project," stated Rufus Short CEO of Edenville Energy.

The three key projects at the Rukwa Coalfields are Mkomolo, Namwele and Muze. All three projects are monitored by Edenville Energy, the company noted. Namwele and Mkomolo are adjacent to each other, while Muze lies just 12 km to the East.

Edenville Energy holds a 90 per cent interest in these deposits through Primary Mining Licences ("PML") and the remaining 10 per cent has been acquired by the local partner on the project. EDL also maintains the Prospecting Licences surrounding the PML, that have been obtained from the Tanzanian Ministry of Mines and Energy. ■

Mine insurers seek balance in African risk market

The niche mining insurance sector has had a difficult few years in Africa, plagued by poor mining industry margins. This year, however, insurers are welcoming the upturn in metals and other mineral prices that could return the sector to health

Orapa Diamond Mine in Botswana (Source: De Beers)

The severe hit taken by the global mining industry over the last few years on the back of the economic downturn and the consequent sharp drop in demand for raw materials from the key Asian economies may at last be drawing to a close. Recent forecasts suggest that the sector could see significant growth in 2017, reaching an estimated value of one trillion dollars for the global industry as a whole. But the recovery will be too late to save a whole swathe of mining and resource companies, which are already divesting assets in a bid to remain liquid until the upturn. Africa's mining industry, on which so much of sub-Saharan Africa's economy depends, has been particularly badly damaged and this has had a knock on effect on the insurance sector.

Mining insurance has always been a complex and specialist area. African mine risk can be especially difficult to place in the insurance market as the risk is compounded by the fact that mining companies typically have their operations in the most challenging areas of the continent. An additional headache for insurers is that miners, led by the mining giants in South Africa, are moving towards increased automation and mechanisation. This provides an added layer of insurance risk. Superimposed over all of this, however, is the vexed question for insurers of how to deal with the problem of mandated mine rehabilitation closures. In South Africa, all mining operations are required by law to make provision for environmental rehabilitation during the life of the mine and at closure.

Historically, most mines used a prescribed Trust that is funded over the life expectancy of the mine. But the problem with this form of insurance provision is that it does not make funds immediately available for the interim closure costs, which the legislation requires. Companies such as the South African insurance house, **Guardrisk**, now provide mines with a required guarantee product – which is accepted by the Department of Minerals and Energy – at inception of the policy. Premium payments for the guarantee are said to be comparable with the payments that would be made to a Trust. If correctly structured, Guardrisk says that its product will allow the matching of the environmental rehabilitation liability against company assets over a period of time. The policy guarantees to pay out a fixed sum for rehabilitation of the mine at the end of its life.

> "African mine risk can be especially difficult to place in the insurance market as mining companies typically have their operations in the most challenging areas of the continent"

Another major problem for miners in Africa – in addition to global risks such as accidents, pit collapse, fires, floods and breakdown or failure of equipment – is that of inadequate or sporadic power supply. The heavy plant and equipment used in the mining industry typically uses vast amounts of power and constant power interruption can degrade the machinery. South Africa's **Emerald Risk Transfer** is currently the largest corporate property and affiliated engineering underwriter in South Africa and a wholly owned subsidiary of the **Santam group**. It specialises in issuing policies for plant and equipment, not just in its domestic market but also throughout the rest of Africa, Southeast Asia and the Middle East.

Other insurance providers include the **XL Group.** At the 2015 mining INDABA in Cape Town, the company unveiled a new insurance offering for the mining industry.


Victor Diamond Mine (Source: De Beers)

The product's focus includes mobile assets, machinery and equipment; mined minerals; and mine company employees. Neil Robertson, the then chief executive, Specialty Insurance at XL Group said, "Essentially this is a one-stop shop for mining industry clients. We think it's a real game changer because it's supported by an 'Insurance Wrap Cover', which is a policy element designed to eliminate gaps in cover sometimes difficult to achieve with conventional insurance placements which involve multiple policies and underwriters."

