www.africanreview.com

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

African Review

of BUSINESS and TECHNOLOGY

JULY 2019

P16

"There is still appetite to fund small- to medium-sized renewable projects"
Rentia van Tonder, head of power for Standard Bank Group

55 YEARS
SERVING BUSINESS IN AFRICA SINCE 1964

Cover picture: Loading cargo
© Adobe Stock
Cover Inset: Rentia van Tonder, head of power for Standard Power Group
© Standard Bank Group

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

Editorial and Design team: Prashanth AP, Fyna Ashwath, Miriam Brtkova Praveen CP, Manojkumar K, Emmet McGonagle, Nonalynka Nongrum Rhonita Patnaik, 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 80 65684483
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, Infant Prakash and Hariharan PM
E-mail: production@alaincharles.com

Chairman: Derek Fordham

Printed by: Buxton Press

Printed in: JUNE 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

Alain Charles Publishing
Serving the world of business

Audit Bureau of Circulations - Business Magazines

Editor's Note

Welcome to the July issue. It was lovely seeing some of you at the Africa Energy Forum in Lisbon last month. What an exciting few days it was exploring the innovations and energy solutions out there in the energy sector. Speaking of one in particular, Wärtislä launched their modular block plant concept at the show, a pre-fabricated expandable enclosure for sustainable power generation. We caught up with Wale Yusuff, the North and West Africa business manager to find out more (page 30).

Earlier in the issue, we look at interesting insights in the tech industry, summed up interestingly by Tedd George, CNO of Kleos, that, "your control over your data is how you will make money, in the future", (page 13)

Over in the construction industry, the hospitality sector in Kenya is expanding thanks to the rise of large-scale hotel developments popping up across the country, (page 38), and in our environment section, we look how wastewater could be used as a viable solution, once treated, to supply much-needed drinking water (page 54).

Finally, don't forget to read our genset review. Sales remain steady with strong growth predicted at about 3.5 per cent until 2024 (page 24).

Samantha Payne, *Editor*

Contents

NBK-Egypt launches E-Wallet service

National Bank of Kuwait-Egypt has announced the launch of the NBK EG WALLET phone app, offering customers an easy-to-use banking service.

This innovative service comes in line with the Central Bank of Egypt's vision to transform into a digital economy.

The e-wallet, available in Arabic and English on IOS and Android smartphones, allows users to settle bill payments for various merchants including telecommunication and insurance companies, internet service providers and utilities.


Image Credit: Adobe Stock

The launch of the NBK EG Wallet is part of the Central Bank of Egypt strategy towards enhancing a digital economy.

Other options include the payment of donations, subscriptions, insurance premiums, ticket purchase and a wide range of other services. Customers can easily move money to their e-wallets through their bank account. Users are also able to withdraw and deposit cash and transfer funds between account holders within Egypt.

Michael Asaad, alternative channels manager at NBK Egypt said, "Launching 'NBK EG Wallet' reflects our firm belief in the importance of technological development and the need to adopt the latest innovative mechanisms due to their significant role in developing the banking sector."

The initiative is part of NBK's strategy towards expanding its online services. "NBK management does not spare any efforts to support the implementation of the most advanced services through injecting huge investments in digital transformation," added Assad.

Furthermore, the move complements the Central Bank of Egypt's direction towards becoming a cashless society and supporting the government's efforts to achieve financial inclusion and a cashless economy via mobile money applications offered by banks.

NBK-Egypt has a wide network of 50 branches spread over locations in various Egyptian governorates and cities including Cairo, Giza, Alexandria, Delta, Sinai, Red Sea and Upper Egypt.

ENI AND SONATRACH TO EXTEND PARTNERSHIP

Eni and Sonatrach have signed agreements to renew the gas supply contract to import gas from Algeria to Italy until 2027, plus two further optional years.

It means the agreements cover almost 15 per cent of the gas imported into Italy.

Claudio Descalzi, CEO of Eni, said, "I am particularly pleased with the renewal of the gas supply contract and the level of the strategic partnership with Sonatrach which spans from the exploration and production sector, to gas marketing and transportation, to renewables."

The agreements, which cover transportation arrangements through the pipeline across the Mediterranean Sea as well, follow in the steps of a partnership on gas supply and transportation that was established more than 40 years ago.

FISHERIES FOCUS AT AFRICA'S BLUE ECONOMY FORUM

Returning to Tunis on June 25-26, the Africa Blue Economy Forum (ABEF2019) hopes to bring to light the economic, social and environmental power of the Blue Economy for businesses in African coastal countries (which account for a massive 70 per cent of the continent's nations).

With confirmed speakers including government ministers and officials from Gabon, Ghana, Morocco, Somaliland, Tunisia and Seychelles, the event is set to cover a wide range of sectors which have proven crucial for the continent's sustainable development; including fisheries, aquaculture, transport, energy, trade and tourism; as well as extractive industries. More official delegations from other African countries are also expected to make an appearance at the two-day event.

"There needs to be more awareness of the Blue Economy, as well as a realisation of how important it is to the future of Africa," said Leila Ben Hassen, organiser and founder of ABEF2019.

With Africa's maritime industry estimated to be worth US$1 trn per year, ABEF2019 will build on last year's inaugural event (held in London), further exploring how business and governments can implement actions to improve the welfare of the continent on the whole.

"Governments are beginning to understand this and beginning to implement policies, but it still needs the private sector to grasp this and to look at how they can work in partnership with governments and other organisations to make this succeed."

