www.africanreview.com

Europe €10, Ghana C1.8, Kenya Ksh200, Nigeria N330, South Africa R25, UK £7, USA $12

LOGISTICS
Our best forklift truck of the month P22

FINANCE
The emergence of homegrown pan-African banks P26

POWER
Electricity projects in full swing across Zambia P38

CONSTRUCTION
How a new mortar facility is boosting the supply chain in Cameroon P46

OCTOBER 2019

African Review

of BUSINESS and TECHNOLOGY

CRUSHING IT

P54

Building urban environments

FINNISH TECH

P18

Impact of 5G on industry

GENSET MARKET ANALYSIS

P32

Top importing countries

P24

"The reforms aim to unlock these potentials and set South Africa on a path of robust economic growth"

Dr Hippolyte Fofack, chief economist, Afreximbank

55 YEARS
SERVING BUSINESS IN AFRICA SINCE 1964

Cover picture: MB Crusher bucket in action in the development of the Djibouti International Free Trade Zone. © MB Crusher

Cover Inset: Dr Hippolyte Fofack © Afreximbank

Editor: Samantha Payne
Email: samantha.payne@alaincharles.com

Editorial and Design team: Mariam Ahmad, Prashanth AP, Fyna Ashwath Miriam Brtkova, Praveen CP, Manojkumar K, Nonalynka Nongrum Abhishek Paul, Rahul Puthenveedu, Deblina Roy and Louise Waters

Managing editor: Georgia Lewis

Contributing editor: Martin Clark

Publisher: Nick Fordham

Sales Director: Michael Ferridge

Magazine Manager: Serenella Ferraro
Tel: +44 207 834 7676 Fax: +44 207 973 0076
Email: serenella.ferraro@alaincharles.com

India — TANMAY MISHRA
Tel: +91 98800 75908
Email: tanmay.mishra@alaincharles.com

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

UAE — MURSHID MUSTAFA
Tel: +971 4 448 9260 Fax: +971 4 448 9261
Email: murshid.mustafa@alaincharles.com

UK — MICHAEL FERRIDGE
Tel: +44 20 7834 7676 Fax: +44 20 7973 0076
Email: michael.ferridge@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 0EX, 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: Srinidhi Chikkars, Nelly Mendes and Arjun S
E-mail: production@alaincharles.com

Chairman: Derek Fordham

Printed by: Buxton Press

Printed in: SEPTEMBER 2019

ISSN: 0954 6782

SUBSCRIPTIONS:

Rates for one year (11 issues):
Europe €107, Kenya KSh3400, Nigeria N6600, South Africa R460, United Kingdom £77, US$140

To subscribe: visit **www.africanreview.com/subscribe**
For any other enquiry email circulation@alaincharles.com

Editor's Note

Welcome to our special October genset analysis issue. During the first half of 2019, Nigeria, Egypt and East African markets came out as the top diesel genset markets in Africa, thanks to their growing economies. For a full report turn to page 32.

Our economist Moin Siddiqi provides a comprehensive overview of the expansion of homegrown pan-African banks filling the gap left by western banks in recent years, which have de-risked operations by leaving the continent, page 26.

Dr Hippolyte Fofack, chief economist at Afreximbank, shares his insights into South Africa's economy and his optimism that it will bounce back amid the ongoing Eskom crisis, page 24.

Automated handling systems are playing an increasing role in the South African automotive industry and the expanding arena of e-commerce, page 20.

Elsewhere in this issue, we look at major power developments in Zambia and its crucial part in the Southern African Power Pool, page 38. Crushing onsite in urban areas is becoming popular to reduce operators' haulage and capital costs, page 54.

Finally, Ghanaian business communication specialist, Miti Ampoma, shares her top 10 tips for African entrepreneurs to advance their businesses, page 58.

Samantha Payne, *Editor*

Contents

P18


P22


P38


P54

Boom lift chosen for heavy port equipment maintenance in Morocco

Genie SX-180 boom lift.

Image Credit: Marsa Maroc

Owners of an extensive lifting fleet, Marsa Maroc, has acquired a telescopic Genie SX-180 boom lift to assist with heavy port equipment maintenance in Morocco. The company is the largest operator for the Port of Casablanca.

"Gantries and heavy-capacity port cranes are some of our most strategic types of equipment that stand out by the complexity of their maintenance and their huge dimensions," said Mrs Loufti, director, equipment department, Marsa Maroc, Port of Casablanca.

"To perform certain tasks, such as inspections or verifications, particularly on the cranes' booms, it is imperative to have an adequate solution to reach to up to 50m (180ft) and above. In addition, because Marsa Maroc is QSE (Quality, Safety, Environment) certified, worksite safety has become one of our top priorities, which is why we decided to invest in a high-reach boom lift. There are few manufacturers that make these machines, and Genie stands out as one of the reputed leaders in this area. After consultation, we chose a Genie SX-180 boom lift that is currently in operation in the Port of Casablanca," she explained.

As part of its call for tender a year ago, Marsa Maroc turned to Vemat, an authorised Genie distributor in Morocco. In addition to technical details, requirements in terms of performance and safety were also part of the specifications.

"Local service was also one of the customer's requirements. Since it has been in operation, the Genie SX-180 boom lift has been working virtually non-stop and, in eight months, it has already clocked up a tremendous number of hours. Marsa Maroc's machines are in use all day long, so to adapt to their needs, we plan our service calls 10 days in advance to handle the maintenance within a morning, which allows them optimise the immobilisation of their equipment," added Vemat's managing director, Domenico Paduano.

EGYPT'S SUGAR INDUSTRY RECEIVES BOOST

Harris Pye Engineering Group UAE recently signed a contract with Canal Sugar to supply five 40tph, horizontal, three-pass, and multi-tubular smoke tube boilers to one of the largest beet sugar production facilities in the world, based in Al Minya, Egypt.

The refinery will contribute to filling the shortage in sugar production by 75 per cent, providing supplies worth US$650mn and exporting by-products worth US$120mn annually.

Mark Prendergast, CEO of Harris Pye, emphasised, "We are pleased to contribute to the prestigious Canal Sugar project. Our provisions to this major project will align with the company philosophy of ensuring the highest standards of design, service and quality. The strength of Harris Pye lies in our unparalleled ability to conceive turnkey solutions which best suit a customer's specific requirements, and we are eager to apply this to meet the needs of this major project."

TOTAL INAUGURATES 1000TH SOLAR STATION

Total has inaugurated its thousandth solarised service station.

The rooftop solar systems at the Total Palmeraie retail outlet in Marrakech, Morocco, are a milestone in the company's programme to solarise a number of its service stations worldwide.

Total's goal is to solarise 5,000 stations in 57 countries. Work will accelerate in the coming months to reach around 1,000 stations per year. More than a third of Total retail network stations worldwide will be equipped with high-efficiency SunPower solar panels.

Total is also solarising production sites, such as plants, refineries, and office buildings. A number of projects to equip various plants or office buildings with solar panels have been identified, adding up to a nominal power of more than 200MW, a peak equivalent to the electricity demand of a city of 200,000 people.

"Total service stations around the world are designed as one-stop shops offering customers tailor-made services that are easy to access and use," said Momar Nguer, president of Total Marketing and Services and member of Total's Executive Committee. "The service stations equipped with solar panels are more independent of the grid and showcase our know-how and expertise in renewable energies. The programme will reduce our retail network's carbon emissions by more than 50,000 tons per year."

"Solarising Total's service stations is fully aligned with our strategy of generating and supplying distributed renewable electricity," added Julien Pouget, senior vice president, Renewables at Total. "We're proud to inaugurate our 1000th solar-equipped retail outlet. This milestone achievement reflects Total's commitment to using solar power at our sites and our ability to support our industrial and commercial customers with cleaner, affordable and safer electricity."

BRIEFS

USA and Egypt cooperate on energy

Image Credit: Adobe Stock


USA and Egypt pledge to work closer together.

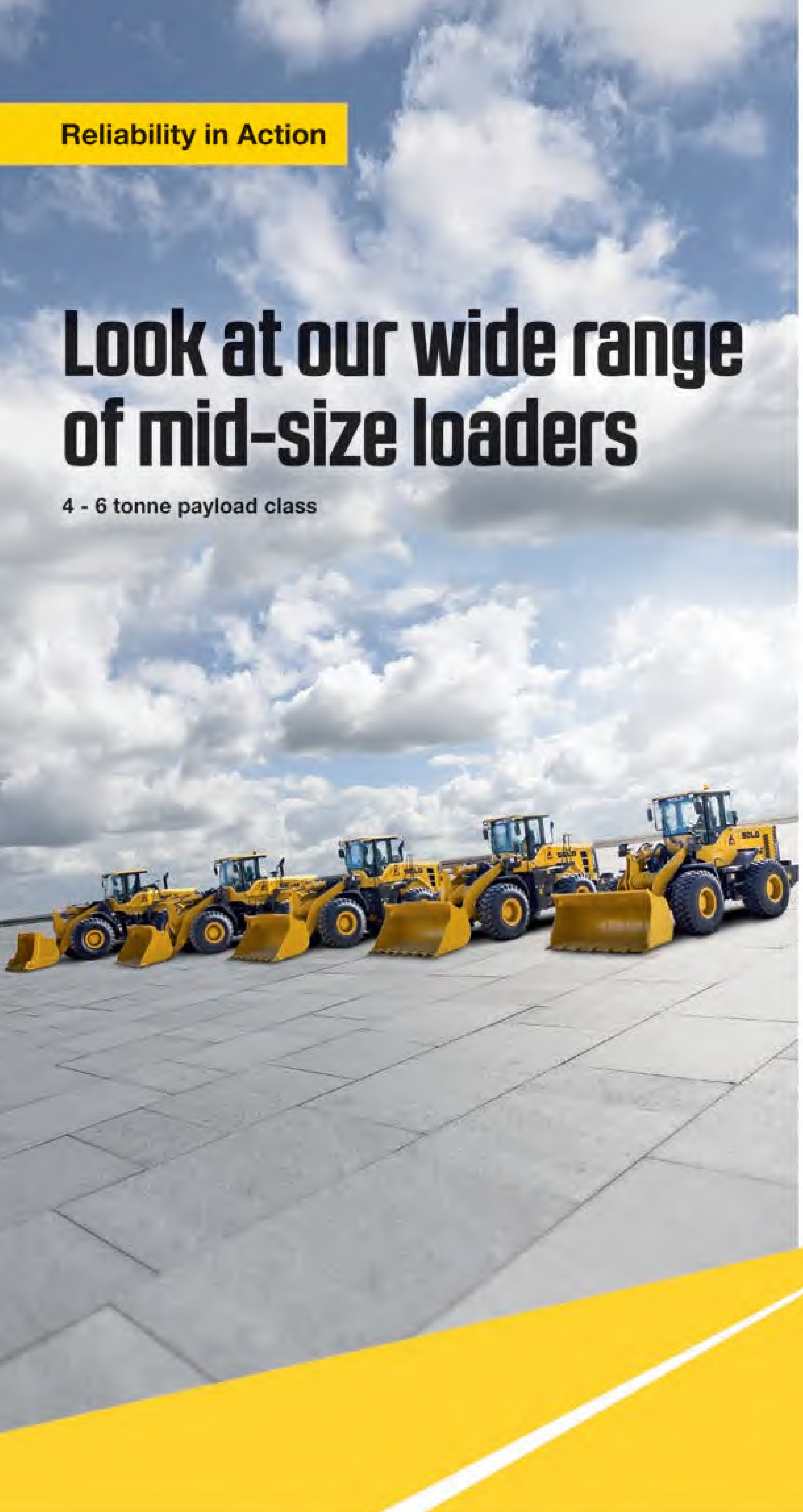
The Strategic Energy Dialogue was launched by the deputy secretary of Energy, USA, Dan Brouillette, Egyptian minister of Petroleum and Mineral Resources, Tarek El-Molla, and the Egyptian minister of Electricity and Renewable Energy, Mohamed Shaker, to facilitate closer government and private sector cooperation on energy between the United States and Egypt.
The launch of this dialogue highlighted Egypt's role as a hub for natural gas and electricity.

African development conference held in Japan

Image Credit: Adobe Stock


Algeria's PM met his Japanese counterpart to discuss development opportunities.

The Seventh Tokyo International Conference on African Development was held in Yokohama, Japan from 28-30 August.
The Algerian Prime Minister H.E. Mr. Noureddine Bedoui accompanied by the Minister of Foreign Affairs H.E. Mr. Sabri Boukadoum, participated in this important conference.
During the visit, Mr Bedoui also met the Prime Minister of Japan Shinzo ABE, to discuss the reinforcement of bilateral relations.


Reliability in Action
Look at our wide range of mid-size loaders
4 - 6 tonne payload class

Standard Chartered roots for sustainable finance

Standard Chartered Bank has announced its commitment to pursue sustainable financing across sectors.

Speaking at the opening of the inaugural African Summit – Transforming Africa into the next Global Growth Engine – held in Nairobi, Kariuki Ngari, Standard Chartered Bank Kenya CEO, said that sustainable finance is now recognised as one of the megatrends shaping the future of global finance.

Image Credit: Standard Chartered

The summit aims to reflect on challenges and opportunities that can help deliver sustainable development for Africa.

"This summit marks a major milestone for us at Standard Chartered Bank Kenya. At a time when Kenya, and Africa continent at large, is facing continued economic and financial vulnerability, we have committed to pursue sustainable finance in our dealings across various sectors," Ngari added.

"Financing and sustainability go hand in hand. Financial institutions were the key determinants of global capital flows. Banks have a powerful tool – financing – to promote change. We have an opportunity and obligation to leverage our banking knowledge, products and footprint to provide client solutions which not only make financial sense, but also have a positive and lasting impact on our communities and environment," he noted.

The meeting was attended by leaders from major financial and environmental institutions, the UN, multinationals and sustainability campaigners. These included Transport, Infrastructure, Housing, Urban Development and Public Works Senior Secretary Esther Koimett, Secretary-General of the United Nations Conference on Trade and Development (UNCTAD), Dr Mukhisa Kituyi and Dr Richard Munang, United Nations Environment Coordinator (UNEP) Africa Regional Climate Change Programme.

Sunil Kaushal, Standard Chartered Bank Regional CEO, Africa and the Middle East, said that efforts to prevent climate change are estimated to cost the global economy almost US$14 trillion per year by 2100, which is why there is a need to sensitise financiers to sustainable financing.

"In 2018, Standard Chartered issued the world's first blue bond, on behalf of The Republic of Seychelles, and raised US$15mn from impact investors to finance the expansion and transition of its marine protected areas, improve governance of priority fisheries and develop its blue economy. In addition, Standard Chartered structured the financing for the largest renewables deal in the Gulf region for DEWA last year."

KENYAN COMPANY WINS GRANT FROM USTDA

The US Trade and Development Agency (USTDA) has awarded a grant to Kenya's Craftskills Energy for a feasibility study to develop a 50-megawatt wind power plant with integrated battery storage capacity in Kenya.

Thomas R. Hardy, USTDA acting director, said, "This project has both the structure and the smarts to succeed. USTDA believes US companies will be very competitive in the supply of the project's major components."

In addition to a wind resource assessment and plant design, the study will explore a battery energy storage solution that will enhance the capacity of the power plant and stabilise the intermittency of wind power to the grid. The result would be more power delivered more reliably to Kenyan consumers at a competitive cost. The US firm Delphos International will execute the study.

ENGIE EXPANDS OPERATIONS IN AFRICA

French multinational energy conglomerate ENGIE has expanded its operations in Africa through the acquisition of Mobisol, an off-grid solar solutions provider.

With the acquisition of Mobisol, ENGIE will provide solar home systems in three additional countries, complementing the six countries where it is present with its solar home system company Fenix International. The closing of the acquisition of Mobisol will happen once all approvals of the relevant regulatory bodies are received.

ENGIE has activities in off-grid electrification in Africa. With its subsidiary Fenix International, it provides access to energy and financial services via its solar home systems to more than 500,000 customers, improving the quality of life for more than 2.5millionn people in Uganda, Zambia, Nigeria, Benin, Cote d'Ivoire and Mozambique.

Additionally, with ENGIE PowerCorner, it aims to supply affordable electricity to rural populations through smart mini-grids powered by solar energy and battery storage. PowerCorner provides 24/7 energy services to households, local businesses and public services in villages across Tanzania and Zambia. All of these services are enabled by digital financial solutions such as mobile money and Pay As You Go technologies. Isabelle Kocher, CEO of ENGIE, stated with the acquisition of Mobisol, ENGIE aims to provide clean energy and trigger economic activities for households and entrepreneurs, generating additional income opportunities. Universal electrification is the 7th of the UN Sustainable Development Goals that the global community has committed to achieving by 2030. More than 600 million people have no access to electricity in Africa, and by 2030 the continent is expected to be home to 80 per cent of the world's off-grid population, according to the IEA.

BRIEFS

Malindi International Airport phase II expansion

Image Credit: Kenya Airports Authority

The airport will handle direct international flights.

Malindi International Airport manager Mohamed Karama reported the tender for the expansion of the airport runway from 1.5km to 2.5km has been awarded and the airport is "currently engaging the consultant on the action plan for the extension the runway". The Kenyan government has embarked on this multi-billion airport expansion programme to increase tourist arrivals and significantly improve the economy of the region which largely depends on tourism.

Ethiopian Airlines adds WiFi service

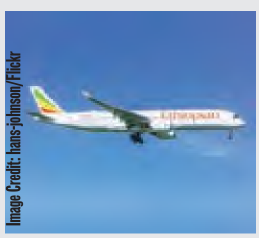


Image Credit: hans-johnson/Flickr

The airline plans to have WiFi on other long haul aircraft as well.

Ethiopian Airlines has introduced WiFi Internet connectivity to its A350 fleet using broadband satellite (Ka-band) technology. Passengers can connect to send emails, shop online or even chat on social media while flying over the clouds. Passengers can access the in-flight connectivity service by purchasing vouchers at Ethiopian Airlines sales outlets, including the Addis Ababa International Airport customer service desk, the boarding gate and cabin crews onboard the fights.


MOTEURS Baudouin
a WEICHAI company
OUR POWER.
YOUR SOLUTIONS.
INDUSTRIAL POWER ENGINES
30 - 1110 kWm
POWER GENERATION ENGINES
18 - 3125 kVA
Durable. Robust. Built To Last.
Baudouin.com

Fintech Nomanini raises US$4mn in funding round led by Standard Bank

Image Credit: Africa Studio/Adobe Stock

Through the strategic investment, Standard Bank aims to boost digital financial services in the region.

Nomanini, the fintech platform for the informal retail ecosystem, has announced a US$4mn funding round led by Standard Bank and completed by Goodwell Investments, an Amsterdam-based investment firm focused on fintech and financial inclusion.

Through the terms of the strategic investment, Standard Bank gains a stake in Nomanini and the ability to use its platform to unearth previously 'invisible' data on the informal retail economy.

The bank is set to offer a mobile application which provides access to new lines of business, credit and savings services for informal merchants across 14 African countries. The service will be available in South Africa, Zambia, Mozambique, Uganda, Malawi, Angola, Zimbabwe, Namibia, Ghana, Nigeria, Kenya, Tanzania eSwatini, Lesotho and Botswana.

Transaction data analysis via Nomanini's platform means that micro-merchants' creditworthiness can be more accurately assessed and many will become eligible for working capital loans for the first time. For the merchants using this service, this means a boost to ongoing trade, increased return customers and the sale of additional goods and services.

The partnership is a culmination of Standard Bank and Nomanini's shared mission to help the informal retail trade grow and of Standard Bank's commitment to branchless banking, helping its customers "bank at any time, from anywhere." The launch of the app is set to enable Standard Bank to boost access to financial products and services and expand its customer base while addressing the business needs of Africa's informal retail merchants.