The UK based-company, the global insurance specialist **Bellwood Prestbury** is also active in Africa with clients that have large operations in gold, diamonds or tin, in remote mine sites. Meanwhile, **Veventis**, a UK specialist in political risk mining insurance has what it describes as a full programme of insurance products to help mining companies deal with risks in Africa. The products include insurance protection for the mining and metals sector, and protection against the threat of 'resource nationalism', which is becoming a growing challenge for miners.

But mine risk in Africa is not just being handled by the major western insurance houses. Increasingly, African insurers are also stepping up to the plate. In 2001, the African Trade Insurance Agency (ATI) was established by African governments and a range of other shareholders to ease the concerns of investors by providing a range of investment and political risk insurance products. Since then, it has expanded its activities throughout the continent.

The list of ATI projects now on the books include: political risk insurance at a copper mine in DRC, in partnership with the South Africa's Industrial Development Corporation, with a maximum insured sum of US$83.9mn; two further political risk insurances for a DRC copper mining project for a maximum insured sum of US$40.3mn and US$160mn; political risk insurance at a copper mine in Zambia, in partnership with Australia's Export Finance and Insurance Corporation (EFIC) for a maximum insured sum of $5.6mn. Other policies include a single obligor trade credit insurance to cover default on advance payment for the supply of copper cathodes in Zambia, with a maximum insured risk of US$22.5mn.

Now, two additional countries have joined. In October 2016, after a year-long process that was supported by the African Development Bank (AfDB), the ATI announced in Nairobi that it is now officially open for business in Ethiopia and Zimbabwe. Ethiopia is one of Africa's fastest growing economies and mining is expanding as an alternative to agriculture. Gold is Ethiopia's main mineral export. The country has a single large-scale gold mine, Lega Dembi, in the southern area of the country.

Another advanced project exists at Tulu Kapi, in the west central area of the country that is backed by the International Finance Corporation (IFC), a member of the World Bank Group. Ethiopia has reserves of platinum, copper and potash. It is also a significant producer of tantalum, producing seven per cent of the world's supply in 2007.

For Zimbabwe, whose mining sector is well established and which is one of the world's top 10 producers of gem diamonds, membership in ATI should give a boost to the country's quest to attract foreign direct investments (FDI). In both countries, ATI has a current project pipeline estimated at more than US$1bn. This is expected to double in the short-term, based on existing demand. ■

Nnamdi Anyadike

VOLVO'S EC140D EXCAVATOR DELIVERS SITE PROFITS

Volvo Construction Equipment has launched its new EC140D excavator with a powerful Tier 2-compliant D3.8F engine into the EMEA markets (excluding Turkey).

Available in five intelligent models - I (Idle), F (Fine), G (General), H (Heavy), and P (Power Max), the model combines high fuel efficiency, uptime and productivity to become "the ultimate earning machine", the company said in a statement.

Volvo's popular ECO mode, which improves fuel efficiency without jeapordising performance in a variety of operating conditions, also features for the first time in this weight class, helping to optimise digging power and swing torque. An automatic shutdown option is also available.

Designed to tackle difficult terrain, including in Africa, the durable model possesses a long, wide undercarriage and heavy counterweight to ensure excellent stability.

The Volvo EC140D can be adapted for almost any crawler excavation application and compatible with different bucket, breaker and piping options.

The EC140D's engine works in harmony with the hydraulics to deliver low fuel consumption (Source: Volvo Construction Equipment)

Inside the cab, a password protected attachment management system accessed via a monitor enables the operator to configure and store hydraulic flow settings for up to 20 different attachments.

"When it comes to getting the most out of the operator, the Volvo EC140D excavator offers among the most comfortable and productive operator environments on the market," a Volvo statement read.

"The spacious premium cab with the latest styling is equipped with an easy-to-view monitor, adjustable seat and ergonomic controls. A rear-view camera is also available as a new option."

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