On the topic, she continued, "Collaboration is necessary to make the Blue Economy work and deliver huge benefits for the continent, enabling it to meet the United Nations' Sustainable Development Goals. ABEF2019 will begin to lay the foundations for this collaboration process."

BRIEFS

Two new clouds for business users


Image Credit: Adobe Stock

Microsoft Azure and Oracle Cloud team up to deliver fast network connectivity between two clouds.

Microsoft and Oracle announced a cloud interoperability partnership, enabling customers to run enterprise workloads across Microsoft Azure and Oracle Cloud.

This partnership delivers fast reliable network connectivity between two clouds. Users will access applications including analytics.

Don Johnson, executive vice president, Oracle Cloud Infrastructure (OCI), said, "Oracle and Microsoft have served enterprise customer needs for decades."

AGCO expands its footprint in Africa

Your Agriculture Company, (AGCO), a worldwide manufacturer and distributor of agricultural equipment, has opened an office in the north-east of Casablanca, Morocco.


Image Credit: Adobe Stock

AGCO has opened a new office in Casablanca, Morocco.

The premises will serve as the company's regional sales office for West and North Africa. This follows the launch of the Africa head office in South Africa.

"The continent is home to 60 per cent of the world's arable land and is expected to play a major role in future, global food security," said Nuradin Osman, AGCO vice president Africa.

Expanding payment services across East Africa thanks to new fintech solution

Image Credit: PayU

PayU Kenya will provide improved stability and localised customer support.

Fintech firm PayU has launched payment services in Kenya enabling global businesses to do bigger transactions across East Africa.

Kenya's payment market is dominated by mobile transactions. More than 80 per cent of payments take place over mobile wallets with M-PESA remaining the dominant provider of choice, closely followed by card payments, then EFT. PayU provides a single, integrated transaction point that embeds these payment preferences into a central ecosystem, making it simple and accessible for merchant and customer alike.

"Kenya is a powerful and growing market, ideally suited for investment and expansion for high velocity merchants," said Corrie Bakker, head of strategy and business development, PayU Africa. "With our global, long-standing reputation, and local presence in the Kenyan market, we provide organisations with a doorway into East Africa that's built on the foundations of long-standing relationships and local expertise."

PayU's Kenyan operation has been approved by the Central Bank of Kenya and its launch in Kenya will provide organisations with on-the-ground local liaisons, strong relationships, improved stability and reduced downtime, and localised customer support.

Users are able to transact in volume at the approval rates certified by PayU, and are assured of robust, ongoing security.

"Working with us in Kenya not only opens the door to Tanzania, Uganda and Rwanda – countries that have shown real GDP growth – but provides our partners with the first line of local defence with people on the ground," said Bakker. "We provide a new set of credentials and a tokenised anti-fraud offering with a re-occurring option that assures merchants of strong security and peace of mind."

To complement the localised offering in Kenya, PayU has formulated a major partnership with Cellulant to ensure hyper-localisation and payment method expansion.

The Cellulant corporation develops and provides a one-stop mobile payments platform for connecting businesses and governments in Africa. It offers consumer payments, digital and neighbourhood agency banking and remittance solutions. Some of the services offered by Cellulant include Mula, Agrikore, and Tingg.

Economic growth in the East Africa region is estimated to remain at a steady 5.9 per cent in 2019, a significantly higher percentage than North Africa at 4.9 per cent and Southern Africa at 1.2 per cent, according to the African Development Bank.

The countries with the highest economic growth include Rwanda, Kenya and Tanzania, with the service sector the primary driver of growth for the latter two.

FUEL ATMS AND E-KIOSKS EMERGE IN NAIROBI

KOKO Networks has launched its first network of 700 'KOKOpoints' inside neighbourhood shops across Nairobi. KOKOpoints are multi-purpose consumer access machines, combining a fuel ATM, an e-commerce kiosk and an in-store digital media experience.

KOKO Fuel mainstreams access to affordable clean bioethanol cooking fuel within a short walk of all homes. It is delivered in partnership with Vivo Energy Kenya, the company which operates Shell-branded fuel distribution infrastructure.

KOKO's technology platform delivers major cost efficiencies when partnered with the downstream fuels industry, removing the need for a centralised bottling facility and disposable plastic bottles to make clean fuel available in close proximity to customers.

The urban cooking fuel market is worth more than US$20bn in Africa alone, and remains dominated by dirty cooking fuels such as charcoal, which is produced through deforestation and causes millions of early deaths through indoor air pollution. KOKO's market-leading technology platform enables bioethanol cooking fuel to scale rapidly by undercutting dirty fuels.

Customers use smart canisters that dock with KOKOpoints to dispense fuel they have pre-purchased via M-PESA. They then take their smart canister home to dock into their KOKO Cooker – a modern, two-burner ethanol stove that delivers clean heat for modern cooking at an affordable price.

KOKO's CEO Greg Murray, said, "Many fast-growing cities face challenges that innovative technology can solve. KOKO has created the infrastructure for inventing, producing and delivering hardware and software solutions that improve life in the city. Kenyans have a reputation for embracing innovation and we are proud to partner with shopkeepers of Nairobi in launching our first network."

BRIEFS

Kenyatta opens UN-Habitat Assembly

Image Credit: Flickr/WTO

Kenya President Uhuru Kenyatta opens the first UN-Habitat Assembly

The President of Kenya, Uhuru Kenyatta, formally opened the first UN-Habitat Assembly at the United Nations Office at Nairobi. He was joined by President Salva Kiir Mayardit of South Sudan, and Prime Minister Maeen Abdulmalik Saeed of Yemen and the UN-Habitat Executive Director Maimunah Mohd Sharif where they shared ideas on innovation in cities. Mayardit explained how they were looking for partnerships as they need to provide housing and infrastructure "from scratch".