Sub-Saharan Africa remains one of the world's largest untapped economic opportunities, with consumer spending expected to reach US$2.1tn by 2025 (McKinsey, 2017). However, despite the progress of mobile money schemes, almost nine in 10 retail transactions happen in cash, via informal channels like kiosks and open-air markets and independent shops (Deloitte, 2017).

BTC AND SPACECOM IN MULTI-YEAR SATELLITE SERVICES DEAL

Spacecom, operator of the AMOS satellite fleet, and Botswana Telecommunications Corporation Limited (BTC) have announced that BTC is doubling its capacity on AMOS-7 communication satellite KU-beams.

With this new capacity, BTC is adding cellular backhaul and various long-distance communication services to enhance rural area connectivity. AMOS-7's KU-band beams enable mobility by providing high data rates for communications-on-the-move irrespective of location in country.

With this, BTC is seen to offer e-learning, e-medicine, e-commerce and other e-government services to residents countrywide wherever they are, even when they are travelling. The capacity allows BTC to provide improved broadband service to industries operating outside major towns across tourism, agriculture, construction, banking, etc. and offer community Wi-Fi hotspots, safer cities, smart farming and business continuity services throughout the country.

AFRICA'S CEOS LOOK FOR GROWTH OPPORTUNITIES AMID ECONOMIC AND SOCIO-POLITICAL UNCERTAINTIES: PWC

African business leaders are less optimistic about the strength of the global economy and their organisations' ability to grow revenues in the short and medium term than they were a year ago, according to the seventh edition of PwC's Africa Business Agenda 2019 report.

A quarter of African CEOs (25 per cent) believe that the global economy will decline over the next 12 months, noted the report.

The unease about global economic growth is dampening CEOs' confidence about their own companies' outlook in the short term, with 27 per cent of CEOs stating they are 'very confident' in their own companies' prospects for revenue growth over the next 12 months. Furthermore, 39 per cent are 'very confident' about their organisations' growth prospects over the next three years.

Dion Shango, CEO for PwC Africa, said, "In Africa, economic and policy uncertainty, among other issues, have cast some doubt upon business leaders' hopes for immediate and future growth. Although there is a drop in optimism, African business leaders do see some opportunities on the continent – but overall, they are playing it safe."

The Agenda compiles results from a survey of 83 CEOs across 19 African countries. The results are benchmarked against the findings of PwC's 22nd Annual Global CEO survey of more than 1 300 CEOs, conducted during the Q4 2018.

Ongoing economic, social and political uncertainty is a perennial worry for CEOs globally, not least for those in Africa. Concerns over policy uncertainty, skills shortage, over-regulation and exchange rate volatility lead the long list of risks causing anxiety for CEOs in all regions.

BRIEFS

DHL expands Africa eShop app

Image Credit: DHL

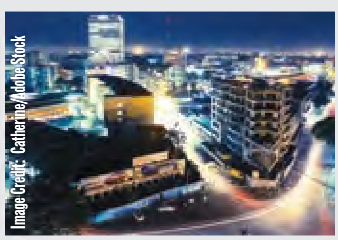
Hennie Heymans, CEO of DHL Express, sub-Saharan Africa.

DHL has expanded Africa eShop online shopping application to 34 countries across sub-Saharan Africa. The DHL Africa eShop app aims to provide African consumers with access to international retailers on a platform. It is set to enable African customers to shop directly from more than 200 US- and UK-based online retailers, with purchases delivered to them by DHL Express.

This solution was developed in partnership with Link Commerce - a division of Mall for Africa.

DRC President to host InvestDRC Forum

Image Credit: Catherine/Adobe Stock



The event is set to unlock new business potential.

As part of President Félix Tshisekedi's first state visit to South Africa, the Government of the Democratic Republic of Congo (DRC) will host its first ever InvestDRC Forum on 22 November in Johannesburg.

InvestDRC is expected to unite intra-African and Congolese investors in their mission to unlock new potential across diverse sectors through infrastructure.

Ghana takes a step closer to becoming Africa's leading 'bean-to-bar' producer


Image Credit: Adobe Stock

Ghana is known for producing the world's highest-quality bulk cocoa beans.

Niche Confectionery Ltd, a chocolate manufacturer in Ghana, has signed an eight million euro loan agreement with The Netherlands Development Finance Company (FMO), to support the expansion of local cocoa processing in Ghana.

With this credit facility, Niche will purchase manufacturing equipment which allows it to produce confectionery such as chocolate spreads, ready-to-drink chocolate milk, and chocolate bars. These will be sold on the regional market, bringing the company one step closer to its vision of becoming Africa's leading bean-to-bar producer.

Ghana produces the world's highest-quality bulk cocoa beans and is second in global production of cocoa, with 20 per cent of the world's harvest. A relatively low amount of value addition takes place in-country, however, as nearly two-thirds of its beans are exported as raw cocoa.

Niche was founded in 2011 to help close this gap and it currently produces high-quality, semi-finished cocoa products for export. Now, however, it can move up the value chain to produce confectionery that meets the growing local demand for premium consumer products that incorporate high-end refining and marketing.

Niche employs more than 360 people domestically and its activities represent an important source of foreign exchange earnings for Ghana. It also plays an important role in facilitating the transfer of technical knowledge within Ghana's cocoa-processing industry while improving the livelihoods of local farmers.

Linda Broekhuizen, chief investment officer at FMO said,"With this transaction FMO expands its relationship with Niche, thereby supporting Ghana's most important agricultural sector by adding more value locally and increasing jobs."

One of the primary social issues connected to cocoa farming in West Africa concerns the need to improve the lives of millions of poor people whose income is derived from cocoa farming. Niche is working with cocoa co-operatives in Ghana to produce certified cocoa products and increase farmer incomes to a sustainable level that allows them to earn a living wage and send their children to school.

FARM-TO-MARKET ROADS REVAMPED IN LIBERIA

The US Agency for International Development (USAID) is set to launch farm-to-market road rehabilitation activity (F2MRR) in Liberia to support goals of poverty alleviation and hunger reduction.

As part of F2MRR, USAID works to provide sustainable cost-effective feeder roads in Liberia. The activity will mainly focus on Bong and Grand Bassa counties.

Rehabilitated feeder roads reduce travel time and transportation costs for surrounding communities and farmers. In addition, road rehabilitation work brings direct employment opportunities for residents of rural communities. Commercial activities generated by improved roads, in turn, create a market for agricultural and other products.

The current activity includes rehabilitating 13.3km of farm-to-market roads. To date, the USAID rehabilitated 59km of the road in two counties.

USTDA SUPPORTS LNG IMPORTS IN GUINEA

The US Trade and Development Agency (USTDA) has announced a grant to West Africa LNG Group Guinea SA (WA-LNG) for a feasibility study to assess the economic, financial and technical viability of a liquefied natural gas (LNG) receiving terminal and distribution network near the Port of Kamsar in the Boké region of Guinea.

The study will be conducted by Plum Energy LLC of Tukwila, WA, and support the diversification of Guinea's energy sector, which currently depends on hydropower, diesel and heavy fuel oil.

"USTDA believes in this project, and we support its goal of bringing an important new energy source to the Guinean market," said Thomas R. Hardy, USTDA's acting director. "We know that natural gas can decrease the cost of energy for a wide array of commercial and industrial consumers, and we look forward to seeing those benefits right here."

The introduction of LNG into the market allows for the use of a more sustainable, reliable, year-round energy source. WA-LNG will distribute natural gas or LNG to end-users, initially including bauxite producers and an agro-industrial park supported by the African Development Bank.

"We are thrilled to have reached this important milestone in making affordable and environmentally friendly LNG available for the development of the Guinean industrial and agro-industrial sectors, as well as improving the lives of the Guinean people, said Ambassador (Ret.) Patricia Moller, the chairwoman of WA-LNG.

This project advances the goals of the Electrify Africa Act, the US government's Power Africa, Prosper Africa and Doing Business in Africa initiatives.

Natural gas is the cleanest burning fossil fuel and the increased use of natural gas can signficantly improve local air quality.

BRIEFS

Amos satellite benefits West Africa

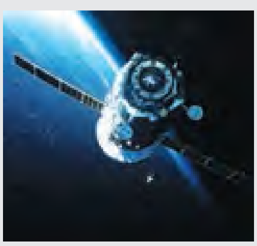


Image Credit: Adobe Stock

Amos-17 satellite will provide an important service to viewers.

Spacecom, operator of the AMOS satellite fleet, has announced that ViewMedia, will launch a new digital broadcast platform on the AMOS-17 satellite at the 17°E orbital position above Africa. ViewMedia's platform on AMOS-17's KU-Band frequency will provide DVBS-2 broadcast services to West Africa for a primarily Francophone audience. Safia Rana, ViewMedia's commercial director said, "This is a significant moment for West African broadcasters."

Nigeria Mining Week in Abuja

Image Credit: Adobe Stock

PwC Nigeria's head advisory looks forward to the implementation of the 'minerals' road map.

Nigeria Mining Week is taking place in Abuja from 14-16 October and will be jointly organised by PwC, Spintelligent and the Mining Association of Nigeria (MAN). Cyril Azobu, PwC Nigeria's head advisory and mining sector leader said, "We look forward to continuity in the implementation of the roadmap by the new ministers, albeit with adjustments and enhancements made to certain aspects, to ensure the targets that have been set therein, are met."

Upcoming Events Calendar 2019/2020

OCTOBER

2
OFF-GRID ENERGY ACCESS FORUM
London, UK
www.greentechmedia.com

15 - 16
NIGERIA MINING WEEK
Abuja, Nigeria
www.nigeriaminingweek.com

29 - 31
5TH ANNUAL SOUTHERN AFRICA POWER SUMMIT
Cape Town, South Africa
www.ssapower.com

NOVEMBER

4 - 8
AFRICA OIL WEEK
Cape Town, South Africa
www.africa-oilweek.com/Home

5 - 8
ECOMONDO (THE GREEN TECHNOLOGY EXPO)
Rimini, Italy
en.ecomondo.com

12 - 13
FUTURE ENERGY NIGERIA
Lagos, Nigeria
www.future-energy-nigeria.com

12 - 14
POWER GEN EUROPE
Paris, France
www.powergeneurope.com

12 - 14
AFRICACOM
Cape Town, South Africa
tmt.knect365.com/africacom

20 - 23
BEST5 ALGERIA
Alger, Algeria
www.megaclimaexpo.com

21 - 27
9TH ANNUAL GHANA SUMMIT 2019
Accra, Ghana
www.cwcghana.com

FEBRUARY

3 - 6
MINING INDABA
Cape Town, Africa
www.miningindaba.com

MARCH

10 - 14
CONEXPO-CON/AGG
Las Vegas, America
www.conexpoconagg.com

Future Energy Nigeria: New initiatives by the government present unlimited investment opportunities

"Nigeria is taking ownership of its power deficit and is taking charge of its energy future," says Future Energy Nigeria's business development director Ade Yesufu. "The new initiatives by the government present unlimited opportunities for stakeholders across the entire power sector value chain, including metering, billing and revenue collection, technology and service providers, financiers, manufacturers and suppliers across the sector. In short, watch this space: Nigeria is positioning itself as an investment destination for the power sector. We're excited."

The 16th edition of the upcoming conference and exhibition in Lagos from 12-13 November presents solutions for the power sector and connects power and energy professionals working together to advance a sustainable energy economy.

Looking to innovation solutions

"With the highest GDP in Africa and still growing at an impressive rate, businesses across Nigeria are looking to innovative solutions to create their own stable and viable power solutions," explains Yesufu. "Investments in mini grids contribute towards rural electrification and the Meter Asset Provider (MAP) initiative was introduced by the Nigerian Energy Regulatory Commission (NERC) to address the end-user metering gap with regards to financing, procurement, installation, servicing/maintenance and replacement of metering equipment."

Image Credit: Spintelligent

A knowledge hub discussion being held at a previous Future Energy Nigeria event.

He adds, "Future Energy Nigeria will focus on bridging the country's energy access gap, the role of off-grid generation projects as well as discuss the NERC initiative to franchise the Electricity Distribution Companies (DisCos) in Nigeria. The goal is to increase competitiveness in the market and improve the quality of electricity supply through investment in metering, billing, collection and network rehabilitation and expansion."

Conference session highlights at Future Energy Nigeria include:

- **Opening session: "Bridging Nigeria's energy access gap"**
  This session will shine a light on the off-grid projects of the Rural Electrification Authority; from increasing access rates to their positive impact in the communities.
- **Recapitalisation of DisCos? –** Can the recapitalisation theory work in practice?
  Panel discussion: What will recapitalisation achieve for the Nigeria power industry?
- **Next steps: Understanding sub-franchising of DisCos' operations**
  Presentation: Where are the private sector opportunities in the distribution franchising business model?
  Country case study: How will a concessional agreement in Ghana realise increased revenue collection? What can Nigeria learn from the agreement?
  Panel discussion: Franchising arrangements in the areas of supply, metering, billing and collection.

Solar off-grid and IPU training

Future Energy Nigeria's free and practical knowledge hub sessions aim to assist power professionals and senior engineering students to become familiar with the latest technology and current trends and thereby addressing the skills gap and advancing capacity building to propel Nigeria's power sector. The training will provide a platform to accelerate entrepreneurial spirit in off-grid solar and learn how to install solar panels.

The exhibition is expected to feature some 70+ leading global and local technology and services providers for the power and energy industry.

For more information visit www.future-energy-nigeria.com

AFRICAN REVIEW / ON THE WEB

A selection of product innovations and recent service developments for African business
Full information can be found on www.africanreview.com

ECOBANK ANNOUNCES APPOINTMENT OF SENIOR FINTECH ADVISER

Ecobank Group's new fintech adviser will help the bank implement its digital strategy.

Ecobank Group has announced the appointment of Aissatou Djiba Diallo, formerly of Microsoft, as its new senior fintech adviser to strategically raise Ecobank's support for the fintech sector.

Diallo will lead the group's fintech initiatives and advise senior management on the banking group's fintech strategy. Her appointment is an important step in the ongoing implementation of the group's broader digital strategy and demonstrates Ecobank's commitment to playing a major role in helping Africa's innovative fintech sector to achieve significant global market share.

Prior to joining the Ecobank Group, Diallo was the head of innovations at Microsoft4Afrika, where she built the strategy to identify, support and attract major African fintech start-ups and partners to the Microsoft Cloud platform and oversaw 50 countries. Before that, she was marketing manager and partner and strategy programme lead for West and Central Africa, Microsoft.

Speaking on the appointment, Eddy Ogbogu, group executive, operations and technology, said, "Diallo's appointment represents an important step in the overall Ecobank Group's fintech and digital agenda. The expertise, passion and innovation she brings to the role will allow us to take the next crucial steps on our path to further cementing our position as Africa's leading digital bank."

A large part of Diallo's role will focus on growing the bank's flagship annual fintech initiative – the Ecobank Fintech Challenge and Ecobank Fintech Fellowship – through which the Ecobank group has promoted Africa's most promising fintech start-ups.

The programme provides selected fintechs with the opportunity to fast-track their growth by gaining a commercial partnership and product integration with Ecobank's pan-African platform and unified ecosystem. The Challenge and Fellowship have been running for two years (2017 and 2018) and is poised for an enhanced third edition in 2020.

GAS, RENEWABLES AND CCS MUST WORK TOGETHER

Gas and renewables will be the future energy sources, says new report.

Gas and variable renewables will be the only energy sources for which demand is higher in 2050 than today, but they must work together alongside greater uptake of carbon capture and storage (CCS) to secure a rapid energy transition. This is according to the DNV GL's '2019 Energy Transition Outlook', an independent forecast of developments in the world energy mix to 2050.

The report shows that gas will account for nearly 30 per cent of global energy supply, providing the world with a secure and affordable energy base and manufacturing feedstock.

The report suggests that a combination of energy sources – primarily gas and renewables – will be the fastest route to providing affordable, decarbonised energy in the run-up to mid-century.

Carbon capture and storage (CCS) will not be employed at scale until the 2040s unless governments develop and enact more definitive policies on its use.

Liv A. Hovem, CEO, DNV GL – oil and gas, said, "All major routes to successfully decarbonising gas rely on the large-scale uptake of carbon capture and storage. The future of CCS largely lies in the hands of policy-makers setting a higher carbon price than the cost of the technology. The industry can also play a role in stimulating quicker adoption by focusing on finding ways to reduce the cost of CCS technology."

Large-scale uptake of carbon capture and storage technology will unlock significant opportunities for hydrocarbon and renewable energy technologies to work together to decarbonise the energy mix. The energy industry must however also shift its mindset from 'gas vs renewables' to 'gas and renewables' for success," she added. DNV GL points out that the long-term, sustainable future of the oil and gas industry depends on its license to operate.

"Our sector will only have the opportunity to decarbonise if it maintains society's trust through a sharp focus on safe operations and environmental performance. Companies' ability to display the highest standards of safety and sustainability today will win the public support that the industry needs to decarbonise for tomorrow," concluded Hovem.

MALAWI HOSTS AFCFTA WORKSHOPS

The Ministry of Trade and Tourism in partnership with the Economic Commission for Africa and the African Union Commission (AUC) organised an African Continental Free Trade Area (AfCFTA) Awareness Workshop in Lilongwe and Blantyre from 17-19 September.

These workshops aimed to engage relevant stakeholders on AfCFTA issues to secure a consensus for Malawi to ratify the AfCFTA agreement.

Each workshop brought together 150 participants from private sectors, civil society organisations, parliamentarians, academia, and government.

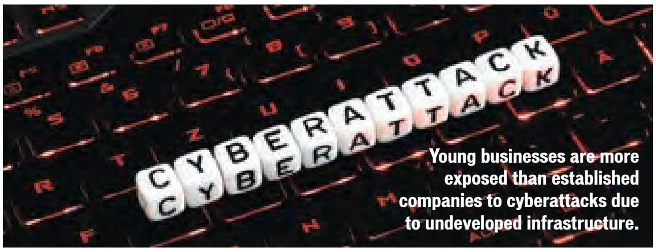
Salim Bagus, minister of industry, trade and tourism, said, "The AfCFTA marks a new dawn to Africa's economic transformation, and Malawi's economy stands to benefit with the creation of this single market. It is new hope for boosting intra-Africa trade across 55 African countries with a combined population of more than 1.2 billion people. The AfCFTA will facilitate increased business opportunities in Malawi in terms of unlimited market and economies of scale which will result in reduced cost of doing business and improved efficiency and profitability of our industries, SMEs and exporters."

The agreement entered into force on 30 May 2019 when the threshold of 22 countries ratified it. The operational phase of the agreement began on 7 July 2019 at the African Union's Extraordinary Summit, with a transition period until 1 July 2020 when trading will start. Malawi signed up to the AfCFTA on 21 March 2018, in Kigali, Rwanda.

Image Credit: Adobe Stock

The AfCFTA will open new trade opportunities for Malawi.

GROWTH IN FINTECH DRIVES GROWTH IN CYBERATTACKS



Young businesses are more exposed than established companies to cyberattacks due to undeveloped infrastructure.

Image Credit: Adobe Stock

Africa's Fintech ecosystem has surged 60 per cent in the last two years and the continent's Fintech firms have grown to 491 from 301 in 2017, with US$132.8mn raised in 2018, but the threat of cybercrime is ever increasing.

The development of mobile technology has paved the way for Africa's Fintech revolution where South Africa, Nigeria and Kenya account for 65.2 per cent of Africa's Fintech startups.

"Such Fintechs have had a significant impact on the financial services landscape of these countries, where locally, these solutions are reaching more Kenyans than ever before," says Bethwel Opil, enterprise sales manager at Kaspersky in Africa.

"In fact, Kenya has brought about practical Fintech experiences, making it one of the most financially inclusive countries in Africa and where mobile money transactions contribute a significant percentage to the country's GDP."