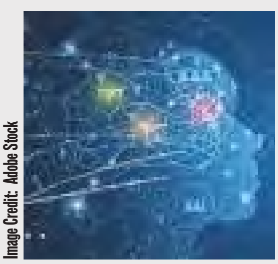


Image Credit: Adobe Stock

Ethiopia's leading firms meet to talk about the impact of new technologies on business.

Transforming business via AI

Ethiopia's leading organisations, technology implementers and SAP specialists gathered in Addis Ababa to discuss how intelligent technologies such as AI and conversational interfaces could be applied to transform how companies conduct business.

"Ethiopia's economic growth has created opportunities for firms to establish intelligent enterprise capabilities," said Pedro Guerreiro, managing director: Central Africa at SAP Africa.


A LONG WAY
TOGETHER

Siemens to acquire ESTEQ to accelerate digitalisation for customers in Southern Africa

Image Credit: leowolfert/Adobe Stock

Siemens will offer its customers solutions to enable them to capitalise on new and disruptive technology.

Siemens Digital Industries Software has signed an agreement to acquire assets of ESTEQ, a distributor of product lifecycle management, product design and simulation, and manufacturing operations software and services.

"Through the acquisition of ESTEQ, Siemens Digital Industries Software will now have a direct presence in the South Africa market which will enable Siemens to expand and enhance how we support and service our customers across the region," said Edwin Severijn, senior vice president, Europe Middle East and Africa, Siemens Digital Industries Software. "The combination of ESTEQ's local knowledge and Siemens expertise makes it easier than ever before for manufacturing companies to tap into Siemens' full software portfolio."

Siemens will incorporate ESTEQ into new software-focused sales organisations in South Africa and UAE, gaining direct presence to expand and grow the support and services to customers across the regions.

"With ever-increasing pressure from their customers and competitors, manufacturers across the region must rethink every aspect of their business," said Ralf Leinen, senior vice president, Siemens Digital Industries, Southern and Eastern Africa. "With our established and comprehensive knowledge of the South African market we can offer our customers the best and most appropriate products, solutions and services that can be used to take advantage of new and disruptive technology across their operations. As a leader in software and automation we are continuously expanding our leadership role in industrial digitalisation."

ESTEQ is headquartered in Pretoria, South Africa, and has locations across the region serving the aerospace and defense, transportation, consumer products, energy, electronics, machinery, mining and minerals, and oil and gas industries.

PPS TEAMS UP WITH FRESHWORKS

Professional Provident Society (PPS), the South Africa-based specialised insurance services leader, has aligned its information technology teams with Freshworks, a leading customer engagement software provider.

PPS uses Freshservice, the IT Services Management (ITSM) software from Freshworks to ensure that all teams work towards a quick and effective resolution to its IT services. Freshservice is an ITIL-compliant service management software, which is known for its strong collaboration capabilities.

The implementation aligns to the company's vision to completely move to cloud by 2023.

With Freshservice integration across its IT teams, PPS has seen drastic improvement in the SLA compliance and employees have higher trust in IT support and services within the organisation. PPS aims to achieve a SLA compliance of 98 per cent by the end of 2019.

NEW MONEY TRANSFER SERVICE LAUNCHED

Leading digital money transfer company WorldRemit has launched WorldRemit for Business, a new service that enables small and medium-sized business owners to quickly pay their employees and contractors in 140 countries worldwide, including fast-growing markets such as Ghana, Kenya, and South Africa. The platform will first be available to UK-registered businesses.

Each year, the UK imports US$5.6 billion in goods and services from South Africa where SMEs are estimated to make up 90 per cent of formal businesses and provide 60 per cent of employment. WorldRemit for Business will make it easier for local enterprises to receive payment by UK-based partners by offering via bank account and cash pick-up.

While some banks can take up to one week to process payments, WorldRemit transfers to South Africa are processed within 24 hours or less.

Customers sending funds abroad can easily track their transfers in real-time on the WorldRemit app and opt in to receive daily exchange notifications to send money abroad at the optimal time.

Andrew Stewart, managing director for Middle East and Africa at WorldRemit, commented, "Over the past nine years, WorldRemit has made it easier for 4 million people around the globe to send and receive money. Today, we're pleased to extend that service offering from consumers to businesses, and put an end to the steep fees that many have to pay, especially when sending to South Africa. We're committed to making it quick, safe and easy for you to pay individuals across borders, leaving you to focus on growing your own business."

WorldRemit customers complete over 1.4 million transfers every month from more than 50 countries to more than 140 destinations using its app or website.

BRIEFS

Image Credit: Price M/Adobe Stock

Globeleq has reached financial close on three renewable energy projects.

Financial close for projects

Globeleq Generation Limited has reached financial close for the 138MW Jeffreys Bay Wind Farm on the Eastern Cape, 50MW photovoltaic (PV) solar farm in De Aar and the 50MW PV solar farm in Droogfontein. Construction is expected to commence shortly.

The projects are part of the Government of South Africa's renewable energy IPP procurement programme and are among the first large scale renewable power plants to be built in the country.

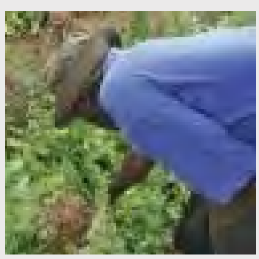


Image Credit: Renate Wefers/Adobe Stock

South Africa's agricultural sector declined by 13 per cent in the first quarter of 2019.