Locally, many businesses and consumers are taking advantage of the ability to use digital methods to move money around. However, this emerging Fintech space is also becoming an increasing target for cybercriminals.

"Young startups are always more exposed than traditional businesses, and their undeveloped infrastructure, especially at the startup stage, make them an easier target than traditional banks," says Opil. "Additionally, there are a growing number of businesses that are using or offering cryptocurrency and mobile money as payment methods and cybercriminals are embracing this trend, using sophisticated techniques to access funds."

He added,"Don't just follow links, double check everything before sending the transaction, and make sure you use a high-quality security solution to safeguard the devices you use."

AFRICAN ENERGY SECTOR TO SEND STRONG MESSAGE ON INVESTMENT AT ADIPEC 2019

After a year of continuous recovery across Africa's oil markets, the continent's energy industry will be gathering at ADIPEC in Abu Dhabi on November 11-14 to set the industry agenda for 2020.

As Africa's energy revolution accelerates, African energy officials from governments and the public and private sectors are joining ADIPEC to send a strong message on the continent's potential for the coming years. Taking the lead on representing Africa at the world's largest oil & gas event, the African Energy Chamber has signed an agreement with ADIPEC and is officially endorsing the conference and exhibition and inviting all its partners to join the African delegation participating in ADIPEC.

"The good news for Equatorial Guinea and many African countries is, we have the resources. African countries have untapped reservoirs of oil and natural gas that have regrettably been underexplored. We need to attract investment in our oil and gas industry, explore, supply the market and develop our countries. ADIPEC is a place to meet investors. We have a good relationship with the UAE through OPEC and the GECF. We have worked closely on oil matters under the leadership of H.E. Suhail Al Mazrouei and the Ministry of Energy and Industry," stated H.E. Gabriel Mbaga Obiang Lima, Minister of Mines and Hydrocarbons of Equatorial Guinea.

Angel investors can help solve early stage African venture challenges.

Image Credit: Adobe Stock

Fanning Africa's embers of angel investment

'Angel investing is on the rise across Africa' is a commonly heard phrase for those active in the early stage investment space on the continent now.

As ABAN President, Tomi Davies, points out in his article '*Momentum for the African Angel*', 2018 was a milestone year in terms of angel investments. Thanks to angel investors as well as early stage venture capital funds, African startups raised more than US$725mn across more than 450 deals. And according to GSMA's Maxime Bayen, 51 African startups have raised US$1mn or more so far in 2019, amounting to a total of US$453mn. As avid investors with personal interests in seeing the success of promising African startups that offer solutions to revolutionise peoples' lives, we warmly celebrate these achievements. The so-called 'African narrative' is definitely being rewritten.

At the same time, we recognise and wish to raise attention to the incredible potential for even greater venture growth and investment. Davies enumerated the many transformative factors that shed light on the opportunities staring us down. The takeaway of his analysis is this: Never before has the pipeline of African innovation been so investible, thanks to increasing urbanisation, digital penetration, a growing labour force, and much more.

Today, there are approximately 50 active Africa-focused angel investor groups – ABAN, LAN, Dazzle Angels, Jozi Angels, and Cairo Angels to name a few, with new ones arising in Benin, The Gambia, Ethiopia and Mali. Next to pre-seed, seed and series A funding, what can angels offer? Angels can help solve early stage African venture challenges by mentoring the rising entrepreneurs and by connecting them to our business networks, so they can continue to build up their ventures. Angel support that targets women-led ventures is especially vital considering the traditional stumbling blocks they must overcome to achieve success.

Another thing that existing angel investors can do is to spread the word and lend support to other aspiring angel investors who wish to invest in African businesses.

Meghan McCormick in her aptly named article, *'Africa Needs More Angel Investors'*, highlights the fact that high net-worth individuals (HNIs) do not invest in African startups is simply because they are not familiar with asset classes adjacent to tech, a space where many African startups fall (naturally, many also fall within tech). Angels therefore have a dual role to play – both entrepreneur-facing and towards fellow investors, if we want to see the continent take off even further.

Capitalising on the (controversial) Jumia opportunity

2019 will go down as the year where the first African tech-focused company, Jumia, launched on the NYSE. It was, and remains, a controversial topic, to say the least. But what has happened since is something we can all appreciate. Investors' eyes have turned increasingly more to the African continent. What is happening there? Who are the players? Which companies should we be paying attention to? How can we invest in, and be a part of, the next big success story?

Building on this attention and responding to these questions is what we, as pivotal players in the African startup ecosystem, need to do. These are some of the very key reasons we, at VC4A and ABAN, hold the Investor Summit each year. It is an exclusive setting where eager African investors and ecosystem stakeholders come together to share tips and tricks, and to discover Africa's most interesting Series A investment opportunities through the VC4A Venture Showcase.

Your chance to meet the top 10 of Africa's Series A-ready ventures is just around the corner

For those of you investors looking for vetted Series A-ready companies to add to your portfolio, VC4A's Venture Showcase will have what you're looking for. Founders from 10 innovative, high-growth scale-ups will present their ventures to attendees at the Africa Early Stage Investor Summit on 14 November. They will each give a three-minute pitch and investors can further personally engage with the entrepreneurs in 30-minute deep dive sessions, that will be held in a private room at the summit venue.

VC4A's Venture Showcase is a great example of true industry collaboration. The vetting process is fully done by partnering external investors, where angel groups are referring their portfolio companies ready for the next round. Partner VCs then assess the opportunities and ultimately decide who will be on stage at the Summit.

"In 2019, the investor participation has been just outstanding, with 40 major VCs and multiple angel groups involved in the process," says Alina Vinogradova, VC4A's head of programs and partnerships. "We believe initiatives like this help to build trust and foster collaboration between industry stakeholders, and importantly, create both co-investment opportunities and exit opportunities for our partners."

Why not consider joining us in November? Only together can we fan the embers of angel investment opportunities and business development across the continent. ■

By David van Dijk, ABAN and Melissa Ruggles, VC4A.

Impacting society and industries with 5G networks

Aji Ed, chief technology officer, Nokia, MEA, talks about the potential of 5G capabilities in sectors such as energy and healthcare.

Image Credit: Nokia

Aji Ed, chief technology officer, Nokia, MEA.

How many commercial 5G agreements do you have in place in the Middle East and Africa?

Aji Ed: Globally, as of mid September, Nokia signed 48 5G commercial agreements and 11 networks are now live with 5G services. Nokia is the only 5G vendor with an end-to-end portfolio and a truly global presence. In the Middle East and Africa region, Nokia's public commercial references include Saudi Telecom Company (STC), Zain KSA (Saudi), du (UAE), Ooredoo Qatar and South African operator rain. There are more 5G commercial contracts we have signed with major operators in the region which we will announce soon.

While we see a strong acceleration of 5G launches in the Middle East region in this year, Africa is also preparing for 5G. There are numerous use cases that will gradually drive strong 5G adoption in Africa as well. However, the spectrum availability for 5G is a constraint in many African countries. Regulators need to enable sufficient 5G spectrum for operators to proceed faster with 5G adoption.

What's the main constraint in Africa? Lack of infrastructure?

AE: Africa is as capable of embracing the huge potential of this technology as the rest of the world, even within the limitations of existing infrastructure and complex connectivity challenges. Industries have adopted 2G, 3G and 4G in incremental steps as these technologies have evolved within the constraints of legacy technologies and capabilities. Now, 5G is introducing an opportunity for the industry to embrace growth and innovation. But only if it is done with a clear focus on what 5G can realistically deliver and a clear eye on the future.

To fully capitalise on 5G, the industry has to rearchitect the networks because new services will not only be about high bandwidth but also about low latency. The future is about ensuring that systems and solutions are 'always on' and intelligent, providing industry verticals with the ability to fully recognise the capabilities of automation.

Of course, there have been some concerns around how quickly 5G could become a reality within the African context. There are legacy network infrastructure issues and connectivity in many areas remains limited. However, a significant percentage of local networks have already started to explore how they can capitalise on 5G and commercialise their 5G in non-standalone architecture.

It has become clear that great 5G runs on top of great 4G. In non-standalone architecture, the 5G control information goes through the LTE eNodeBs and the throughput can tap the resources of 5G and 4G through dual connectivity. This means that if you have the best performing 4G network, you are already ahead of the game in 5G. A recent study conducted by RootMetrics confirmed that 62 per cent of the Nokia-powered LTE networks operated by one of the big four – Sprint, AT&T, T-Mobile, and Verizon – in the United States, delivered the fastest or second-fastest network speed. This RootMetric score is highly relevant in the context of 5G as the best LTE network performance is the foundation for the best 5G.

What impact do you think 5G will have on society in comparison to 4G?

AE: 5G technology has enormous potential to transform the way people live and work as well as transform multiple sectors in the Middle East. 5G will provide ultra-high bandwidth and low latency which is not possible with 4G. 5G capabilities will be able to provide new applications in areas such as virtual reality, augmented reality and artificial intelligence. Energy, healthcare, education, transport and entertainment sectors will benefit from various IoT use cases enabled by 5G. These use cases will not only enhance operational efficiencies and user experiences but also provide new revenue opportunities. The technology has the potential to benefit the industrial sector in a huge way. The Fourth Industrial Revolution will be characterised by the digitalisation and interconnection of all physical elements and infrastructure controlled by both humans and advanced intelligent systems. This will ultimately impact all major sectors – communication, transport, health, energy, manufacturing, education and more – and will affect global value chains.

We at Nokia help operators developing 5G use cases to transform the society and industries in the Middle East and Africa. Specific examples we already see being developed for Middle East and Africa include:

- Reusing and optimising the limited spectrum in the region to dramatically improve network capacity in hotspot urban areas and events such as Hajj and major sports events.
- To broadcast full interactive HD VR and holograms for key events such as Hajj, speeches by top government executives, concerts,

etc. For example, at the Vodacom Durban July horse racing event, Vodacom showed off Africa's first live 5G data session on a commercially-ready 5G mobile phone using Nokia's AirScale 5G radio network solution. Complementing the Stars of Africa theme of the event, Vodacom demonstrated the first hologram carried over a commercially ready 5G network in Africa, streaming live karaoke performances of guests at the Vodacom Paddock.

- Low-latency, ultra-reliable connected cars as expected to be developed in Dubai.
- High level of government and public security, building on previous 4G public safety networks and taking it to the next level.
- Fully replacing the need of fiber-to-the-home (FTTH) with equal or better fixed wireless connectivity.
- Fully automating, monitoring and controlling shipping and container ports across the Middle East with high bandwidth, highly secure low-latency 5G networks.

Could you tell us more about Nokia's participation at Expo 2020 Dubai?

AE: Nokia will be part of the Finnish pavilion at Expo 2020 Dubai to demonstrate Nokia technologies and professional services to Communications Service Providers (CSPs) as well as public and private sector enterprises in the region and help them realise their visions toward a fully digitalised world. It will include Nokia 5G technologies and innovative use cases, among others.

Nokia will make major, exciting announcements regarding our advanced technology demonstrations during the event in key areas including 5G, enterprise digital transformation and public safety. Nokia will strongly be present at the expo for various high-profile customer meetings and activities including technology demonstrations that benefit telecom operators as well as enterprise verticals including transport, energy and public sector. ■

Image Credit: Nokia

Vodacom demonstrated the first hologram carried over a commercially ready 5G network in Africa.

Automated handling plays vital role in e-commerce

Across almost all sectors of global industry, Automated Materials Handling Systems (AMHS) now play a massive role in the supply chain, whether in support of just-in-time deliveries for the South African automotive industry, or in handling e-commerce retail items purchased online from a potentially massive online African shopper commmunity. Tim Guest reports.

The Beumer Tilt Tray Sorter transports and discharges parcels, packages, delicate products, as well as baggage, safely and with maximum accuracy.

According to Maximise Market Research, the global AMHS sector is on target to surpass US$60bn by 2026. This figure is in line with similar projections by other research houses following this arena. From robots to automated storage and retrieval systems (ASRS), conveyor and sorting systems, the world of AMHS uses an ever increasing armoury of automated equipment involved in storage, transport, assembly packing, distribution as well as waste product handling functions and other processes in the supply chain. And these equipments and functions apply themselves in relative equal measures across industry sectors, from automotive, aviation, beverages, chemicals and e-commerce/retail, to electronics and semiconductors, food, healthcare and more.

Huge AMHS potential across MEA

What AMHS brings to the party for many is that it acts as an enabling technology helping industries grow at a far more rapid pace than would otherwise be the case. Often lumped together geographically in this space, the Middle East and Africa (MEA) has an AMHS market projected by another research house, Mordor Intelligence, to reach US$3.8bn by 2021.

Automated guided vehicles, conveyors, computerised inventory systems, scanning and sorting machinery, robots in toxic environments, shipping and receiving equipment, are all set to play increasingly active and important roles in this sector throughout the nations that make up the MEA. Major multinational firms are now using countries in sub-Saharan Africa to source components and assemble vehicles for local and international markets. AMHS from player such as Daifuku, the Beumer Group, Murata Machinery and others are playing a big part in making this sector's supply chain ever more efficient. Conversely, this growing sector is one of the major propelling factors for the growth of the AMHS market itself in the region; a true two-way street where one begets the other and vice versa. Growth of the automotive industry in South Africa, for example, is rapid and the country is fast becoming a centre for the manufacture and export of vehicles and components, with AMHS playing a major role in enabling this boom. Nigeria, too, has become another such hub where global manufacturers like Nissan, Ford and Volkswagen, together with local partners, have begun vehicle assembly and the use of AMHS systems such as assembly-line and other robotics, warehouse ASRS and other equipment is on the rise.

Robotics complement and replace

Robotics themselves play a major role in the automotive assembly industry, supporting and performing various functions in assembly, machine loading, material removal, order picking, packaging and waste handling. Their use delivers cost savings, quality improvements, real estate optimisation and waste reduction, and their implementation by players across Africa's growing automotive assembly sector is leading to significant rises in efficiency and productivity in manufacturing and warehousing.

And while their introduction may in some cases reduce the need for human labour, their use offers a level of worker safety, with robots performing more dangerous tasks in potentially more hazardous and sometimes toxic environments. Automated guided vehicles, conveyors, computerised inventory systems, scanning and sorting machinery, all play a role in reducing the human efforts required in operations. AHMS robotics and other systems reduce the need for staffing in such areas as production, handling, storing and shipping of the materials with companies seeing the 'employment' of such systems as the future, particularly as the rapidly rising rate of automation customisation around the world in major industrial sectors means if you want to remain competitive you must automate too.

E-commerce growth needs AMHS

Another area where AMHS play a critical enabling role is in the expanding arena of e-commerce where companies have to react quickly in their order processing and make their outgoing and returns supply-chain logistics as efficient as possible. According to McKinsey & Company Africa's booming e-commerce sector can not only jump-start small businesses but also help large companies enter a market full of energised consumers. And this is where the implementation of automatic warehouses will play a major role in making this happen, warehouses where wireless technologies, flexible electronics, driverless vehicles will all play a part in making Africa's e-commerce supply chain effective. McKinsey & Co says sees the potential for e-commerce growth in Africa as massive. Distribution of goods and services may remain challenging and most consumers have difficulty shopping, often due to geographic obstacles and distances. But now with more than 400 million internet users in Africa, (the second-largest Internet-user population on the planet after China), and the boom of mobile, consumers have a way, through e-commerce, to access goods and services in a more efficient way than ever before. Ensuring this growing sector operates as effectively as possible, implementing appropriate AMHS such as ASRS in the e-commerce warehousing space is essential. It is another example of that two-way street in action. That's not to say it's all plain sailing; high capital expenditure costs as well as equipment leasing costs can be a challenge, though the productivity benefits further down the road, whether in the e-commerce, automotive or other sectors, will make any investment in AMHS worthwhile.

Exciting times ahead

As multi-national firms increasingly turn to sub-Saharan Africa, as well as countries in the Middle East, from which to source components and assemble vehicles for both local and international automotive and other tech markets, companies in the region are facing up to the need to stay as innovative and advanced in their methods and supply chain processes as possible. Together with the potential boom in e-commerce and the need for latest automatic warehousing, these trends are major drivers for the use of automated material handling systems from specialists such as Kardex, FlexLink and others across the region. ■

Baoli KBE 25 electric forklift

The Baoli LC forklift trucks are designed to provide high productivity and excellent performance. They are ideal for indoor and outdoor use.

BAOLI KBE 25 KEY FEATURES:

- Ergonomically and easily accessible cabin designed to guarantee maximum visibility, thus increasing safety.
- "Full suspended" cabin which reduces vibration.
- Great attention has been paid to maneuverability, guaranteed by the special reduced diameter steering wheel.
- Easily accessible hydraulic levers and the dashboard with multifunction display.
- Engine compartment is made of steel to ensure greater strength and functionality.
- Maximum simplicity of the servicing and maintenance operations thanks to the practical opening to more than 90 degrees.
- AC technology for traction and lifting.
- Available in diesel, LPG or dual-fuel (LPG and petrol), with load capacities from 1.5 to 10 tonnes.
- Regenerative braking system thus achieving greater driving safety and recovery of part of the braking energy.
- Selectable driving performance level.

The KBE series with 48 V power supply guarantee greater productivity and economy.

Image Credit: SPE

CASE STUDY: SOUTH AFRICAN FREIGHT OPERATOR

One of the leading freight management and logistics operators in South Africa, Heneways, has taken delivery of the Baoli KBE 25 electric forklift from Smith Power Equipment, a South African importation and distribution company.

For internal warehouse usage to handling food grade products in its facility, Heneways went into the market for an electric forklift.

Paul Hulley, warehouse and distribution manager at Heneways, says the KBE 25 ticked all the right boxes for the freight management company. However, its competitive pricing against other brands in the local market, complemented by the aftermarket support reputation of Smith Power Equipment (SPE), influenced the buying decision.

The unit, delivered in June this year, is said to deliver a "flawless" performance. "We have deployed it for picking, staging and dispatching of stock for our food grade product customers," explained Hulley. The KBE 25 joins a fleet of other nine machines already in Heneways fleet, varying from reach trucks, electric and diesel forklifts.

The 2,5t KBE 25 is a four-wheel electric lift truck with a 48V power supply, which guarantees greater productivity and economy. With a load capacity of 2,500 kg, the unit provides excellent handling.

"Top class electronic components have been used. The traction and lifting motors are manufactured by Italian company, SME, a worldwide manufacturer of high-quality motors. Also manufactured by SME is the electronic controller, the 'heart' of the lift truck, which accurately controls every lift truck function and provides the high performance this series is capable of," says Thami Mavuso, sales representative – Construction Division.

Image Credit: SPE

> "Practical forklifts are linked with advanced technology. This is Baoli: the energy of a dynamic Chinese company and the strength of a leading German group"
>
> **A COMPANY SPOKESMAN**

The KBE lift truck is equipped standard with a curve speed reduction system and the main driving functions can be parameterised. The driver can directly choose between the various performance levels via the display, for example, selecting a reduced performance profile for more delicate handling.

Background

Smith Power Equipment has been supplying the Baoli range of materials handling equipment since last year. Baoli is one of the Kion Group brands. Kion Group is a global leader represented through the world and now in South Africa. Worldwide Kion has 3,000 employees. Sales and service network that extends to 100 countries. It guarantees reliability and advanced technology.

KION Baoli is a brand of forklift trucks that was founded in China in 2003 and acquired in 2009 by the KION Group In 2017, the KION Group went on to establish Baoli EMEA, a new organisation which replaced and expanded the previous Baoli structure in Europe, the Middle East and Africa, covering 26 countries, but with the ambitious aim of covering 86 markets in the region in just a few years.

Rising above South Africa's woes

Dr Hippolyte Fofack, chief economist at the African Import/Export Bank, (Afreximbank) talks to *African Review* about the potential growth of South Africa's economy despite the challenges ahead.

African Review (AR): In your opinion, is a IMF bailout likely in South Africa or do you think there is still time to cut back on expenditure and find ways for growth?

Hippolyte Fofack (HF): There is still time to implement the reforms needed to improve public expenditure management and strengthen the foundation of macroeconomic stability for a speedy economic recovery in the most industrialised and complex economy on the continent. The pressure to accelerate the pace of economic reforms is dictated by the challenging economic environment. The most complex African economy has been reduced to rotational blackouts and load shedding to regulate access to power, a move that has been constraining the drive for productivity growth, ongoing efforts to boost investor confidence and expand industrial production and manufacturing output to raise employment opportunities and make a dent on poverty alleviation.

Brandishing the threat of an IMF bailout further highlights the scope of challenges facing the South African government and sensationalises the problem in a world where such an option is always considered as the last resort. While such a threat is likely to put more pressure on the government the chances of it materialising are very slim. Despite all the challenges, the country still enjoys tremendous growth potentials: very deep and highly liquid financial markets; low exposure to foreign currency risks; broad-based and highly diversified economy; solid domestic investor base; highly diversified geographical destination of trade, including intra-African trade which is mitigating its exposure to adverse global shocks.

The reforms aim to unlock these potentials and set the country on a path of robust economic growth and fiscal sustainability. But to be sure the politically toxic nature of an IMF bailout is certainly the most important consideration against it. The fact that such a move could be a political suicide is perhaps the most important deterrent. No leader would want to be remembered as the first who took such a path in a nation with a very proud history.

> "Eskom becomes the achilles' heel that the government has to resolve to lift economic growth above the current anaemic rates"
>
> **DR HIPPOLYTE FOFACK**

AR: Therefore, do you think the South African economy has enormous potential?

HF: Energy has been a major drag on growth, preventing most industries and sectors to operate at full capacity. Despite these energy-related and other constraints the country has tremendous potential, both in terms of trade and economic growth. Regarding the former, it is the leading intra-African trading nation, accounting for about 25 per cent of total intra-regional trade (more than US$160bn according to most recent estimates). Its gains from expanding cross-border trade are likely to increase even more during the implementation of the African Continental Free Trade Area (AfCFTA) agreement in a region where industrial products and manufactured goods account for the lion's share of cross-border trade.

Dr Hippolyte Fofack.

Image Credit: Afreximbank

Regarding the latter, growth prospects, although South Africa's growth forecasts for 2019 have been downgraded to about 0.7 per cent, conservative estimates put the country potential growth above 3.7 per cent. Closing the large negative output gap which reflects under-utilisation of factors, is a majority priority and has informed the battery of economic reform measures contemplated by the government as well as the new growth strategy it released last month. More than closing the rather large output gap to set the country on a strong growth footing, that strategy has the ambitious goal of tackling the triple objective of secular stagnation, rising unemployment and high inequality in a country which has one of the highest Gini coefficients in the world – 63 per cent.

> "There is a strong commitment within the current administration to do what is right to set the country on a growth path"
>
> **DR HIPPOLYTE FOFACK**

AR: How optimistic are you in regard to these reforms in making a significant change in solving the Eskom crisis?

HF: The current government was elected with the mandate to implement these reforms. The challenge with Eskom crisis is the urgency of its resolution and the decreasing political capital associated with lack of progress, an incentive on the reform path. As long as load shedding and rotational blackouts continue to be in effect progress made by Eskom management to improve the generation and distribution of power are not likely to be perceptible, especially for households and corporations confronting lower productivity.

Yet there has been some improvement as reflected in the decreasing frequency of load shedding and improving plant maintenance which has become more systematic and is sustaining the generation of power. For instance, there has been significant improvement in plant performance and the recovery of diesel tank levels at the open cycle gas turbines. Better management of dam levels at pumped-storage schemes is another area of notable progress. At the institutional level, progress has equally been made in the process of unbundling Eskom by separating generation, transmission and distribution functions into three separate business entities.

Although unplanned outages are still happening electricity generation is increasingly stable and risks of load shedding are decreasing. Ongoing efforts to raise power generation and diversify the sources of energy as well as the adoption of a programme of power plant maintenance should ease the transition towards more stability in power generation and access to electricity at the household and corporate level.

AR: What about the fear of job losses from the trade unions?

HF: Public sector reforms are always very challenging because they are often associated with expenditure cuts and switching policies which have implications for income and employment – hence the source of resistance to reforms. Understandably, public sector reform will be even more difficult in a context of high unemployment rates. Although the government has taken the option to unbundle Eskom the three separate entities, which will emerge, are going to remain government-owned. This may well be the transitory measure needed to reassure trade unions and accelerate the pace of implementation of reforms.

Eskom becomes the achilles' heel that the government has to resolve to lift economic growth above the current anaemic rates and fully take advantage of growth potentials associated with the African Continental Free Trade Area (ACFTA).

AR: There is still hope then, would you say?

HF: As the most industrialised economy on the continent with one of the most liquid capital markets in the world, the country has tremendous potential. The government is working to address one of the most important binding constraints on its growth trajectory – access to energy which cuts across all sectors and has implications for productivity growth and output expansion.

In addition to the Integrated Energy Plan (IEP), which is a mix of renewable and non-renewable sources of energy, the government is also part of the Southern Africa Power Pool and has been procuring an increasingly large amount of its power from the Inga Dam in the Democratic Republic of Congo. This regional approach to energy generation, transmission and distribution championed by South Africa is positioning the country as leader in the sector and could catalyse the emergence of a continental power pool that will make individual countries' power generation industries more competitive.

Equally important, there is a strong commitment within the current administration to do what is right to set the country on a growth path. It has made the promotion of good governance the cornerstone of its new growth strategy and tackling inefficiencies in the management of public utilities and enterprises a priority.

AR: Why is there a need for labour-intensive employment in the manufacturing sector?

HF: South Africa has one of the highest unemployment rates among the G20 countries, averaging 28 per cent nationwide in the second quarter of 2019, a slight increase from the previous one. Unemployment rates are at Great Depression era levels and the rates are even higher for those in the low-income bracket at around 35 per cent. Reversing the current trend and reducing the rate of unemployment is a priority for the government.

In addition to the implementation of ongoing reforms to improve the business and policy environment with the view to boosting growth in the medium and long term, the country should also invest in labour-intensive industries and sectors that provide goods and services requiring large amount of labour to absorb the surplus of labour entering the labour market every year. Interestingly, the new growth strategy unveiled by the government last month aims to boost growth and create millions of jobs through a combination of long-term interventions boosting competitiveness and short-term interventions in labour-intensive industries and sectors such as infrastructure, agriculture, mining, tourism and hospitality and food services.

AR: Why will the ACFTA be a "great catalyst" for the country?

HF: The AfCFTA which will create one of the largest free trade areas in the world – 55 countries with a combined consumer and business spending forecast to exceed US$6.7 trillion within a decade – will be a great catalyst for the most industrialised economy on the continent. Industrial products and manufactured goods dominate intra-African trade. While more than 61 per cent of Africa's exports inside the continent are non-extractives, more than 75 per cent of Africa's exports outside the continent are extractives.

The rules of origin which grants preferential market access to goods manufactured in Africa will be both an industrialisation accelerator and a driver of industrial output expansion for existing industries. South Africa already accounts for more than 62 per cent of total exports within the Southern African Development Community (SADC), and the much larger continental market governed by the AfCFTA agreement will provide the opportunity for it to take advantage of economies of scale and expand its trade wings further north across the whole region. ■

Afreximbank is a pan-African multilateral trade finance institution which was created in 1993 by the African Development Bank.

Pan-African banking is changing the region's financial landscape

Our economist Moin Siddiqi looks at how pan-African banks are now filling the gap Western banks once held across the continent.

In the decade since the global financial crisis, Africa has witnessed a rapid expansion of cross-border banking, led by indigenous groups that are spearheading the expansion of financial services and economic integration. This, in turn, is helping to unlock the region's growth potential. The rise of pan-African banking fits Tony Elumelu, chairman United Bank for Africa vision of "Africapitalism" – shrewd far-reaching, homegrown businesses can drive future development.

The 'pan-African banks' (PABs) are the most efficient institutions in sub-Saharan Africa's financial industry – combining the best of both worlds: global edges of foreign banks and competitive home edges of local banks. After the departure of most Western groups due to tightened regulation and higher capital requirements in respective jurisdictions, PABs are now leading players, overtaking Western rivals, which had dominated banking since the colonial era.

British banks led by Barclays and Standard Chartered have focused on English-speaking countries, while Francophone and Lusophone countries were dominated by French and Portuguese banks – namely Société Génerale and Banco Comercial Portugues. Citigroup (US) and Bank of Baroda (India) maintain smaller operations. In 2016, Barclays divested its 62 per cent share in Barclays Africa Group, which controlled banks in 10 African countries.

In 2016/17, most Western banks had terminated correspondent banking (CB) relationships with several African banks as a further sign of 'de-risking'. CB is critical in the global payments system by enabling cross-border transactions and access to credit lines for foreign trade, deposit taking and placements. However, PABs quickly filled the gap by establishing CB relationships with local affected banks – thus mitigating the impact of de-risking trend by Western groups.

There are two main factors underpinning the growth of PABs. First, new technology makes it possible to operate on a 'continental scale' whereby regional banks can design products and process data centrally, delivering services in places with no physical branches. For example, Ecobank's mobile app, which lets people open accounts on their phones, has attracted more than five million users since its launch in 2016. Secondly, rising intra-regional trade flows plus expansion of businesses into new SSA markets induced banks to follow their clients abroad. A study by US Boston Consulting Group found that top 30 African companies operate in an average of 16 countries, twice as many as a decade ago.

> "PABs are now leading players – overtaking Western rivals, which had dominated banking since the colonial era"
>
> MOIN SIDDIQI

Major pan-African Groups

The number of PABs has increased noticeably in recent years with ten indigenous groups dominating

Table: Major pan-African banks end financial reporting year 2018 (US$ millions)

Banking Groups	Country of headquarters	Total assets	Total capital	CAR (%)	Pre-tax profits	Group ROA %	Group ROE %	Loans to assets ratio (%)	Cost income ratio (%
Standard Bank Group	South Africa	147,808	9,752	6.6	3,082	2.1	31.6	54.4	51.8
FirstRand	South Africa	111,277	8,231	7.4	2,699	2.4	32.8	74.4	47.9
Nedbank Group	South Africa	72,544	5,109	7.0	1,313	1.8	25.7	72.0	54.4
Attijariwafa Bank	Morocco	53,284	4,031	7.5	1,045	1.9	25.9	69.6	43.0
Groupe Banques Populaire	Morocco	41,441	4,109	9.9	540	1.3	13.1	70.4	45.6
BMCE/Bank of Africa Group	Morocco	30,883	2,322	7.5	382	1.2	16.4	72.5	54.1
Ecobank Transnational	Togo	22,582	1,620	7.2	437	1.9	26.9	51.0	56.2
Zenith Bank	Nigeria	19,400	2,403	12.3	755	3.8	31.4	45.1	43.4
First Bank of Nigeria	Nigeria	18,138	745	4.1	212	1.1	28.4	N/A	N/A
Access Bank	Nigeria	16,137	1,535	9.5	336	2.1	21.8	44.9	56.9
United Bank for Africa	Nigeria	15,862	1,126	7.1	348	2.2	30.9	37.4	60.0
Guaranty Trust Bank	Nigeria	10,708	1,531	14.3	702	6.5	45.8	41.4	31.4
Kenya Commercial Bank	Kenya	7,013	1,079	15.3	332	4.7	30.7	65.8	44.3
Equity Bank	Kenya	5,630	772	13.7	279	4.9	36.1	53.3	45.5

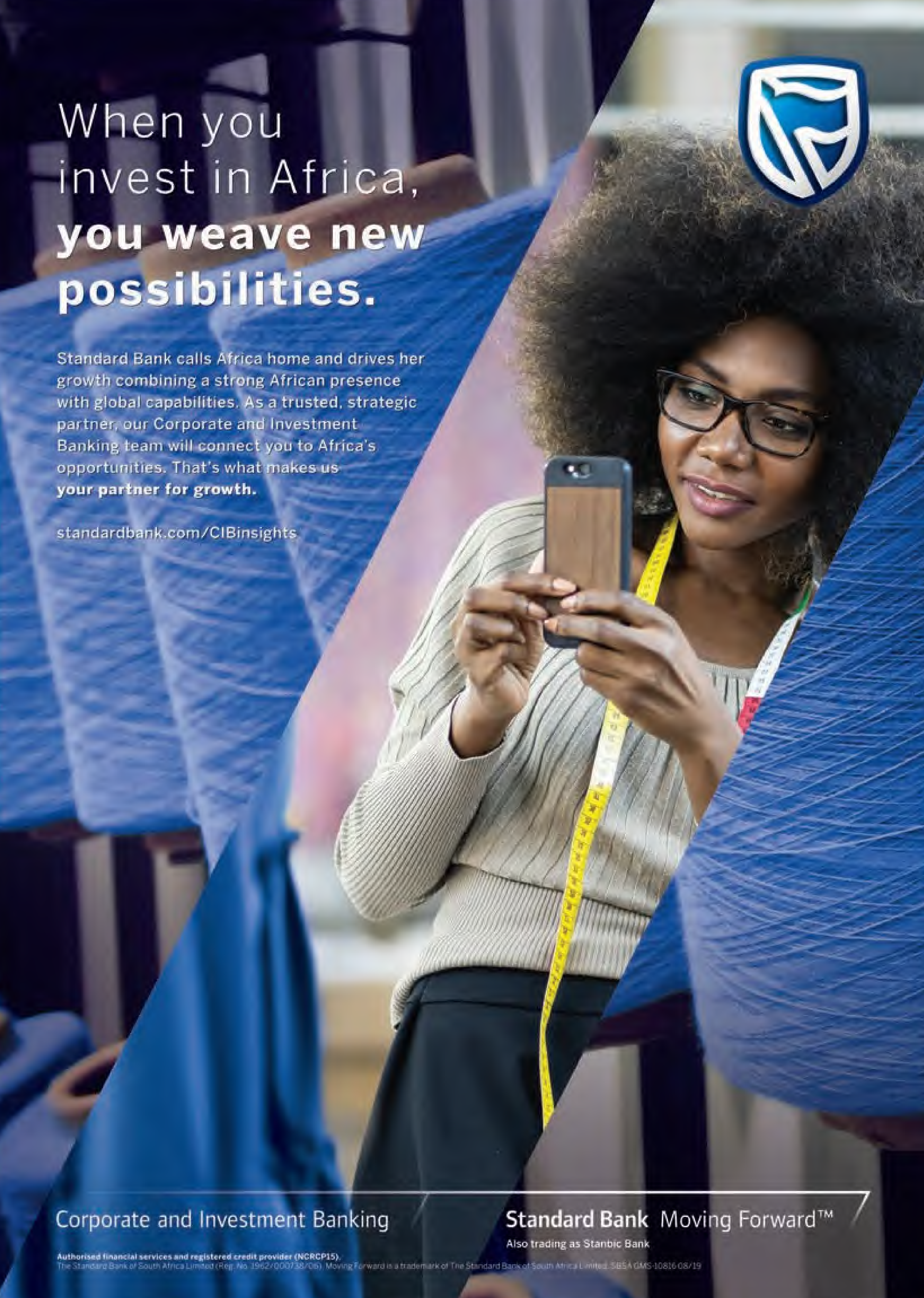
Assets = Cash & short-term funds, demand balances with other banks, loans/advances (business & personal lending), project-trade finance, short-term investments (Treasury Bills), equity holdings (including stakes in non-banking ventures), debt stocks and fixed assets.

Capital = Shareholders' equity or core "Tier-1" capital.

CAR = Capital-adequacy-ratio, a measure of underlying financial strength. ROA = Return on total assets deployed.

ROE = Return on equity (core capital). The health of a single bank is measured by annual returns on equity-assets.

Source: Consolidated Balance Sheets of the Groups



When you
invest in Africa,
you weave new
possibilities.
Standard Bank calls Africa home and drives her growth combining a strong African presence with global capabilities. As a trusted, strategic partner, our Corporate and Investment Banking team will connect you to Africa's opportunities. That's what makes us your partner for growth.
standardbank.com/CIBinsights
Corporate and Investment Banking
Standard Bank Moving Forward™
Also trading as Stanbic Bank
Authorised financial services and registered credit provider (NCRCP15).
The Standard Bank of South Africa Limited (Reg. No. 1962/000738/06). Moving Forward is a trademark of The Standard Bank of South Africa Limited. SBSA GMS-10816 08/19

African banking. The largest representation is from Nigeria (nine); Kenya (seven); South Africa (four); Morocco (three); and two each from Togo, Mauritius, Angola and Cameroon, respectively. Togo-based Ecobank Transnational has the highest geographical coverage (33 SSA countries), while Standard Bank (South Africa) remains the largest group by consolidated assets, with a presence in 20 countries (see table).

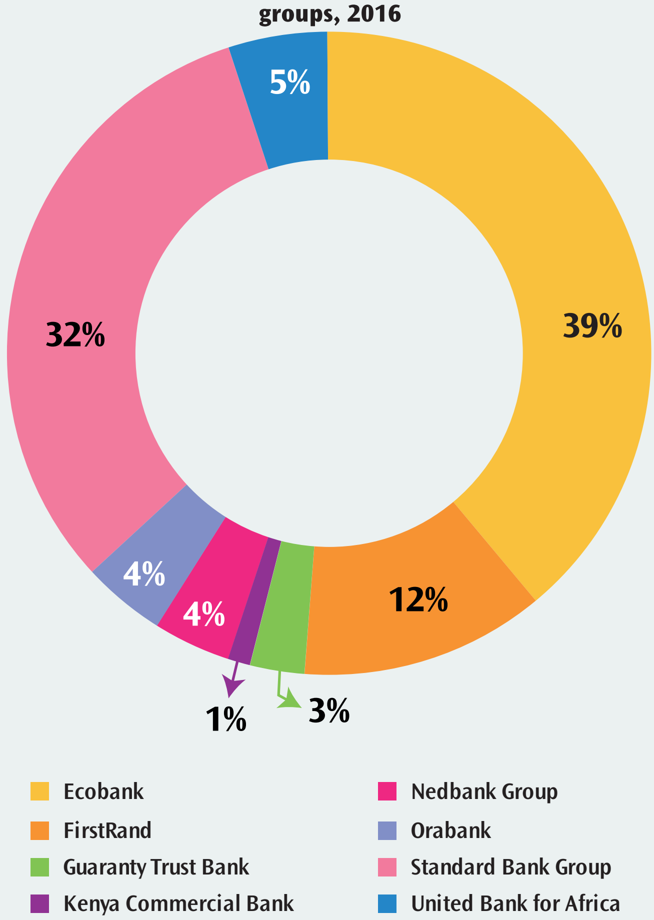
Other big names include Attijariwafa, BMCE/Bank of Africa (BOA) from Morocco operating in Francophone west and central Africa, Nigerian-owned United Bank for Africa (UBA) and FirstRand (SA). UBA wants to make half its profits from intra-African business by 2022. The newcomers on expansion drive are Logos-based Zenith Bank, Diamond Bank and Guaranty Trust Bank, Kenya Commercial Bank and Oragroup (Togo) owned by private equity firm Emerging Capital Partners. Since 2016, however, PABs expansion has stalled largely due to regional growth slowdown.

The subsidiaries of Ecobank, Standard Bank, Attijariwafa, and BMCE/BOA are systemically important in their host countries measured by deposit-and-asset shares. An International Monetary Fund study revealed that 14 PAB groups held one-tenth of total deposits in 33 SSA counties, with their asset share exceeding 7 per cent of gross domestic product in 22 countries by the end of 2015.