South Africa's GDP falls

South Africa's economy contracted by 3.2 per cent in the first quarter of 2019, the highest rate in a decade, as a result of power cuts, but may avoid going into recession if consistent power supply can be maintained, according to Bloomberg.

The agriculture, mining and manufacturing sectors suffered the most, contracting by 13 per cent, 11 per cent and 8.8 per cent respectively.

But GDP growth is expected to rise to 2.1 per cent in 2020, compared to 1.8 per cent in 2019.

Mauritania's offshore development expected to be a multi-sector boon

Image Credit: Georgia Lewis

HE Isselkou Ould Ahmed Izid Bih addressed the MBBC event in London.

Mauritania is open for business - that was the message from the north-west African country's ambassador to the UK when he addressed a Mauritanian British Business Council (MBBC) event in London this week.

HE Isselkou Ould Ahmed Izid Bih told delegates at a briefing from BP on the Greater Tortue Ahmeyim hydrocarbons development that Mauritania is "culturally diverse" and has a "very particular position geopolitically", sharing long borders with Mali, Western Sahara, Algeria and Senegal, as well as 750km of coastline. He cited Mauritania's good security record as a good reason for investing in the country's burgeoning oil and gas industry, as well as other sectors which are set to benefit from the massive offshore discovery.

"Since 2011, there has not been a single security incident in the country," the ambassador told the briefing. Mauritania will be having a general election on 22 June and the ambassador said he expects the vote to be conducted fairly and peacefully.

In regard to the Greater Tortue Ahmeyim offshore discovery, Gerry McGurk, BP's vice president, projects, for Senegal and Mauritania, updated the delegates on progress made since the 2015 Tortue discovery. FID was achieved last year and McGurk says BP is still on track for first gas by 2022.

The plan is to send gas back to a hub which McGurk said will be a "major LNG facility" with an FLNG plant to chill and liquefy gas so it can be transported by tanker for export and used in Senegal and Mauritania's domestic markets. An existing vessel is being upgraded at Singapore's Keppel shipyard to serve as the FLNG tanker.

McGurk said the cross-border development between the two countries has presented "challenges and opportunities" but has been "uniquely successful, an amazing achievement."

Contracts have been awarded by BP to companies to assist with six delivery teams – wells, subsea, gas processing, liquefaction, hub/terminal, and offtake – and there will be opportunities for contracts and subcontracts as the project progresses and local content is increased.

Next for BP is a "focus on safe delivery of the project at all global locations, the continued implementation of BP local content and local workforce development plans [and] supplier workshops and subcontractor awards."

FONYOU HELPS NIGERIAN MOBILE OPERATORS TO DEVELOP FINTECH

In a move that underscores its mission to deliver the right offer to the right customer at the right time, fonYou has opened a new office in Nigeria, where more than 30 million new mobile subscribers are expected to come online by 2025.

With 190 million people, Nigeria has the largest population of any country in Africa. According to the GSMA, Nigeria has a mobile penetration rate of about 90 per cent; however, 85 per cent of the market lacks access to digital payments. This means that mobile service is disrupted for customers until they make a cash top-up for data and voice at a physical store location.

A major tier-one African mobile carrier recently began integrating fonYou's Artificial Intelligence (AI)-based iCarrier solution to give subscribers uninterrupted access to voice and data.

ARB APEX BANK RENEWS CONTRACT WITH TEMENOS FOR INCLUSIVE BANKING

ARB Apex Bank has decided to renew its contract with Temenos to continue its mission to provide banking and non-banking services for Ghana's Rural and Community Banks (RCB's) and their customers.

The bank, which acts as the mini-central bank for Ghana's RCBs, connects 144 rural and community banks in Ghana, totalling more than 700 branches.

ARB Apex Bank has opted for Temenos Infinity, the breakthrough digital banking product and Temenos T24 Transact, the next generation core banking system as well as a host of additional solutions including Risk and Compliance and Temenos Payment Hub.

ARB Apex Bank was recently recognised as part of the "Best in Banking Awards" held at the Temenos Community Forum in The Hague in April and awarded the "Best Inclusive Banking" prize. This award recognises ARB Apex Bank for delivering a truly customer-centric experience and for passing on its operating costs efficiencies to its end-customers in the spirit of financial inclusion.

Established in Ghana in 2000 and receiving its banking license in 2001, ARB Apex Bank became a Temenos client in October 2009. The bank currently has 11 branch offices throughout the country and hosts over 140 Rural and Community Banks (RCBs) on a private cloud, run from their premises in Accra, Ghana.

Kojo Mattah, managing director ARB Apex Bank, said, "With Temenos banking software, we gain operational efficiencies and we can offer seamless and compelling banking experiences. We want our customers to feel confident and proud to walk into the banking halls of our RCBs and receive outstanding products and services."

Jean-Paul Mergeai, managing director for the Middle East and Africa at Temenos, said that this will help the bank increasing customer satisfaction and offering access to financial services to the broader population.

BRIEFS

Facebook celebrates one year of NG_Hub

Image Credit: Simon Steinberger/Pixabay

NG_Hub is created as part of Facebook's investment in growing the start-up ecosystem.

Celebrating a year to the day since the opening of NG_Hub in Lagos to train Nigerians in digital skills, Facebook released an infographic highlighting major milestones over the past year.
NG_Hub trained more than 50,800 SMBs in digital skills across 20 states in Nigeria. It delivered 526 events with more than 11,490 attendees at NG_Hub including programmes such as AR/VR meetups, the FbStart Accelerator Programme, Facebook Community Leaders Community meetings (CLCs) and more.