Overall, PABs are now far more important in SSA than long-established European and US banks. Kenyan banks have used their IT edge, notably mobile banking, to push into East Africa. Nigerian lenders (after consolidation in mid-2000s) have emerged heftier and more profitable, with capital to invest abroad. In West Africa, major PABs account for 40 per cent of deposits in most countries.

PABs have expanded mainly through subsidiaries, via acquisition of existing banks operating under the hosts' rules and regulations. Ecobank and Standard Bank have pursued such expansion strategy in recent years. Few others like UBA have set up new entities (i.e. greenfield investment). The number of regional subsidiaries of African banks has more than tripled. As of 2015, 14 PABs had a total of 169 subsidiaries across the continent, up from 53 in 2006 (IMF data).

Pie-chart: Investment share by pan-African banking groups, 2016



Source: IMF Working Paper, Drivers of Cross-Border Banking in sub-Saharan Africa, July 2019

Benefits of 'pan-Africanism'

The growth of PABs brings new opportunities and benefits to a continent where the financial sector remains relatively small and underdeveloped.

The IMF estimates that relative financial underdevelopment of SSA costs the region 1.5 percentage points of GDP growth per year or approximately US$20bn in 2016 prices. Their expansion has helped in regional economic integration and boosted competition and efficiency through greater economies of scale, as well as supporting financial inclusion. Generally, PABs are using their geographical reach to facilitate cross-border capital flows, such as trade financing and migrants' remittances, while injecting new technologies and managerial expertise to host banking sectors.

"More broadly, they can also have a positive effect through improving governance structures. In the African context of underdeveloped banking systems, the arrival of more better funded competitors can have a significant positive impact on host economies," noted IMF.

From 2000 to 2015, PABs have invested some US$6bn in SSA subsidiaries and provided syndicated and bilateral loans for infrastructure projects. Ecobank and Standard Bank accounted for more than two-thirds of total investment (see pie chart). The largest recipients were Nigeria (US$1.6bn), Kenya (US$800mn), Namibia (US$600mn) and Ghana (US$450mn), respectively.

PABs have provided clientele with new product-lines, IT/management systems and introduced global best practices in host authorities because South African, Moroccan, Togo and to a degree Nigerian and Kenyan banks apply capital-adequacy standards and accounting norms recommended by the Basel Committee and the International Accounting Standards Committee. This, in turn, contribute to financial stability through upgrades in the quality of supervision and regulation.

Big African players are also fostering financial inclusion by extending services to 'underbanked' i.e. people with low access to financial services.

Cross-border collaboration

Major PABs are encouraging regional integration and development, while spurring innovation/competition and in some cases have reduced costs, mostly in east Africa. They have also become lead arrangers for syndicated loans and project finance – filling the gap left by Western banks. But rapid expansion of cross-border banking carries some risks, cautioned the IMF. As PABs grow in reach and complexity, stronger supervision and enhanced cross-border cooperation are vital to prevent systemic risks and regional financial instability.

Therefore, regulators must guard against 'contagion' risk. An efficient financial infrastructure both on national and regional basis can help reap benefits of cross-border expansion of PABs. This includes well-functioning payment and settlement systems, credit data systems, as well as dispute resolution and consumer protection mechanisms.

According to a survey by PricewaterhouseCoopers, pan-African banking's success could inject US$490-950bn of additional credit, assuming SSA economies reach a level of financialisation like Mauritius and South Africa. ■

Dual-fuel power plant increases Benin's capacity by more than 50 per cent

The Maria Gleta power plant will supply the grid of Benin with 127MW of electrical output.

The Maria Gleta power plant near the city of Cotonou, was inaugurated by the Benin government and representatives of MAN Energy Solutions and BWSC.

The plant is now fully operational and will supply the grid of Benin with 127MW of electrical output. At the heart of the plant lie seven MAN 18V51/60DF gensets, which will mainly run on low-emission natural gas. The plant was built by a consortium featuring MAN Energy Solutions and BWSC.

"The Maria Gleta power plant increases Benin's capacity for electricity generation by more than 50 per cent. Our country now becomes more independent of energy imports," said Dona Jean-Claude Houssou, Minister for Energy of Benin. "Thus Maria Gleta provides the conditions for positive economic prospects for Benin. It is an essential part of our action plan 'Revealing Benin', centered around 45 flagship projects aimed at strengthening macroeconomic development, consolidating democracy and improving living environment for the people of Benin."

The Maria Gleta plant is planned to be expanded to a total capacity of 400MW later on as part of this programme. During the inauguration the facility was also visited by a delegation of energy secretaries from the neighbouring countries Burkina-Faso, Togo, Niger and by the general secretary of West Africa Power Pool (WAPP) emphasising the showcase character of the project for the region.

Recently, the government of Benin signed an agreement with Total, a leading LNG supplier, for the developement of a floating storage and regasification unit (FSRU) which will ensure the supply of the Maria Gleta plant with liquefied natural gas (LNG).

Waldemar Wiesner, head of Region MEA (Middle-East Africa), Power Plant Sales at MAN Energy Solutions, added, "We are very pleased that we are able to support Benin's ambitious growth plans with this project. Maria Gleta ensures a stable and independent power supply for Benin. The plant will mainly operate on natural gas keeping emissions at a low level, while ensuring fuel flexibility through its dual-fuel capability. This combination connects an environmentally friendly power generation with a secure supply at all time."

COULD AFDB DESERT PLAN SOLVE POWER CRISIS?

During a summit in Ouagadougou, Burkina Faso, G5 Sahel heads of state pledged their support to Desert to Power, an Africa Development Bank-led initiative, that aims to provide 10GW of electricity to 250 million people in the Sahel region by 2025.

"The African Development Bank is our bank and the private sector must be involved in this important initiative for our countries. I have no doubt that with technical leadership of the AfDB, we will be able to mobilise the necessary funds. Access to electricity is necessary for the economic development, prosperity and security of the G5 Sahel countries," said the G5 Sahel President Christian Kabore of Burkina Faso.

Critics, however, have said financing and the political unstablility of these countries could hinder the progression of this initiative, which is expected to cost at least US$150bn, more than the total annual infrastructure spend across Africa.

SOLAR POWER LIGHTS UP 200,000 HOUSEHOLDS IN MOZAMBIQUE

Fenix International, a subsidiary of ENGIE, opened its sixth market in Mozambique, where it expects to reach 200,000 households with clean energy and inclusive financial services within three years.

Launching sales in Mozambique is the latest step in Fenix's expansion. Headquartered in Kampala, the company has already connected 500,000 customers to solar power in Uganda, Zambia, Côte d'Ivoire, Benin, and Nigeria. Fenix has rapidly grown operations, enabling the company to scale off-grid energy and financial services across new markets, with Mozambique the fourth new market opened within the past year.

Luke Hodgkinson, managing director of Fenix Mozambique, said, "Mozambique has set an ambitious target with their ProEnergia initiative to reach 100 per cent of the population with electricity by 2030.

"The country represents an optimal market for off-grid solar products, with only 27 per cent of households currently connected to electricity and a highly distributed population. Fenix's operations here will focus on reaching those most in need of energy access, particularly districts in the North and people who are using expensive, polluting, and dangerous methods such as kerosene and candles to light their homes."

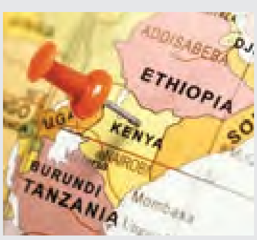
By replacing fossil fuel-powered lanterns, solar home systems allow off-grid customers to illuminate their homes with clean LED lights, as well as charge phones and run TVs.

Fenix's latest product, Fenix Power, is a GSM-enabled power system that enables the company to determine product usage and technical issues remotely, improving the customer experience. Fenix is the first PAYGo solar company in Mozambique to use these Internet of Things (IoT) technologies to reduce costs and bring high-quality, affordable technology to rural customers.

BRIEFS

Celebrating off-grid generation targets in East Africa

Image Credit: Adobe Stock

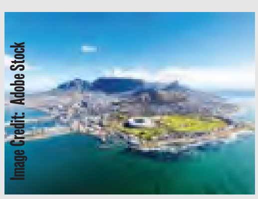


Kenya ministers and CEOs gathered at Future Energy East Africa.

The acting CEO of Kenya Power, Jared Otieno; the principal secretary of Kenya's Ministry of Energy, Dr Joseph Njoroge; and Rebecca Miano, CEO of KenGen, took part in the Future Energy East Africa conference on 17-18 September.

The 21st edition of the event focused on the enormous progress that has been made in the region in terms of access to energy and the increasingly important role of mini- and off-grid projects to meet targets.

Southern African Power Summit comes to Cape Town



Senior decision makers from the IPP and PPP communities will attend the power summit in Cape Town.

On 29-31 October, Cape Town, South Africa will be hosting the Southern African Power Summit, the region's number one Business to Business Power and Energy event, bringing together senior decision-makers from the IPP, PPP and National Power communities.

The entire installed generation capacity of Africa's 48 sub-Saharan countries is just 68 gigawatts, no more than Spain's. Up to one-quarter of that capacity is unavailable because of ageing plants.

Africa genset suppliers attracting customers

Demand for genset power solutions remains resilient in some of Africa's core emerging markets but getting closer to markets remains a persistent challenge. Martin Clark reports.

Demand for gensets in Africa is typically driven by a combination of factors, including economics and even history. The perennial under development of the continent's power industry means consumers and businesses have turned to genset providers to meet the energy gap.

For large firms that means the ability to maintain production – whether that's mining output or refrigerated storage – round the clock, irrespective of the performance of the national grid.

The problem becomes more acute in Africa's poorer economies, where the electricity supply may be erratic or even absent. Despite massive investment in power infrastructure in recent decades, the continent's electricity supply industry remains uneven and inadequate.

There are great imbalances, even among some of the continent's most powerful economies: South Africa's power output – the largest in Africa – dwarfs that of Nigeria, a country with more than three times as many people.

It means there has been a strong market for genset solutions of all shapes and sizes for many years right across Africa.

Leading players supplying the region include the likes of FG Wilson, Kohler-SDMO, Caterpillar and Cummins, although there are many others.

So far this year, a number of key markets– notably Nigeria, Egypt and those of Eastern Africa – have proved to be a rich stream of work for the industry.

In fact, business in the first six months of 2019 across all genset ranges (7.5-75 kVA; 75-375 kVA; 375-750 kVA; 750-2000 kVA; 2000+ kVA) was significantly up on the same period a year earlier (see Table 1).

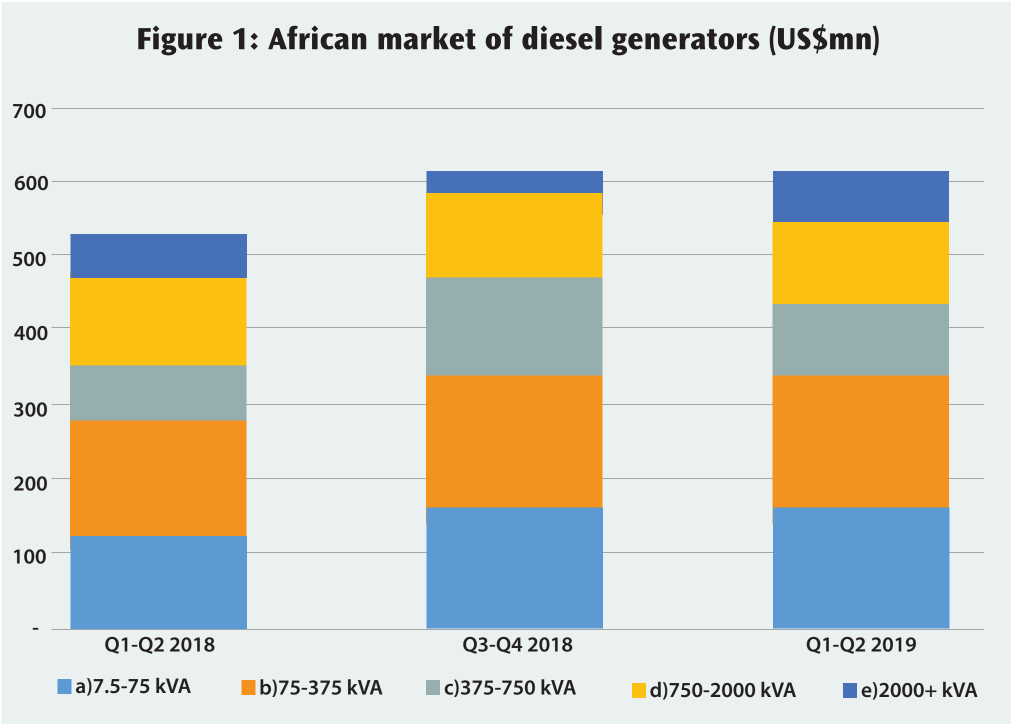


Image Credit: PowerGen Statistics

In general, those economies that flourished tended to see more activity as demand for energy services increased; conversely, prospects dimmed in struggling economies.

That does not tell the whole picture though.

In some of Africa's poorer markets there were still good opportunities given the weak grid-based energy supply. The nature of certain extractive industries, with miners and oil firms often operating in remote, off-grid areas, can also be a spur for business.

YorPower announced in July that it had dispatched a total of 10 diesel generators, along with service kits to a distributor in Conakry, Guinea. The 20ft container consisted of a 80kVA, 30kVA and 20kVA Perkins canopied diesel generator, as well as seven 20kVA open sets, all of which were sold with 2,000-hour service kits.

Guinea, a long-established mining country producing gold and bauxite, has provided plenty of work through the years for others too. Wärtsilä recently supplied a power plant extension to AngloGold Ashanti's gold mine in Siguiri.

> "The new facilities will allow us to support not only the Moroccan market but also the West African countries with whom we've been working for almost two decades"
>
> LYDIA GRACIA, EXECUTIVE DIRECTOR, HIMOINSA

Connecting to customers

Yet Africa remains a challenging market. Indeed, it is not a single market, but fifty-plus individual territories, all throwing up unique and complex challenges for manufacturers, distributors and suppliers keen to sell more kits, from currency fluctuations to logistics and language barriers.

Getting closer to customers in major markets remains one of the greatest tests for all players.

In one of North Africa's largest markets, Morocco, Himoinsa extended its presence in September opening what marks the company's third sales office on the continent.

FG Wilson is a major player in the African region.

Image Credit: FG Wilson

The Casablanca site includes a local technical team and a warehouse area for stacking gensets, lighting towers and spare parts.

Lydia Gracia, the company's executive director, called the Morocco opening a "strategic project" for Himoinsa, improving access not just in North Africa but West Africa as well.

"The new facilities will allow us to support not only the Moroccan market but also the West African countries with whom we have been working for almost two decades. The new facility will allow us to strengthen technical consultancy for each project, as well as to intensify service support," said Gracia.

Morocco itself is a strong market, with Himoinsa supplying many of the country's flagship projects including Tanger Med, the newly-built port located on the Moroccan side of the Straight of Gibraltar, 45 km from the city of Tangier. It also supplied new football stadiums such as the Stade Agadir and Stade Fez, with a capacity of around 45,000 spectators, as well as the new Casablanca Finance City Tower.

Others have taken steps to get closer to their customers too.

Perkins recently tied up a deal with a new distributor for West and Central Africa.

The agreement with Seco Power – part of the Secodi Group, which runs several Perkins distributor businesses in Europe – covers 21 countries from Morocco down to the Democratic Republic of Congo, but excludes a number of major territories including Nigeria and Ghana.

The intention is to combine the global prowess of the Perkins brand – now a part of the Caterpillar empire – with a local focus and customer care from teams with a detailed knowledge of individual markets and conditions.

Seco Power will provide direct support to customers across this vast area from three local branches located in the Côte d'Ivoire, Senegal and Cameroon. It will also provide support to other customers from an Africa-based technical help desk centre.

A further tier of trained and supported dealers will operate from multiple locations across the region supported by Seco Power, to help customers keep equipment running, wherever they choose to do business.

Other trends

While getting closer to customers has long been a priority for the main genset providers, it is not exactly business as usual given the many other challenges shaping the market.

That includes the general increase in options available for buyers, from new technology to clean energy solutions.

There is already evidence to suggest that, in some scenarios, hybrid renewable solutions are playing a role where traditional diesel gensets may have dominated, even in well-established niches like the mining sector.

Solar power and battery technology is also being widely deployed for very small demand, isolated deployments such as remote telecoms towers.

The emergence of other suppliers from Asia, notably China, competing both with and against traditional European firms has been another theme of the past decade or so.

Tide Power Technology, a leading Chinese genset manufacturer active in the African market, recently teamed up with Perkins for a project to supply power for a group of universities in Ethiopia.

Its solution was to install 12 Perkins-powered gensets to guarantee uninterrupted power to the various higher education establishments.

Based in Fuzhou, in China's Fujian province, Tide Power Technology has more than 10 years of collaboration with Perkins and its distributor, Elco Power.

Likewise, there is plenty of activity going on away from West and North Africa, as Tide Power's Ethiopian project illustrates.

Indeed, Eastern Africa is one of the regions to have shown strong momentum in the early months of 2019 in terms of overall sales, notably Kenya and Tanzania, growing by more than US$9mn (US$ 3.6mn for Kenya and US$ 5.6mn for Tanzania), mainly powerbands over 750 kVA, according to Powergen Statistics.

In Kenya, YorPower provided back-up power in the form of a 45kVA Perkins-powered generator, including installation, to a new high-end café and shop located in Loresho.

The café depends on reliable electricity to produce food and refreshments for its customers.

Nigeria market poised for growth

The Nigerian diesel genset market offers arguably the greatest opportunity for genset competitors. The market is projected to reach US$527.4mn by 2024, registering annual growth of 4.1 per cent in the forecast period, according to P&S Intelligence.

Image Credit: Himoinsa

The new subsidiary in Morocco has a qualified local human team, made up of sales, management and administrative profiles.

In a report, it states that demand is primarily driven by a high base power deficit, substantial transmission losses, and growing demand for electricity for residential, commercial, and industrial applications.

It said, "The country's power sector is riddled with issues such as inefficient operations, weak transmission and distribution network, and a huge demand-supply gap, with demand outstripping the domestic electricity production by a significant value."

According to industry experts, the country's electricity demand was more than 40,000 MW in 2018, whereas energy generated hovered around the 7,000 MW to 8,000 MW mark. "This clearly hints at the growing consumer dependence on diesel generator sets in the country," P&S Intelligence reported.

It added that government reforms may not be able to completely bridge the demand and supply gap in the near term, owing to inadequate grid infrastructure and a fast-rising population, which, in turn, would result in increased dependence on off-grid sources for meeting power requirements.

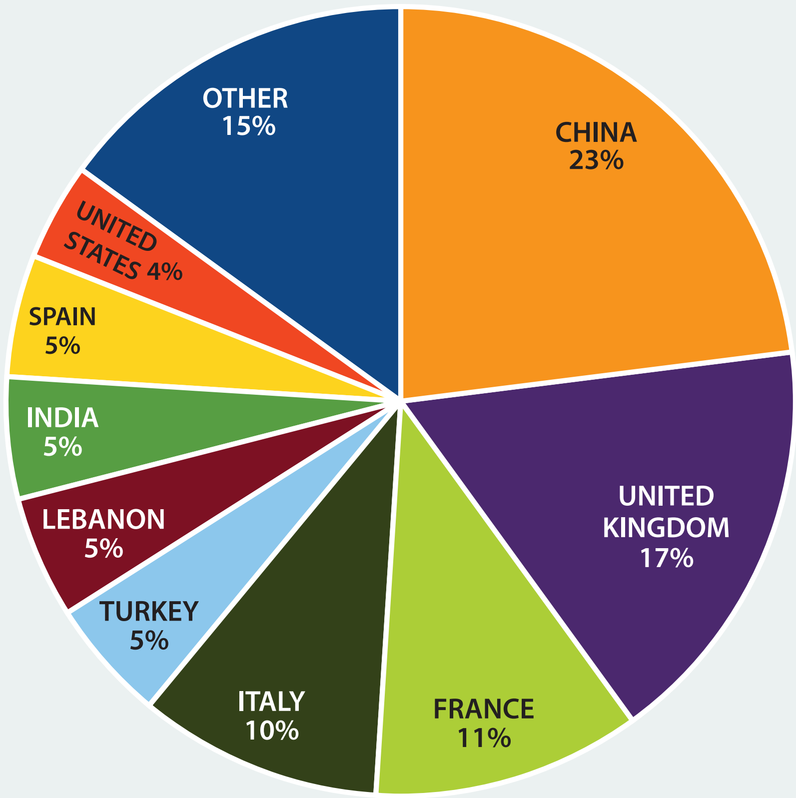
P&S Intelligence notes that 5 kVA–75 kVA gensets account for the largest market share in terms of sales volume. This is due to heavy demand in residential and commercial complexes, hotels, and other areas with low power requirements.