CHEC wins contract in Ghana's port expansion

Image Credit: MPS

CHEC commenced work on the first phase of the expansion work in September 2016.

Meridian Port Services Ltd (MPS) has signed an agreement with China Harbor Engineering Company (CHEC) to implement the second phase of the Tema Port Expansion Project.
This deal involves the construction of the fourth berth and last berth of the new port.
The new contract adds another 400m of the berth to the 1,000m already being built, creating a total of 1.4km of full capacity.
It will be a berth capable of handling vessels up to 16m draft.


ELECTRIC

Upcoming Events Calendar 2019

JULY

4 - 6
BUILDEXPO
Nairobi, Kenya
www.expogr.com/buildexpokenya

10 - 11
WEST AFRICA COM
Dakar, Senegal
tmt.knect365.com/west-africa-com

9 - 11
IFAT AFRICA
Johannesburg, South Africa
www.ifat-africa.com

9 - 11
OIL & GAS EXPO
Nairobi, Kenya
www.expogr.com/kenyaoil

SEPTEMBER

9 - 11
BIG 5 CONSTRUCT NIGERIA
Lagos, Nigeria
www.thebig5constructnigeria.com

9 - 12
WORLD ENERGY CONGRESS
Abu Dhabi, UAE
www.wec24.org

10 - 12
ELECTRA MINING BOTSWANA
Botswana, South Africa
www.electramining.co.bw

11
CYBERSECURITY: SECURING AFRICAN BUSINESSES
London, UK
investafrica.com/event/cybersecurity-securing-africas-businesses-3/

17 - 19
PROPAK WEST AFRICA
Lagos, Nigeria
www.propakwestafrica.com

12 - 22
IAA CARS
Frankfurt, Germany
www.iaa.de/en/

NOVEMBER

5 - 8
ECOMONDO
Rimini, Italy
en.ecomondo.com

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

The event saw industry leaders explore the role of digital technology in Ghana.

Image Credit: Adobe Stock

Experts prepare for the tech revolution in Ghana

Taking place in London, the fifth edition of Tech in Ghana saw industry professionals, government officials, investors and founders from across Africa come together to discuss the technological evolution of the Black Star of Africa.

Part of London Tech Week, the fifth edition of Tech in Ghana hosted talks, workshops and expert-led panels based on 5G, addressing the role of data and the need for collaboration in order to further the continent's economic prosperity. It featured speakers from Zeepay, Accra Digital Centre, Ghana Technology and Business Hubs Network, Farmerline, and Jetstream Africa.

Following the theme of 'Connecting our Global Networks: People, Opportunities and Industries', the event began with an inspiring speech from Kofi Adoo, head of trade and investment for Ghana High Commission UK. Adoo emphasised the need for 'economic independence' across Ghana, with particular reference to the fintech industry. Speaking at the event, he explained, "At the centre of our technological evolution is people – creative, innovative, talented people who are changing the future with the power of their imagination.

"We have gained our political independence in Ghana, what is left is our economic independence. We are counting on you to begin to shake us and reform us," he continued.

However, the big question was not the role of technology in Ghana, but what will be the next advancement to disrupt the way innovators carry out business in the region. There were discussions on ways in which experts could drive financial inclusion in the region alongside representatives from WorldRemit, Vodafone Cash and BlueSpace. Andrew Takyi-Appah, managing director of Zeepay Ghana Limited suggested the next big thing for innovation in Ghana will be data-mining.

Speaking to moderator Tedd George, CNO of Kleos Limited and former head of research for Ecobank UK, he said, "There is so much big data. Before, we didn't mine for data. We didn't know the data we had. Everything retail banking was doing is now slowly moving into the fintech space."

Likewise, George was quick to emphasise the importance of big data as Ghana moves into its fourth technological revolution. Discussing the topic at length with a small group of attendees during a deep dive session, he explained, "If you imagine from the moment you are born there are a series of digital imprints which will gradually get put on the blockchain, but it's all centralised within one single digital identity.

> "We have gained our political independence in Ghana, what is left is our economic independence"
>
> **KOFI ADOO, HEAD OF TRADE AND INVESTMENT FOR GHANA HIGH COMMISSION UK**

"The future economy is all about data, and in the future your control over your data is how you will make money. I don't think we are that far away from a time when if you post a photo on Facebook, they'll pay you for it," he continued.

However, data mining is just one of many advancements at the front line of Ghana's technological revolution, alongside the rise of mobile banking in the region. As outlined by Kenechi Okeleke, senior manager of Goma Intelligence, technology currently plays a bigger role in Ghana's economic prosperity than ever before. "Ghana is definitely on a digital journey, this is a statement of fact," he began.

"Business and enterprises around the country are using digital technologies to access new markets, improve productivity, reach new customers. National governments are using innovative technologies to engage with people and improve transparency in a lot of activities."

The sixth Tech in Ghana Conference is set to take place in Accra on 26-27 November. ■

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

Image credit: Aloysius/Pixabay

The theme of the Annual Meetings this year is "Regional Integration for Africa's Economic Prosperity."

FOSTERING ECONOMIC GROWTH IN AFRICA

Leaders from four African countries have shared their vision for an integrated and borderless Africa that would foster economic growth and development.

The leaders spoke during a high-level presidential dialogue on day two of the African Development Bank's (AfDB) 2019 annual meetings.

AFRICAN MINISTERS PAVE WAY FOR AFCFTA OPERATIONALISATION

Image credit: Aloysius/Pixabay

The aim is to rapidly boost trade activities across the continent.