One future market driver could be the government's proposed Economic Recovery and Growth Plan, which is expected to attract investment into the manufacturing sector, and could add impetus to further diesel genset adoption.

The telecoms sector is also driving demand for smaller scale facilities, accounting for more than 12 per cent of sales volumes in the commercial demand for diesel gensets in 2018. This category is expected to register annual growth of 6.3 per cent in terms of revenue, the analysis shows. Telecom towers in Nigeria are typically in the 27kVA–35 kVA capacity range.

As well as major players like Caterpillar, Cummins and YorPower, other major suppliers to the high-growth Nigerian market include Jubaili Bros., Denyo Co. Ltd., Honda Manufacturing (Nigeria) Limited, General Electric Company, Kirloskar Oil Engines Limited, and SUMEC Machinery and Electric Co. Ltd. (a subsidiary of SUMEC Group Corporation).

Figure 2: African imports by trading partner (HY 2019)



PowerGen Statistics overview

Nigeria, Egypt and Eastern African markets have helped the African market of diesel generating sets maintain its level in first half 2019.

The African generator market has been flat in the first half of 2019 compared to Q3-Q4 2018, reaching US$610mn, though still some way up compared to the first six months of 2018. While some territories are on the right track (Eastern Africa, Nigeria, Egypt) some other countries suffer from political and economic instability such as Algeria.

Egyptian and Nigerian markets rose in the first half of 2019, and now account for 36 per cent of the total African market. In Nigeria, the combined increase in oil production and prices, as well as the weak power grid, have had a beneficial effect on the market. For its part, Egypt continues its growth with strong foreign investment and a booming construction sector (groups <750 kVA).

While these two territories currently are the biggest generator importers and represent 23 per cent of the groups imported into Africa, they are also two of the main generator assemblers of the continent (1st Nigeria, 2nd South Africa, 3rd Egypt). Nigeria is home to the production sites of the world's leading manufacturers wanting to optimise import tariffs (CAT, Cummins, KOHLER-SDMO, FG Wilson, but also Lebanese manufacturers). Egypt has rather national manufacturers well established in local markets (army and construction).

One of the strongest contraction concerns was Algeria, which saw its market fall by 20 per cent (reaching US$38mn), due to the political instability of the moment. Whereas retail and industry projects had grown in the last few years, the 375-2000 kVA powerband largely suffered from the current instability climate in the first part of 2019, down by 50 per cent versus the previous period.

The African continent is also still harboring great opportunities, such as the 16MW diesel generators imported by Niger for the African Union summit in June 2019.

With US$106mn imports, China is still the first trading partner of Africa. This share is particularly strong for the generators below 200 kVA as some global manufacturers assemble and export the small generators from China, as well as the Chinese local manufacturers have stronger market share in this segment.

UK and France have always been strong trading partners with Africa, but their share has decreased over the years because of the strong competition with Italian and Turkish generators that have gained significant market share in North Africa (see Figure 2). ■

Powerful growth in East Africa

Generator set manufacturer FG Wilson has been part of the economic landscape of East Africa for over forty years and has witnessed many changes during that time. Graham Scandrett, FG Wilson area manager for Africa and Middle East picks up the thread.

"In our industry, we see many markets where demand is still lagging behind where it was in the last worldwide boom year of 2008, but we believe the East African market is about 40 per cent larger than it was in 2008."

So what has driven this? FG Wilson see many of the same kind of customers today but the scope of their needs has increased. Scandrett says, "Ten years ago, if electric power was down, many businesses could still function, at least for a short time. Now in our online world, it's almost impossible. Many businesses can't take the risk of even short interruptions of electric power. Much of that industry growth has come from this digitalisation effect."

FG Wilson like many European manufacturers has located more of their production to China.

Image Credit: FG Wilson

Another factor in play has been the sourcing of those generator sets. Scandrett says, "We closely monitor market and trade statistics and the last ten years have seen a major switch in where generator sets for East Africa are made. In 2008, around 80 per cent came from Europe, 20 per cent from China. Today only 30 per cent come from Europe, 60 per cent from China and most of the rest imported via the Middle East or other African countries."

Some of that change has been driven by generator sets arriving on the back of Chinese investment in the region and some has come from European manufacturers, like FG Wilson, locating more of their production in their own facilities in China.

Scandrett sees this as a logical step. "Components, particularly engines, make up a big element in a generator set package. As soon as established Western engine brands began locating more of their production in China, the case for assembling there became very compelling. It makes no sense to ship major components halfway round the world and then ship them halfway round the world back to customers as finished products. Now our most modern, state-of-the-art facility in the world is located in Tianjin, China, and it's capable of manufacturing almost our entire range. With FG Wilson, our China-made products are made to the same design, with the same components using the same processes and supported with the same global parts infrastructure as all our European-made products. And, of course, many other industries work the same way: look at the phone in your pocket or the computer on your desk. Most likely these were made in China."

The third big change which Scandrett notices, has been growing expectations of support from customers, especially as the cost of loss of power has grown for businesses.

"In the last ten years, between us and our dealers, we've invested hugely in this area. We reckon we have around $30mn of parts inventory at our dealers around the world, backed up by our UK-based parts warehouse stocking 11,500 individual parts and shipping three million parts a year. It means automotive industry levels of support."

FG Wilson's dealer in Tanzania, Merrywater, who have represented FG Wilson for 25 years, embodies this approach. Based in Dar-es-Salaam, Merrywater offers the entire FG Wilson range of generator sets. All service employees are formally trained by FG Wilson's UK-based team and the dealer offers a full range of aftermarket services including 24 hour call-out.

Henrik Nielsen, who manages the Merrywater Power Division, sees this as a critical element of Merrywater's business.

He says, "We're seeing more of our customers taking great interest in service contracts. If you don't want the risk of downtime and want to manage and plan costs, this makes a lot of sense with labour and transport costs covered, lower spare part prices, reduced rates for temporary replacement units and fixed workshop repair prices."

And the next ten years?

Scandrett sees generator sets as playing a similar role, co-existing alongside other power generation technologies.

"Interest in solar power generation has grown and solar panels are getting more efficient. But you need a very large surface area to install a solar plant compared to the space occupied by a generator set. We see a lot of people who ask about solar power generation but what they really need is a generator set. We can see generator sets living alongside renewables and battery storage as part of a balanced package. Maybe we can pick up the discussion again in 2029!" ■

Image Credit: Adobe Stock

Powering the region

Major transmission and other electricity projects currently being rolled out in Zambia. Nawa Mutumweno reports.

Energy efficiency is a major component of any economy and is a building block for sustainable development.

It is in recognition of this that the Southern African Power Pool (SAPP) is undertaking a joint impact study with the Eastern Africa Power Pool (EAPP) to facilitate effective and efficient connection of the Zambia-Tanzania-Kenya (ZTK) interconnector transmission project.

This is one of the initiatives that has been earmarked to 'light up' the region and ensure sustainability of power supply and trade in the region.

"We are jointly carrying out an impact study to ensure that there is smooth connection of the two power pools. This will unlock trade with markets outside of SAPP," said SAPP management committee chairperson, Ernest Sipho Mkhonta.

SAPP has finalised the pool plan which "shows benefits that can be accrued through regional integration compared to implementing projects on a national self-sufficiency basis. The SAPP will ensure coordinated planning in the implementation of the projects so that there is no over- or under-investment.

Belonging to a power pool is highly beneficial, a case in point in Zambia which has been ravaged by power shortages from 2015, caused by low levels in the main reservoirs.

This development caused shocks in the economy. However, the situation was ameliorated by importing power from some utilities in the region.

Zambia and 11 other countries in the region belong to SAPP, an integration of Southern African national power utilities formed to enhance regional electricity trading for regional integration and climate change mitigation.

Its essence is to enable the importation and exportation of power in the region and to support each other in times of emergency deficits.

According to the Zambian Ministry of Energy, around US$70mn is required to finance the construction of the Kasama-Nakonde transmission line to link Zambia to the Eastern Africa Power Pool. This line is part of the Zambia-Tanzania-Kenya project, which is critical to facilitating trade in electricity in the region and to promote power systems stability.

> "We are jointly carrying out an impact study to ensure there is smooth connection of two power pools"
>
> **ERNEST SIPHO MKHONTA, SAPP MANAGEMENT COMMITTEE CHAIRPERSON**

"We have completed the construction of the transmission line from Pensulo to Kasama. There is a lot of interest from our friends in Tanzania and Kenya to have this project developed to promote export of power from Zambia," Ministry of Energy officials said.

"ZTK benefits are multifaceted as it will simultaneously connect the Eastern Africa Power Pool and Southern African Power Pool for the first time, creating the largest power pool on the continent and will be an essential component of the North-South Power Corridor."

The project covers the construction of a transmission line to connect the Zambian grid to Kenya via Tanzania, covering a distance of 2200 kilometres.

It will be constructed as a bi-directional 400 megawatts double circuit 400 kilowatts (kV) power transmission line from Kabwe in Zambia to Isinya in Kenya.

On the Tanzanian side, a 400kV line from Mbeya to Iringa will provide the strong path for power to be delivered to the northern load centres while on Kenya's side, another 400kV line from Singida onwards to Arusha will be required to deliver power to the Arusha load centre as well as transmit power to Isinya.

The project is adequately tailored to stimulate industrial development, increase employment, access to energy, thus helping reduce poverty on the continent.

Southern African Development Community (SADC) values energy efficiency and renewable energy as evidenced by the establishment of the SADC Centre for Renewable Energy Efficiency (SACREE) in Namibia in 2016.

"I am happy to report that our market is growing and in 2017-18 financial year, the financial turnover that was exchanged on the SAPP competitive market, as of January 2018, is US$96mn compared to 2016-17's $76mn," Mkhonta explained.

The competitive market share had also grown from 11 per cent in 2016-17 to 24 per cent in 2017-18.

It has been emphasised in recent times that there is need for the development of new projects in line with the region's thrust for industrialisation.

Apart from the ZTK interconnector, Zambia is developing a number of other projects to enhance electricity generation, promote trade, boost power security and promote regional integration. These include: Zambia-Democratic Republic of Congo (330kV); 220kV Zambia-Mozambique; Zambia-Malawi; and the Zimbabwe-Zambia-Botswana-Namibia (ZIZABONA).

ZIZABONA, the multi-million dollar project, sprung from an Inter-Government Memorandum of Understanding (IGMOU) signed by the four nations on behalf of their national power companies, namely Zimbabwe's ZESA Holdings, Zesco (Zambia), Botswana Power Corporation and Namibia's NamPower. It will involve constructing interconnectors for increased cross-border power trade in the region. The project is made up of three components.

The scope of the works encompasses the construction of a 115km of 400kV transmission line from Hwange in Zimbabwe through Victoria Falls Town to Livingstone's 330/220kV substation in Zambia; construction of 231 km of 330kV line from the substation to Zambezi sub-station at Katima Mulilo in Namibia; and construction of a 59 km long 400kV line from Victoria Falls to Pandamatenga in Botswana.

"The cost of the project is expected to be about US$150mn and the operation will be at 330kV," said Hazel Zulu, Zesco's spokesperson.

This project will increase the four countries' electricity export potential which is the main purpose of cross-border interconnectors, and enhance security of supply. ■

ENERGY VAULT CLOSES SERIES B FUNDING WITH US$110MN INVESTMENT SOFTBANK VISION FUND

Energy Vault, the creator of renewable energy storage products that are transforming the world's approach to utility-scale energy storage, has completed a US$110mn Series B funding round. The investment for the round was made by SoftBank Vision Fund (Vision Fund) in its first investment in energy storage technology. Energy Vault will use the funds to accelerate global deployment of its technology, which – for the first time – enables renewables to deliver baseload power for less than the cost of fossil fuels 24 hours a day. As part of the investment, Andreas Hansson, Partner for SoftBank Investment Advisers, will join the Energy Vault board of directors.

Energy Vault's technology was inspired by pumped hydro plants that rely on the power of gravity and the movement of water to store and discharge electricity. The company's solution is based on the fundamentals of physics and mechanical engineering used in those plants, but replaces water with bricks through the use of low-cost materials and material science.

Image Credit: Energy Vault

New financing will accelerate growth of transformative utility-scale energy storage technology.

The bricks, each weighing 35 metric tons, are combined with Energy Vault's proprietary system software to operate a newly designed crane. The software autonomously orchestrates the energy storage tower and electricity charge/discharge utilising predictive intelligence and a unique stack of proprietary algorithms that account for a variety of factors, including energy supply and demand volatility, grid stability, weather elements and other variables. As a result, the Energy Vault tower can deliver all the benefits of a large scale pumped hydro storage system, but at a much lower levelised cost, higher roundtrip efficiency and without the requirement for specific land topography and negative environmental impacts.

COMMERCIAL FEATURE: LOSS OF NEUTRAL

A broken neutral is a relatively common but potentially life-threatening electrical fault that can affect households and businesses.

Power flows in and out of your premise from a distribution network, entering via the active cable and leaving via the neutral cable. If there is no neutral, there will be an influx of voltage entering your premise, resulting in over voltage and a possible life-threatening situation. Loss of neutral results in equipment being over heated, damaged and sometimes non-fixable. Replacing electronic equipment can be very expensive.

What causes loss of neutral?

Loss of neutral can be caused by several ways. Some of the most common causes are:

- Weather - bad weather such as storms and lightning can cause power problems.
- Accidents - unpredictable accidents such as a tree falling on the wires can result in loss of neutral.
- Stolen copper wires - While there is blackout there is no electricity running through wires, this is an easy opportunity for copper wires to be stolen and sold for money.
- Overhead wires - Overhead wires are easily damaged and are easily accessible to be stolen.

Where is loss of neutral common?

Many African countries are a victim of loss of neutral, especially South Africa. Eskom is struggling to generate enough electricity to meet needs, and has re-introduced a byzantine system of rotating outages known as load-shedding.

The impact of loss of neutral

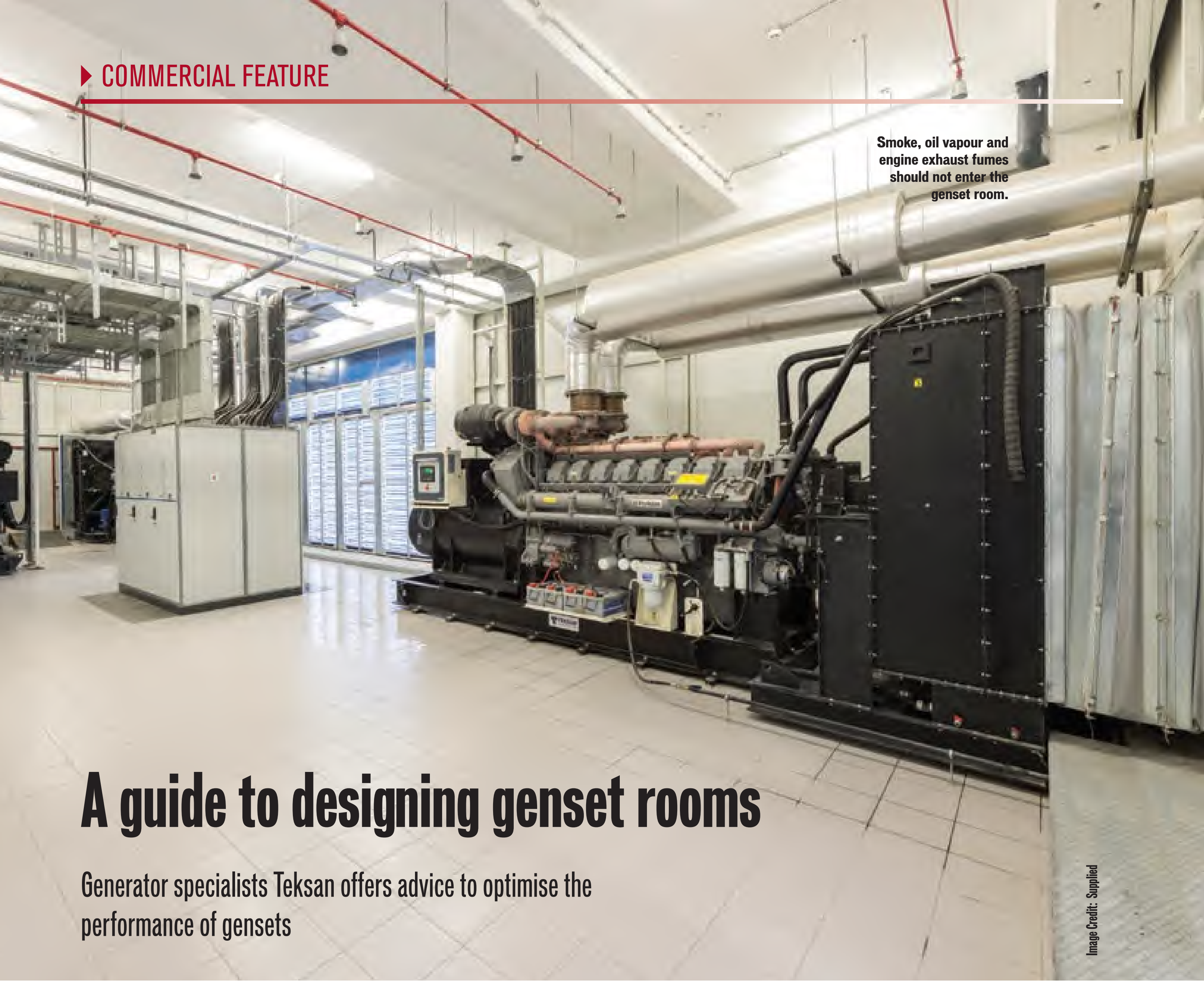
In the event of loss of neutral, the single-phase voltage will rise to the three-phase level subjecting your equipment to >400V instead of 230V. This results in over voltage and can be catastrophic for your appliance. Any electronic appliance connected to the wiring will be damaged due to overheating.

If there are problems with the neutral line, electricity may travel through a different path. This may be via water pipes, stoves and metal taps or any other conductor of electricity. This can be dangerous, and you may suffer a serious electric shock if you touch something where electricity is present.

Solution to loss of neutral

To protect against loss of neutral, the Sollatek AVS30 can protect against temporary over voltage of 400V (TOV400). It will protect against high and low voltage, brown-outs, power back surges and voltage dips. The AVS30 will disconnect the power when it is bad and reconnect automatically on return of normal power which protects against short- and long-term damage to ensure longevity of your appliance. Reconnection takes place after a start-up delay protecting against frequent fluctuations.

For more information visit www.sollatek.com/products/avs30/



Smoke, oil vapour and engine exhaust fumes should not enter the genset room.

A guide to designing genset rooms

Generator specialists Teksan offers advice to optimise the performance of gensets

Image Credit: Supplied

Whatever the type of building – be it a hospital, home, data centre, military facility or factory – reliable power is essential for smooth operations. When it is time to invest in a genset, the design of the space where it is to be positioned and operated is absolutely crucial for hassle-free operations.