African ministers of trade (AMOT) of the African Union met in Addis Ababa at the African Union Commission (AUC) headquarters from 7-8 June to discuss the progress of the African Continental Free Trade Agreement (AfCFTA) in turning it into a reality.

Giovanie Biha, deputy executive secretary of the Economic Commission for Africa (ECA), said, "AfCFTA legally entered into force but for it to deliver its transformative economic potential, the signatory countries – and the few countries that have not yet signed – must rapidly join and ratify the agreement to ensure that the continent moves forward together as one entity."

SRK GHANA: A HUB FOR WORLD-CLASS ENGINEERING AND SCIENCE

The Ghana office of SRK Consulting became the springboard to West Africa for the engineering consultancy's global hub of engineers and scientists.

Under the leadership of country manager Ghananian, John Kwofie, the office focuses mainly on geotechnical work, assisting clients with open pit

Image Credit: SRK Ghana

John Kwofie, country manager, SRK Ghana.

slope stability analysis and work on tailings dams. It collaborates with other SRK offices to offer consultancy services in mineral exploration, mining, environment, infrastructure, water, energy and oil and gas.

Reducing commercial loss through improved metering

Some issues related to commercial loss for non-revenue water (NRW) are: meters not working or stalled; tampering or manipulation of meters; meter readers not having proper accesss; meter readers not taking readings or influenced to give wrong readings; and illegal connections and theft. Danco Capital, a water solution provider (WSP) in Kenya has cut water losses through sustainable solutions in metering and piping.

1. Choose an accurate meter

Avoid cheap, inaccurate meters which can stall within one year of installation. Quality meters should last more than seven years and be MID-approved. Using the correct meter with higher accuracy, the right type of meter for the turbidity of water, and tamper proof is imperative. Diehl Metering offers a wide range of meters all smart-enabled. They are tamper-proof, lab-tested in Europe, available in composite or brass. It is important that a WSP looks at lifetime cost, accuracy and technical benefits when choosing a meter. At Ruiru and Juja Water Services Company, Kenya, a series test using a Diehl Metering volumetric meter and other less accurate meters available showed that over six months the company was recording on average 15 per cent to 20 per cent higher readings from the Diehl Metering meters over the less accurate meters. This meant an increase in revenue and return on investment.

2. Automated meter reading (AMR)

Taking advantage of technology cannot be ignored and must be embraced by WSPs to help reduce commercial losses. Eldoret Water and Sanitation Company (ELDOWAS) in Western Kenya have been instrumental in conducting a pilot for automated meter reading (AMR) in one DMA. The board and senior management have contracted Danco Plastics to install and hand over a fixed network system using Diehl Metering technology to test AMR as a way to reduce commercial losses. ELDOWAS have installed a fixed network system from Diehl Metering. All meters are installed with a radio module that emits a radio pulse every eight seconds. This pulse is read by a fixed receiver, all readings are collected and data sent by GPRS to a cloud-based server. This data is read by an online software that the ELDOWAS team can access anywhere. The software gives GPS data on every meter and provides an alarm for meters that have been stalled or tampered with, or detects overflow, all highlighted on the software and accessible at any time.

An additional option to a fixed network system is a drive-by system. This is offered by Diehl Metering and works very well for remote areas or where the water service provider wants to cover a larger area. A drive-by system uses a hand-held device that can be driven around (or on foot) around the city and will automatically collect the meter readings from smart meters within 500 metres of the device. Therefore by driving around the city all readings can be collected and downloaded onto the software for billing or further analysis. This saves time and gives accurate readings for billing. Similar to the fixed network systems, the alarms are available and while completing the drive-by and analysis, it is possible to see which meters are tampered with or not working properly. The advantages of drive-by or fixed network automated meter reading are: accuracy with no challenges; bills can be sent faster; analysis of water consumption; focus on problem customers; quick intervention on a tampered or faulty meter; analysis on water consumption for better management of resources; and integration between reading and billing.

Image Credit: Diehl

Diehl Metering meter cuts NRW.

AFRICA'S DEBT STILL UNDER CONTROL, SAYS AFRICAN DEVELOPMENT BANK

Image Credit: AfDB

A panel discussion on Africa's financing position was led by Hassatou Diop N'Sele and Simon Mizrahi, director of service delivery, performance management and results.

The African Development Bank (AfDB) remains strong with growing operating revenues and allocable income reaching US$2.5bn, stated the bank group's treasurer, Hassatou Diop N'Sele.

In 2018, the bank earned US$214mn in allocable income, 48 per cent of which has been reinvested in the institution to reinforce reserves and its business growth capacity.

The sums were revealed during the bank's annual meeting in Malabo, Equatorial Guinea on 13 June.

N'Sele said, "The amount of infrastructure financing covered by private sector could double if African countries harness the full potential of their capital markets."

According to N'Sele, a number of African countries could save as much US$1bn on a 20-year loan, if they borrow from the African Development Bank, instead of from the Eurobond market, due to preferable lending rates.

On debt sustainability, Africa's debt has increased in recent years "but not to unsustainable levels". However, Simon Mizrahi, director of service delivery, performance management and results was cautious. "We need to continue to generate financing and spur growth without increasing debt."

C40 CITIES FORUM CALLS FOR URGENT INVESTOR ACTION TO BUILD SUSTAINABLE FUTURE

The C40 cities annual event in South Africa gathered city officials and investors to address climate challenges.