Space allocation issues do arise with large power gensets. We recommend the design of generator rooms be considered right from the beginning in the building design process and their design should be carried out in consultation with experts, to ensure smooth operations.

Genset Room

The integrity of the genset and its equipment should be considered during the design phase. Its design should comply with the local fire protection regulations.

The generator room should be clean, dry, well-lit, well-ventilated and not too hot; with a leak-proof floor. The floor and base of the room should be designed taking into account the static and dynamic weight of the genset.

Smoke, oil vapour and engine exhaust fumes should not enter the room. Insulating materials used in the room should be non-flammable or flame retardant.

Room Layout

Door width and height should allow easy access for all equipment to be moved into the room. The equipment – such as fuel tank, silencer and so on – should be positioned close to the genset to prevent pressure losses.

The control panel should be positioned correctly for easy use, with sufficient space available for maintenance.

The room should have an emergency exit, kept free of any obstructions, such as cable trays or fuel pipes, which can hinder building evacuations.

There should be three-phase/single-phase sockets, water lines and possibly air lines available in the room for ease of maintenance and operation.

If the daily fuel tank of the generator is of external type, the fuel piping should be fixed up to the genset and the connection from this fixed installation to the engine should be made with a flexible fuel hose, so that the engine vibration can not be transmitted to the installation. We recommend the fuel system to be installed via a duct through the ground.

Power and control cables should also be installed in a separate duct. Since the genset will oscillate on the horizontal axis in case of start, first step loading and emergency stop, it is recommended that the power cable should be connected by leaving a certain amount of clearance.

Ventilation

Proper ventilation improves the life-cycle of the genset and provides a comfortable environment for maintenance and operations personnel.

In the genset room, right after the start, an air circulation begins due to the radiator fan, fresh air enters from the vent located behind the alternator. That air passes over the engine and the alternator, cools the engine body to a certain degree, and the heated air is discharged into the atmosphere through the hot air outlet located in front of the radiator.

For efficient ventilation, the air inlet/outlet opening should be of suitable dimensions. Windows should be louvered to protect the air outlets, and fins should be sized so that air circulation is not affected. Otherwise, the recurring back-pressure can cause the genset to overheat.

A duct should be used between the radiator and the air discharge opening, with the connection insulated with canvas to prevent genset vibrations from being conducted to the building.

The engine crankcase ventilation should be connected to the front of the radiator via a hose, so that oil vapour can be discharged easily to the outside. Precautions should be taken so that rain water does not enter the crankcase ventilation line. Automatic louver systems should be used in applications with gaseous fire-extinguishing systems.

Fuel System

The fuel tank and genset should be preferably positioned at the same level, and in compliance with fire codes. It should be installed in a concrete or metal bund and in a well ventilated space, taking care that the fuel piping is installed away from hot zones. Black steel pipes should be used in fuel systems. Galvanised zinc or reactive metal pipes should not be used, in case impurities clog the fuel filter.

Warning labels must be assigned stating that no sparks, flames or smoking is allowed. For cold weather places, heaters should be used for fuel systems and tanks and pipes insulated.

Filling of the fuel tank should be considered and designed during the room design process.

Exhaust System

The exhaust system (silencer and pipes) is installed to reduce engine noise and to direct toxic exhaust gases to appropriate areas, away from habitation, as they are a health and safety hazard. The exhaust system should consist of flexible compensator, silencer and pipes that absorb vibration and expansion. Exhaust pipe elbows and fittings should be designed to expansions due to temperature.

When designing the exhaust system, the main objective should be to avoid back-pressure. This can be done by ensuring that the pipe diameter is of the correct diameter and the pipe takes the shortest, straightest route.

A rain cap actuated via exhaust pressure should be used for vertical exhaust pipes.

The pipe and silencer should be insulated so that the exhaust temperature doesn't increase ambient temperature and affect the genset's performance.

Where space constraints will not allow the exhaust silencer to be suspended from the ceiling, an exhaust stand can be used. ■

> "We recommend the design of generator rooms be considered right from the beginning in the building design"
>
> **TEKSAN**

www.teksan.com

A solar hybrid power plant at Bayero-University

Nigeria: The largest off-grid solar hybrid power plant in Africa by METKA West Africa

MYTILINEOS' subsidiary METKA Power West Africa has successfully commissioned the largest off-grid solar hybrid power plant in Africa, with a total installed capacity of 7.1MW, in the context of the Energising Education Program of REA.

The project consists of full EPC services for the power generation plant, street lighting and a training centre, as well as operation and maintenance services. The university will be powered by a hybrid power plant utilising renewable energy sources integrated with energy storage and diesel generation as back-up, enabling reliable power supply for the university totally autonomously from the grid.

The commissioning of the solar hybrid project for Bayero University in Kano was held in a special ceremony that took place on 3 September , by professor Yemi Osinbajo, San, Gcon, Vice President of the Federal Republic of Nigeria.

The plant will provide electricity for about 55,815 students and 3,077 staff of the university, as well as power 2,850 streetlights. Also commissioned was a world-class renewables training centre.

With this innovative initiative of the Federal Government of Nigeria, implemented by the Rural Electrification Agency, uninterrupted power supply will become the reality for hundreds of students and faculty members and will set high standards for energy safety in the whole continent.

As the director of METKA West Africa Vangelis Kamaris stated, "We are here to stay and will continue to support Nigeria in the development of the Electricity market until the country has a stable and reliable power supply." ■

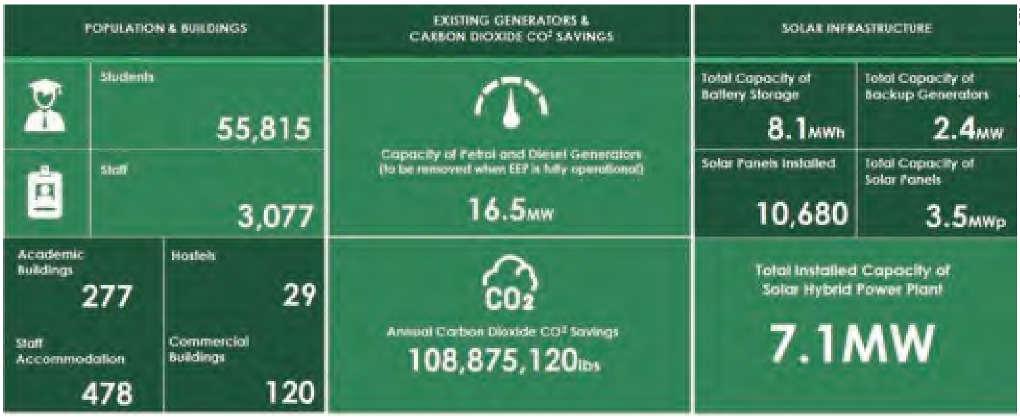


Image Credit: REA

METKA is the EPC & Infrastructure business unit of MYTILINEOS S.A., a leading Greek industrial company active in Metallurgy, Power & Gas and EPC & Infrastructure Projects. With a consolidated turnover in excess of US$2bn, MYTILINEOS strives for constant business excellence, balancing economic growth and sustainable development.

It undertakes the construction of large-scale turn-key power plant projects from design and procurement to construction and commissioning. These power plants include thermal power generation, large scale photovoltaic and hybrid power technologies.

Project portfolio is over 15GW with successful projects across Europe, Middle East and Africa. In Africa, METKA has projects in Algeria, Ghana, Tunisia, Uganda and Nigeria.

Kenya to construct first hybrid power plant in Africa

More than 200,000 households will have electricity thanks to the new hybrid plant.

The continent's first hybrid power plant will be built in Kenya following the signing of a US$145mn deal.

KenInvest, Meru County Government and global renewable energy developers Windlab and Eurus Energy finalised the agreement at the 7th Tokyo International Conference on African Development (TICAD) in Yokohama, Japan.

The plant will provide up to 80MW of clean, sustainable renewable energy, including 20 wind turbines and more than 40,000 solar panels.

Construction work is due to start in 2021 and will give more than 200,000 households access to electricity.

The Meru County Government, through the Meru County Investment and Development Corporation (MCIDC) will partially own the project when it comes into operation, according to local media reports.

MCIDC acting managing director Samwel Odhiambo said, "Signing the MoU here in Japan is a major milestone for the project. We are looking forward to hosting Africa's first hybrid renewable energy facility in our county."

Windlab has delivered renewable energy projects across the world. It includes the development of the world's first utility-scale hybrid renewable energy project with a battery storage system, the Kennedy Energy Park in Australia, which is co-owned by Eurus Energy.

"We are excited to bring world-leading innovation in the renewable energy sector and project development expertise to Meru County, Kenya," said Windlab's global chief executive Roger Price.

Eurus Energy CEO Hideyuki Inazumi, said, "Previous TICAD events have resulted in a number of highly successful Japanese-African ventures, and we intend to use this opportunity to strengthen our commitment to working with Windlab on world-leading renewable energy projects across East Africa. The flagship Meru County Energy Project will be one of our first projects in the region."

KenInvest managing director Dr Moses Ikiara said the project would boost manufacturing in the country.

"As Kenya moves to implement the medium-term Big Four agenda, promotion of predictable and sustainable renewable energy is key to guarantee successful realisation of the manufacturing pillar. We are excited to welcome Windlab and Eurus Energy to invest in Meru, and shall offer them all the support required to deliver the project." he said, adding that the government in partnership with the World Bank will set up a US$45mn fund for solar and clean cooking solutions.

Windlab Africa is currently developing wind power projects in Ethiopia,Tanzania, Zambia, Uganda, Rwanda, Burundi and Malawi, totaling 1,650MW, and from now on will work on this in partnership with Eurus Group.

SUPPORTING INFRASTRUCTURE DEVELOPMENT IN SOMALILAND

The government of Somaliland signed an agreement with the Netherlands and the UK to support the implementation of Phase II of the Somaliland Development Fund (SDF2) 2018-2022 programme, which aims to improve the lives of local people through the construction of critical infrastructure, such as roads, water systems and agricultural facilities.

The US$31mn (£25mn) SDF2 fund will be aligned to Somaliland's National Development Plan II (NDPII). It will build on the original SDF (2013-2018) programme and help build capacity within Somaliland's institutions.

The UK and Somaliland also signed a renewed Memorandum of Understanding to support the implementation of the Energy Security and Resource Efficiency in Somaliland (ESRES) Programme that aims to provide a clean, affordable renewable energy boost in Somaliland.

The agreements were signed by President Bihi and Damon Bristow, the head of office for the UK's Department of International Development (DFID) in Somalia. Also present at the signing ceremony was the British ambassador, Ben Fender, and the head of the British office in Hargeisa, Stuart Brown.

Speaking after the signing ceremony at the Presidential Palace in Hargeisa, Bristow said, "The UK is committed to supporting the people of Somaliland. We recognise the efforts being made to improve institutions and to provide access to basic services for local people."

"SDF 2 will ensure that ordinary people across Somaliland will benefit from improved services by supporting the growth of Somaliland's economy.

"ESRES will address the high costs of electricity in Somaliland and help promote green growth and poverty reduction by increasing access to more affordable and reliable renewable energy services."

While in Hargeisa, Damon visited the Hargeisa Water Agency which SDF is supporting to supply clean water to the people of Hargeisa. He also visited the Somaliland Roads Development Authority (RDA) to discuss the UK's investment in roads and supporting the RDA's capacity to deliver on quality and safeguarding standards.

Somaliland became independent in 1991.

Building Africa's future

A rise in competition – and imports – in the cement and mortar products segment points to a generally robust construction market. Martin Clark reports.

Demand for construction materials is typically regarded as a good barometer for industry activity. Investment in new production is another good sign.

Sika recently expanded its presence in West Africa with a new mortar facility in Cameroon.

The September move follows the establishment of the firm's Cameroon subsidiary in 2016 and the opening of a concrete admixture plant in 2017.

Sika said it plans to use its new mortar products factory, located in Douala, to expand its product portfolio and supply customers in Cameroon's construction market with locally manufactured products.

The country's building industry is developing strongly, supported by new spending in infrastructure and housing.

Major infrastructure projects to be built with Sika products already include sports stadiums, the Douala Grand Mall and Business Park Project, and facilities for water treatment and the supply of drinking water across the country.

According to forecasts, Cameroon's construction industry is expected to grow by 8.4 per cent in 2019, with annual growth averaging 7.4 per cent until 2028.

Ivo Schädler, Sika's regional manager for Europe, Africa and the Middle East (EMEA), said the new mortar facility underscores the company's Africa ambitions.

"We are continually expanding our business on the African continent and are recording the strongest growth rates in the EMEA region."

In total, Sika now has 22 factories dotted around the continent. The current business year has already seen investments in new facilities in Egypt and Senegal.

Sika has commissioned a new mortar factory in Cameroon.

Image Credit: Sika Group

Schädler said these investments are underpinned by strong sales.

"Over the past four years, we have increased sales by an average of 22 per cent each year. Our investments in expansion will create the basis for further market penetration in Africa, where the boom in the construction industry is being driven by high population growth, combined with urbanisation trends and megacity developments."

Nigeria cement market

Nigeria's Dangote Cement has played a major role in facilitating this construction growth, both in its home market and, increasingly, elsewhere, with the roll-out of new production plants.

It highlighted the emergence of greater competition in its half-year results for the first six months of 2019, which pushed its Nigerian volumes down 2.8 per cent to 7.6 million tonnes (Mt) during the period, though there were other causes too.

"Group sales volumes were only slightly down on last year, and this was a solid performance against the impact of delayed elections and increased competition from new capacity in Nigeria, as well as operational and economic challenges in key territories such as Ethiopia and South Africa," said Joe Makoju, group chief executive.

Other individual markets where Dangote Cement has broken into performed better.

"We saw a stronger performance from Tanzania, which is now running on gas turbines, and also from Senegal, where our sales volumes are more than 100 per cent of our rated capacity."

Dangote Cement is Africa's leading cement producer with nearly 46Mta capacity across the continent – the bulk of it (29.25Mta) in Nigeria.

Through recent investments, it has eliminated Nigeria's dependence on imports, turning the country into a net exporter of cement to neighbouring countries.

It also has operations in Cameroon (1.5Mta clinker grinding), Congo (1.5Mta), Ghana (1.5Mta import), Ethiopia (2.5Mta), Senegal (1.5Mta), Sierra Leone (0.5Mta import), South Africa (2.8Mta), Tanzania (3.0Mta) and Zambia (1.5Mta).

> "We are continually expanding our business on the African continent"
>
> IVO SCHÄDLER, SIKA'S REGIONAL MANAGER FOR EMEA

South Africa's imports woes

While Nigeria has emerged as a net exporter, in South Africa, the continent's largest economy, low-cost imports are causing something of a headache.

So much so that The Concrete Institute (TCI) is calling for an investigation into the import surge, which is undercutting local industry prices by as much as 45 per cent.

It has asked for tariffs to be applied to the imports, which are coming mostly from Vietnam and China, and are now at their highest level in several years.

The country's largest cement producer PPC, which has a total production of 11.6Mta across the region, reported "muted growth" in its 2019 annual statement.

It cited weak demand and a lack of construction activity in the region, "further exacerbated by increased cement imports and the growth of third-party blenders."

It also speculated that this combination of factors could make it difficult for industry players to achieve sustainable pricing and grow their business in the long term, which could have an adverse impact on the sector.

Nonetheless, overall cement consumption across Africa – including South Africa – remains small compared to other developing states around the globe.

According to the World Cement Report 2018, South Africa's cement consumption per capita is just 213kg, while in Zimbabwe it is just 70kg; this rises to a huge 800kg in China or 530kg in Vietnam. ■

PAVING THE WAY WITH CONSTRUCTION ROAD TECHNOLOGY 4.0

Image Credit: VÖGELE

VÖGELE developed WITOS Paving Plus.

Digital planning, dynamic control, sustainable improvement – the demands on road construction projects are on the rise all over the world.

A pilot project before the gates of Stuttgart now illustrates the form that the job site of the future is expected to take in the South West of Germany.

The local Ministry of Transport has introduced QSBW 4.0 to this end. The abbreviation stands for “Quality in Road Construction in Baden-Württemberg 4.0”, a process which is set to become the standard by 2021. The objective of QSBW 4.0 is an uninterrupted and digitally controlled construction process designed to ensure excellent paving quality over the entire pavement, increasing the service life of asphalt layers.

Specifically, invitations to tender based on QSBW 4.0 criteria will require the inclusion of all the system components associated with a digitally controlled and monitored job site as defined by the QSBW 4.0 initiative. This comprises dynamic logistics and machine control, quality control and management, mobile networking, display options on smart phones, tablets or computers as well as the documentation of all data with access authorisation for clients.

The VÖGELE solution is QSBW-ready

VÖGELE developed WITOS Paving Plus with just such requirements in mind. This fully integrated, software-based overall system for process optimisation and documentation comprises five inter-coordinated modules for the various parties involved in the process, from the asphalt mixing plant and the lorry driver to the construction manager. With WITOS Paving Plus, contractors can already meet virtually all the requirements affecting road pavers which will generally be specified in future in invitations to tender under QSBW 4.0.


Image Credit: VÖGELE:

The rehabilitation road project in Stuttgart using QSBW 4.0 has been hailed as a milestone in the digitisation world of construction.

RoadScan monitors the temperature, a key quality factor

Temperature measurements are the focus of the quality control measures specified in QSBW 4.0. To ensure an optimum asphalt temperature, measurements must be checked throughout the process, i.e. also during paving. Meeting these requirements is also a great deal easier with WITOS Paving Plus, since VÖGELE's RoadScan temperature-measurement solution can be integrated in the system. With RoadScan, a high-precision infrared camera scans the entire specified area behind the screed of the paver, across a width of 10m.

WITOS Paving Plus shines on its first rehabilitation job

In the project to rehabilitate a regional road, A. Waggershauser Straßenbau GmbH + Co. KG were able to fulfil QSBW 4.0 from the very first metre thanks to WITOS Paving Plus. The process known as “Quality in Road Construction in Baden-Württemberg 4.0” or QSBW 4.0 was developed by the Ministry of Transport of Baden-Württemberg in collaboration with companies in the construction sector and summarised in a manual. The process has been trialled in a competitive environment since 2018 and the ministry has now hailed the rehabilitation project as a successful “milestone in the digitisation of road construction”.

VÖGELE’s solution for the process optimisation and documentation of road construction projects has thus proven its ability to help contractors gear up for the future.

QUALITY IMPERATIVE IN ENGINEERED WALKWAY PRODUCTS

In any working environment where the safety of people depends upon the quality of the products used for walkways, cutting corners could be a recipe for disaster.

As a leading local manufacturer, Andrew Mentis has over 65 years' experience in the manufacture of walkway products, and the company is probably best qualified to comment on this. This is according to Lance Quinlan, national technical sales consultant at Andrew Mentis, who stresses that the use of a quality manufactured product is imperative.

"We have a solid track record of quality manufacture when it comes to engineered walkway materials including RS40 grating, expanded metal and Die Line. We simply do not compromise when it comes to quality," he said.

Quinlan explains that when it comes to walkway products, it is a case of horses for courses. Probably the most commonly known of all walkway products in the industry is the Mentis RS40 40/40 floor grating.

Image Credit: Andrew Mentis

The most important factor in flooring is the load-bearing capacity of the product.

"This is our number one premium brand, and is often considered the floor grating to have," he said. He noted that the product has the kind of awareness in its market similar to which Hoover has enjoyed in the vacuum cleaner market.

The most important factor in flooring is the load-bearing capacity of the product. The design, engineering and manufacture of steel floor grating products have particular relevance to their structural integrity, and floor grating should always be viewed as an engineered product. It is formed through a process of compressive locking of the load bearing flat bars (bearer bars) and the round bar transversals to form an exact 40mm² pitch with openings of 35,5mm x 32,4mm and is designed with specific load-bearing characteristics.

TAKING DATA VISUALISATION OUTDOORS

Trimble has introduced its Trimble SiteVision system, an outdoor augmented reality (AR) solution that enables users to visualise 2D and 3D data on virtually any project site with cellular or internet connectivity for easier and more efficient planning, collaboration and reporting. Combining hardware and software in an integrated, lightweight handheld or pole-mounted solution, users can view 3D models and assets in a real-world environment at a 1:1 scale, from any angle or position.

"It's easier to understand complex ideas when we can see them in a real-world context," said Mark Nichols, general manager at Trimble. "SiteVision improves our understanding of projects and worksites with a handheld device that is accessible to a wide range of users."

SiteVision enables users to visualise digital models from a wide range of data collection, design and constructible modeling tools in IFC and LandXML. For civil projects, SiteVision accurately visualises data from Trimble's Quantm, Business Centre and Novapoint; design data from Civil 3D and Bentley OpenRoads; and GIS data from Esri ArcGIS software.

SiteVision powers Building Information Modeling (BIM) projects with open data from Trimble's Constructible BIM solutions including SketchUp and Tekla, and BIM data from Autodesk Revit.

Using Trimble Connect cloud-based hosting, SiteVision can access models from all stages of the lifecycle of infrastructure and buildings, from concepts of roads or buildings through the operations and maintenance phase of the assets to increase collaboration, work accuracy and ultimately improve operations and utilisation.

Caterpillar rolls out new Cat D3 SSLs

Caterpillar has announced the release of 16 new Cat D3 Series Skid Steer Loader (SSL) and Compact Track Loader (CTL) models. These new machines advance the D and D2 Series' reputation for quality, comfort, and performance and deliver improvements in operator experience, and track loader stability. An industry first, the D3 Series models also support a line of smart attachments. This advanced machine technology recognises certain attachments and tailors the controls and operator information to match the tool and the task.

Entering and exiting the new D3 Series loaders equipped with an enclosed cab is now easier thanks to a wider opening cab door. Additionally, the distance between joystick pods has increased by three in 76 mm, offering extra space for the operator inside the cab to deliver a more comfortable experience.

New Cat D3 Series CTLs deliver improved operating stability while handling heavy loads, grading or truck loading. Changes to the undercarriage frame and torsion axles reduce machine pitching and rocking, while still offering superior ride comfort.

All Cat D3 Series CTLs feature standard two-speed travel to improve performance at the jobsite. These machines are geared to deliver high torque digging performance as well as high top-end speed for travel. The powerful Cat 279D3 and 289D3 loaders boast an 8.4mph (13.6 kph) top-end ground speed, a 20 per cent increase over their D Series counterparts. The Cat 239D3 and 249D3 models are built with 2-speed transmission as standard, versus the previous single speed, increasing travel speed by nine per cent and aligning these models with the rest of the two-speed equipped CTL model range.

The Cat 239D3.

Image Credit: Caterpillar

NEW-GENERATION ROTTLER MACHINE IMPROVES ENGINEERING CAPACITY

In a boost to South Africa's engineering capacity and quality, Metric Automotive Engineering has added a new-generation Rottler three-axis CNC machining unit to its workshop. Featuring linear rails for greater accuracy, the machine is the first of its kind in Africa, according to Metric Automotive Equipment operations director Andrew Yorke.

"This technology represents a significant advance in our industry," said Yorke. "It enables us to conduct wireless probing for measuring and set-up, as well as using CAD drawings to machine components to high levels of precision."

The scale of the new machine allows it to work on engines up to 20 cylinders in size. The three-axis capacity facilitates the standard machining processes for engine block remanufacture, and also enables salvage repairs. The new unit joins the company's two larger three-axis machines already in operation. The machines are dedicated mainly to the rail sector.

"A locomotive engine spends considerable time on our machining centres, so our new addition provides much-needed additional capacity for other work," Yorke said. "On any given day, we can now have up to five V18 engines being machined at our facilities side by side."

Yorke highlights the value of the new Rottler unit in the continuous quality improvement of local remanufacturing capacity and expertise. As a function of process repeatability and machining accuracy, the quality of output is being constantly raised to the benefit of local customers.

"Our investment in machines like these represents a strategic contribution in support of local original equipment manufacturers (OEMs) and state-owned enterprises (SOEs)," added Yorke. "This fosters the country's capacity to conduct large engine remanufacturing, which is vital to

Image Credit: Metric Automotive Engineering

The new Rottler machine joins Metric Automotive Engineering's fleet of CNC machining machines.

affordability, economic growth, job creation and conserving our foreign exchange."

Rottler equipment is not for general engineering purposes but is specifically designed for high-precision machining of engine blocks, he emphasises. This ensures that the quality of remanufactured engines complies in every respect with OEMs' demanding specifications and standards.

The focus of Metric Automotive Engineering's remanufacturing technology is on large engines used in sectors such as rail, earthmoving, mining, power generation and marine.

Setting the gold standard for service

Stretching 210km southwest across the Kivu and Maniema provinces of the Democratic Republic of Congo, from verdant mountains into the rainforest, the Twangiza-Namoya gold belt is a world class mining region. At its southernmost tip lies the Namoya gold mine, one of four wholly-owned gold projects of Banro Corporation Ltd (Banro) in the DRC.

Image Credit: Volvo CE

Nine 40 tonne Volvo A40F ADTs are on site at Namoya mine.

"First gold was poured here at Namoya in December 2013, and commercial production began in 2016," explains Frans Gonsalves, co-head of Operations and Capital Projects at Banro. The company's Twangiza mine, which started commercial production in 2012, was the first gold mine to be established in the DRC in more than 50 years. Like Twangiza, Banro's Namoya mine is an open-pit, oxide operation that is designed to produce 120,000 ounces of gold ore per year.

In an industry where improving efficiency and productivity drives profitability, the mine's well-maintained machines need to be available round the clock. Banro's fleet of nine 40 tonne Volvo A40F articulated haulers (ADTs) are worked hard transporting ore from the mining pit back to the production plant. Operating in harsh, unforgiving conditions for 22 hours a day, 365 days a year, a meticulous maintenance schedule is necessary to maximise utilisation.

> "As part of our partnership with SMT we have three dedicated Volvo technicians on site 24/7"
>
> **FRANS GONSALVES, CO-HEAD OF OPERATIONS AND CAPITAL PROJECTS**

With local Volvo dealer SMT DRC based several hundred kilometres away in Kinshasa and Lubumbashi, SMT's solution was to bring a fully-equipped workshop to Namoya to provide full service maintenance on the ADTs.

And it is an investment that is paying off, according to Gonsalves. "As part of our partnership with SMT we have three dedicated Volvo technicians on site 24/7, with all the facilities and equipment they need to get every job done. Because they are fully trained on the latest smart Volvo diagnostics tools, they understand the fault codes and we get a faster fix. Their expertise means we fit the right part first time to keep the ADT fleet up and running safely and efficiently. Any vehicle downtime affects productivity – you can't make that time back up, when it's gone it's gone."

The fully-equipped workshop, complete with pit lane and crane, ensures that the three technicians, Lambert Kabangu, Bernard Kahilu

Image Credit: Volvo CE

The technician team can carry out any job on site 24/7.

and Cedrick Tshibandela can undertake all sizes of job, from routine maintenance through to full engine rebuild.

“Alongside the workshop, we have our own spare parts store, so whatever part is needed, we’re always ready,” says Danni Jensen, service manager at SMT DRC.

Banro-Namoya also benefits from the proactive support of Volvo’s intelligent telematics service that monitors each machine’s health remotely to prevent potential breakdowns before they happen.

> “Having SMT’s experienced people on site who know the Volvo product makes all the difference ”
>
> **FRANS GONSALVES, CO-HEAD OF OPERATIONS AND CAPITAL PROJECTS**

“Every 1,000 hours, we undertake a full inspection of each vehicle and report on operating performance. These insights mean we can catch any small issues before they turn into big ones, so they can be found and fixed, improving uptime and maintaining efficiency,” Jensen adds.

The SMT team are also on hand to help train mechanics and assist operators to get the best out of their machines, safely. “We can help operators improve small things on a daily basis – we look after the machines and we look after the operators, because we care.”

Efficiency and utilisation is much improved, Gonsalves notes. “Once the SMT technician has completed an inspection and service done, it’s always comprehensively checked, so fixes are right first time and returns to the workshop are minimised. This level of expertise and quality control has increased the Mean time between failure (MTBF), as well as reducing the effective downtime of our machines.”

Set up costs could have been an initial barrier, Gonsalves admits, but the long-term benefits are clear. “Availability of our ADT fleet is currently between 95-97 per cent compared to the mine’s average of 88 per cent.”

Every additional percentage point in uptime means extra trips between the mine and the production plant and that means additional revenue to the business.

“Having SMT’s experienced people on site who know the Volvo product makes all the difference.” ■

Metso's mobile crusher: the Lokotrack Urban LT106S.

Image Credit: Metso

Construction activity boosts crushers and screeners market

The global crushers and screeners market will double in value to US$4mn by 2026 thanks to the construction boom happening across the world. Samantha Payne reports.

The number of people living in cities could double by 2050 to 6.5 billion, according to the United Nations. In Africa, the continent's population is expected to reach 2.4 billion by 2050, with 20 per cent of people predicted to live in cities.

To meet soaring population growth, more roads, port infrastructure and housing are needed, which in turn means more demand for sustainably produced rock and sand as basic building components.

Step in crusher and screener companies, such as Metso Corporation and McCloskey, offering innovative rock and mineral processing technologies to provide aggregate for construction purposes.

Some of the main players in the mobile crushers and screeners industries include Metso Corporation, Terex Corporation, Sandvik AB, SBM Mineral Processing Gmby and Thyseenkrupp, all of which have an active presence in Africa and the Middle East.

According to Persistence Market Research (PMR), the mobile crushers and screeners market is estimated to witness a CAGR of 7.4 per cent from 2018 to 2026, with a value estimated to reach around US$4mn.

Mobile crushers and screeners, are becoming increasingly the customers' preferred choice of machine to process materials onsite in order to reduce large construction capital and transport costs.

Metso Lokotrack® Series reduces capital and haulage costs for customers. The machine is well suited for asphalt, construction and demolition waste crushing and helps the contractors recycle directly at the removal site. For densely populated areas, Metso has developed the unique Lokotrack Urban Series, with patented noise and dust encapsulation protection.

Juhamatti Heikkilä, manager, Product Safety from Metso Minerals told *African Review* and other members of the press during a visit in August to the company's headquarters in Helsinki, Finland that its Lokotrack LT106 mobile crusher, was "one of the industry's most famous mobile crushers in the business", and one of their best-selling machines.

With Lokotrack Urban unit, the noise protection distance can be cut by half. For example, in a typical hard rock processing application, the distance is cut from 400-500 metres to 200 metres. For processing recycled material, the protection distances are significantly shorter.

Interestingly, Metso discovered operators could save a whopping 80,000 euros by onsite crushing, based on a construction site with a 20,000 tons crushing contract (200 t/h, 100 hours), see Figure 1.

By using a mobile crusher, such as one from their Lokotrack Urban Series, set to be featured at Expo 2020 Dubai next October, the onsite crushing eliminates the need of transporting aggregates and saves the customer approximately 40 euros per round trip to the quarry, this saving amounted to 80,000 euros altogether.

It's not only mobile crushers; Metso has a wide equipment offering for customers operating in quarries and contracting to match all their needs. This includes, for example, jaw crushers, rock breakers, impact crushers, cone crushers, screens as well as mobile and stationary plants, life-cycle services and wears and spare parts.

Equally, the global Screening Bucket market is highly competitive and is expected to grow over the next five years.

MB Crusher is a major manufacturer in this market, with more than a 90 per cent share of the world market of crusher attachments. Among the companies making up the rest of the market are Steelwrist, Sandhurst, Vintec Equipment, BOSS and Fravizel.

The MB Crusher bucket is a unique solution for onsite crushing as it can turn any machine from a excavator, skid loader, loader to backhoe loader into a real jaw crusher. So far, 20,000 crusher buckets have been sold across the world.

Earlier this year at bauma 2019, the company announced the world's first patented multi-functional jaw crusher.

Since its first patented crusher bucket, MB Crusher has transformed many sites from a work area of "transit" into an independent operating centre with high performance and profitability.

A company spokesman said, "The population continues to grow, and with it the demand for raw materials. It's precisely for this reason that the waste material

Figure 1


REDUCE>REUSE>RECYCLE
CRUSHER BUCKET
SCREENING BUCKET
DRUM CUTTER

processing equipment sector has evolved so rapidly and brought cutting-edge solutions to construction sites. Solutions like the MB crusher bucket; a product that creates value, is good for the environment and brings in profit for the companies that use it."

MB Crusher has been operating in the Middle East and Africa since it started more than 15 years ago.

The MB Crusher Bucket BF120.4, is currently being used in the development of the US$3.5bn Djibouti International Free Trade Zone. It has been mounted on a Volvo EC3800L excavator and can crush more than one million cubic metres of basalt for road construction purposes.

The BF120.4 crusher bucket, suitable for operating machines exceeding 30 tonnes, has been designed to meet specific crushing requirements in quarries, landfills and for all aggregate recycling operations.

The MB Crusher Bucket BF120.4 in action at the Djibouti International Free Trade Zone. It can crush more than one million cubic metres of basalt for road construction purposes.

When *African Review* asked why customers should choose MB Crusher solutions, a firm spokesman said, "Our attachments provide onsite independence. One may all of a sudden do crushing and screening operations in the remotest parts of the country without depending on expensive and time-consuming transportation costs. They also eliminate a lot of labour issues when replacing manually executed jobs. This enhances consistency and efficiency. MB Crusher's application areas are far reaching, from road construction sites to demolitions, to the laying of new pipelines, to mines and quarries to the disposal of railway sleepers and lamp posts.

"But also to large recycling centres where iron materials, foundry waste, glass and many other materials are recovered."

Thyseenkrupp premiered its new eccentric roll crusher ERC at bauma Munich. It is an innovative solution for the primary reduction of hard rock and ore. Its patented design with an integrated screen permits throughputs of up to 8,000 metric tons per hour. It is suitable for use in underground and in surface operations, offering higher efficiency and flexibility than conventional primary crushers. ■

WEG wins ventilation contract for underground gold mine in Ghana


The WEG MVW3000 VSD installed underground at a gold mine in Ghana

Image Credit: Zest WEG Group

Two units of the newly developed WEG 11 kV Variable Speed Drive (VSD) have been commissioned in West Africa by WEG Automation Africa, a member of the Zest WEG Group.

According to Kirk Moss, senior manager: projects and engineering at WEG Automation Africa, the new WEG MVW3000 VSD is a valuable addition to its Medium Voltage (MV) VSD portfolio. The first two 11 kV units produced are for 850 kW ventilation fan motors in an underground gold mine in Ghana.

"In line with WEG's ongoing innovation, the addition of the WEG MVW3000 system brings a range of benefits to customers," says Moss. "It gives WEG Automation Africa even greater flexibility in our market offering, further enhancing our capability to provide customised solutions."

The design is based on the well-known cascaded H-bridge (CHB) topology, using multiple low voltage power cells in combination to achieve the desired voltage output. The input switch, phase-shifting transformer and VSD are fully integrated in a single MV panel.

"The WEG MVW3000 is particularly suited to applications where there are standard motors with no special insulation," he says, "or where existing motors are being modified for VSD control."

This VSD delivers high quality input power using low harmonic multi-pulse transformers. Users benefit from a high efficiency of more than 96.5 per cent throughout the entire load range, and a power factor of more than 0.95 throughout the entire speed range.

"The design includes power cells with long-life plastic capacitors, which are more reliable and last longer than dry type capacitors," he says. "They also have the advantage of not needing to be reformed after long periods of storage."

VOITH REVEALS ONSITE MACHINING TOOLS

Technology group Voith has introduced onsite machining and service tools capabilities for the hydropower industry and key processing industries in Africa.

The portable on-site machining equipment, which ensures increased plant up-time and safety, was showcased during an official launch event in Witfield, in South Africa.

The new services includes the refurbishment of plant components in installed or independent state by linear and circular milling as well as drilling, boring and welding.

"During the past two years, we built up an extensive range of onsite machining and repair services through the acquisition of equipment and the training of new staff. Now, we can provide cost-effective workshop-quality machining for the largest and smallest onsite machining projects in Southern Africa," says Anton Harris, head of service and managing director of Voith Hydro in South Africa. "Besides the use in the hydropower sector, the equipment is also applicable to all fields of the processing industry in Africa, such as the oil and gas or the mining industry. For hydropower plants, the Voith range of services is amplified to assessments, trouble shooting, repair and assembly services - along the whole life cycle of an operating plant."

The on-site machining equipment is stored in sea freight containers on the Voith company premises in South Africa. From there, the equipment is ready to be shipped on the road or on the seaway to any location in Southern Africa.

For a range of different boring, drilling and facing applications, there are three heavy-duty line boring machines, which can be equipped with different heads and with an orbital welding machine for welding and reprofiling applications.

The linear mill is a bed-type milling machine for universal use in a fast and accurate way. Together with the adjustable head mounting options for angular milling and the different tooling options, a wide range of milling jobs can be fulfilled.

Top tips for African entrepreneurs

Ghanaian award-winning business communications specialist, Miti Ampoma, compiles a list of her top tips for African entrepreneurs seeking ways to advance their business.

Whilst profit-driven growth projections may be at the forefront of a business owner's mind, Miti Ampoma reminds us of the key fundamentals for success.

1. Learn all the different aspects of your business early on and don't just concentrate on the things you like. Get to know your business inside out and then you'll know how to build the best team for you.
2. Business is a team effort and things really start to take off when you build a strong team around you. You can't do it all by yourself. So split your efforts equally between working tirelessly and finding the right specialists to support you.
3. When you build a team, work with diversity in mind – diversity of thought, diversity of feeling, a diverse pool of talent. Diversity drives innovative thinking.
4. Be prepared to work hard because you'll need to at the start. Listen to both your clients and colleagues – you'll learn a lot from them.
5. Don't let anyone else nanny your business. There's a reason why you're the founder of your business and you must have faith in your own ideas and vision. You are also a role model for what you do and stand for, so your position comes with ownership and responsibility.

Image Credit: Miticom

Miti Ampoma

"Business is a team effort and things really start to take off when you build a strong team around you"

MITI AMPOMA

6. Whatever your business, make people, integrity and humanity a priority. Build strong relationships and it will take you far. Strong meaningful relationships are the bedrock for accelerating your business in terms of driving performance, productivity and sustainable financial success.
7. There are many false dawns in entrepreneurship and the road is long. Play the long game – you're very unlikely to be an overnight success. Stay true to your end goal and keep the faith!
8. Step up. Write a book. It will position you as a subject matter expert in your field and give you credibility. Writing a book was one of my biggest challenges and one of my proudest achievements.
9. Do what drives you and burns brightly in your soul. It will keep you going. Follow your heart but take your brain with you.
10. And finally, focus on the rewards. They are many, so much more than simply the profit you make at the end of the day. Live inspired. ■

Miti Ampoma is the founder and director of Miticom Communications Training. She is author of The Innovative Communicator – putting the soul back into business communication, available on Amazon.
***Website:** www.miticom.co.uk*

Advertiser's Index


Power For
A New Generation
There are many ways to store or produce electricity but when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's no better option than a generator set from FG Wilson.
Our products range from ready-to-run generator sets to completely bespoke turnkey power systems with remote monitoring, all with lifetime support from our dealers.
Based in the UK for more than 50 years, we've worked together with a multitude of customers in all environments globally and since 1990 have installed more than 640,000 generator sets around the world, with as much combined power generation capacity as the entire UK power grid.
To find out more, visit us at
www.fgwilson.com
FG WILSON