African mayors agreed that inspiring citizens to live sustainably is a good start, but systemic infrastructure development enabled by public and private investment is critical to sustainable city transformation and showcased recent innovations in African cities.

Experts urged the investment community to recognise the potential of these leading cities and promote inclusive financing models with global collaboration being the consensus to deal with the climate mission that transcends national borders.

Executive Mayor of the City of Johannesburg, Herman Mashaba, stressed the global scope of our shared fight for sustainability and the vital role of African city investment in progressing this fight.

He said, "Some leaders argue that the effects of climate change are the result of years of neglect by developed countries. But we need to focus on what every single nation can do right now to improve our shared future. Let us not delude ourselves; a lack of development does not exempt us from taking responsibility for our collective destiny. Rather than dwelling upon who brought us to this point, we must focus on putting sustainable development front and centre in all of our work."

Shaping the energy revolution with new technologies

Rentia van Tonder, head of power for Standard Bank Group, talks to *African Review* about the shift in the industry towards sustainable energy.

Which off-grid solutions have Standard Bank Group funded in the last year? In which countries have they proved popular?

We have embarked on a decentralised off-grid power strategy and have made great progress in identifying major clients and major markets where we see off-grid solutions becoming more active. M-KOPA is the most prominent project that I can reference at this point, which we recently financed. It is a solar system company that provides pay-as-you-go energy solutions to off-grid homes in Kenya and Uganda. We also have approved financing for two other players in South Africa and Ghana.

We are going through the final processes of projects through the Southern African Development Community (SADC), and have progressed quite well with opportunities.

However, the biggest challenge to us in South Africa remains legislation. At the moment, it doesn't allow you to go above 1MW unless you have a NERSA (National Energy Regulator of South Africa) licence. We understand that there are currently a few GW of applications with NERSA for off-grid solutions. Hopefully, an enabling environment for private sector development will open up the current regulatory constraints.

Is there still an increased appetite to fund smaller renewable projects?

Yes, there is still appetite to fund small- to medium-sized renewable projects. It is not only commercial banks and development finance institution (DFIs), but also through the institutional market. Pension funds are quite keen to get involved in the sector early on – not only after commissioning but during construction.

How important are hybrid solutions as an area of development in supplying power remotely as well as to national and regional grids?

Hybrid solutions are very attractive for corporate energy electricity providers, especially for a farmer or smallholdings for example, looking at a combined PV-biomass solution, a PV-battery solution, or even a PV-diesel hybrid system. However, as mentioned before, we are constrained in South Africa with the limit of 1MW, so we haven't made real progress. They are more suited to smaller household clients where they are looking at PV battery storage solutions. I am working closely with the business banking team with these clients, and we are seeing an uptick in our asset finance offerings around these type of solutions.

Image Credit: Standard Bank Group

Rentia van Tonder, head of power for Standard Bank Group.

Standard Bank Group recently issued a statement on its position on financing coal-fired power plants. Was this new policy position towards "green funding", the reason why the bank withdrew financing from the Thabametsi or Khanyisa projects in South Africa?

What we are seeing is that there is a big shift in the energy market towards sustainable energy – specifically clean energy. We have developed this policy in line with our appetite to fund sustainable growth on the continent. Furthermore, it's important to note that we will still consider coal mining projects and coal IPPs, aligned with our policy referencing OECD guidelines. These two projects don't fall within these principle guidelines, which is aligned with the latest technologies.

What impact will this lack of financing have on the coal industry in South Africa and the future of Eskom?

It may have an impact but also force clients to look at cleaner technologies across the board, which will probably be more sustainable in the long term. The Thabametsi or Khanyisa plants are part of the IPPs, which stand completely separate from Eskom. They are being procured by the IPP unit, so Eskom, will be the sole off-taker.

What are the other important trends to watch for in the energy sector in Africa this year and beyond?

I'm a strong believer in flexible power solutions. In order to be more sustainable in the long run for any country, you have to look at options where you are not entirely dependent on big hydro schemes or large coal projects where there may be challenges related to fuel supply. More countries are becoming open to flexible solutions where they can support renewable projects at a smaller scale, which are more modular in size. Governments are looking at opportunities where there is regional integration. It is something that we see going forward as some countries have enough capacity while others are developing excess capacity. Increased investment in transmission development and implementation will remain an important driver for growth.

Is there anything else/ a major message that you would like to share with our African Review readers?

I think the one thing as a bank that we have recognised over the last year, which is becoming more visible, is this shift in the energy revolution towards new technologies and storage.

Many researchers will tell you that it is still not cost-efficient. But there are pilot schemes where renewable energy combined with storage can become a potential baseload consideration.

What we have seen over the last year, is more work being done around bankability and affordability of storage as an innovative solution: an add-on to renewable energy. It's supporting renewables to become a baseload type option. Although it is small-scale, we are doing some research where it has been done successfully at scale. The impact for financiers is to understand how to review the technology risk around these new applications. Obviously, it's a bit different to reviewing a combined renewable storage solution, supporting much higher output in terms of electricity generation, compared to just a standalone renewable energy solution.

At the moment, we are focusing on the bankability of the technology related to these battery solutions rather than funding these projects yet – but we do see it as a developing trend, which is quite exciting. ■

Africa is strongest cargo performer globally

The continent continues to buck the global trend of poor air freight growth thanks to continued demand for agricultural exports such as coffee to traditional markets. Samantha Payne reports.

Africa was the only country in the world to report the strongest growth in air freight volumes, according to the latest IATA Analysis.

Most regions experienced a deterioration in freight tonne kilometre (FTK) year-on-year growth, with the weakest results in Europe, the Middle East and Asia.

But air cargo volumes in Africa and Latin America bucked the global trend in April and grew by 4 per cent and 3 per cent respectively in compared with the level a year ago.

In Africa, this was largely linked to continued demand for agricultural exports, such as coffee and fresh flowers to traditional markets such as Europe, said Glyn Hughes, global head of cargo at the International Air Transport Association (IATA).

The IATA report stated the strong FTK growth in late 2016 and into 2017 has been only partly unwound, and international FTKs for African carriers are still more than 30 per cent higher than their level of three years ago.

Hughes explains, "Cargo volumes in Africa have risen by above 25 per cent in the past three years, as operators like Ethiopian Airlines have used their geographical advantage and strong economic growth to invest in upgrading fleets to leverage air export growth."

Ethiopian Airlines has been successful in taking advantage of demand for coffee, seeds and flowers to move goods globally, more than doubling the amount of goods transported in the past decade.

Hughes explains however that the lack of connectivity for travel within Africa, combined with tariff barriers and lack of consistency across the border regulations still hinder the flow of goods and services in Africa.

> "Cargo volumes in Africa have risen by above 25 per cent in the past three years, as operators like Ethiopian Airlines have used their strong economic growth to invest in upgrading fleets to leverage air export growth"
>
> GLYN HUGHES, GLOBAL HEAD OF CARGO AT IATA

But it is hoped the creation of the Single African Air Transport Market, a flagship project of the African Union Agenda 2063 – seeking at liberalising air transport and improving air access to markets – will create opportunities for much larger movement of goods by air, especially perishable goods, which are big components of some African economies.

The report stated global instability are likely to continue to impact air freight outcomes in the coming months in Africa and other parts of the world especially with the escalation in US-China trade tensions. There has been weak activity out of important air freight hubs such as Hong Kong and Shanghai. There has also been uncertainty regarding Brexit, especially with a new British prime minister due to take office next month. The report suggested, "this may result in an increase in export orders as businesses build-up inventory as a precautionary stance, 'just in case'. Any such effect, however, is likely to be temporary and offer only a partial offset to the broader weakness".

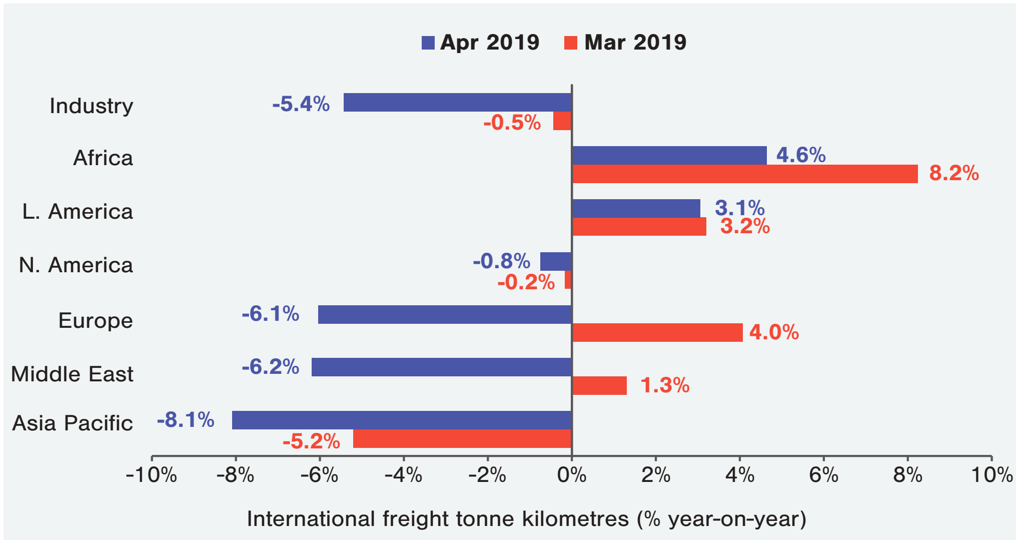
"Air freight volumes in Africa have been affected by global trade tensions and a more general shift towards 'creeping protectionism' in many countries since the global financial crisis. Global trade volumes have fallen over the past year and this has weighed significantly on air cargo flow," adds Hughes.

International FTK growth outlook

The report stated industry-wide FTK growth fell again in April, with annual growth remaining in negative territory. FTKs were 4.7 per cent lower than their level compared to the same period last year.

For North America and the Middle East, the latest outcomes are weaker, with annual growth of -0.8 per cent and -6.2 per cent year-on-year, respectively. For the Middle East carriers, despite improvement in air freight volumes in quarter two and quarter three of 2018, a downwards trend is continuing, the report continued.

It said, "While also impacted by the global headwinds, region-specific challenges, including the impact of structural changes in the industry, have contribute to a challenging business environment.



International FTK growth. *Source: IATA Economics, IATA Monthly Statistics*

> "Air freight volumes in Africa have been affected by global trade tensions and a more general shift towards protectionism"
>
> **GLYN HUGHES, GLOBAL HEAD OF CARGO AT IATA**

Looking at the market-level data (segment basis), freight volumes to and from Europe and Asia Pacific are growing, but a double-digit decline for the key North America market highlights some of the issues facing the region's carriers."

Air freight volumes in Asia-Pacific reduced by 8.1 per cent, compared to the level of a year ago.

According to IATA analysts, this weakness experienced in the region is a call for concern as it accounts for around 32 per cent of total international FTKs, and the latest round of US tariffs will "likely negatively impact sentiment and activity in the region further". ■

The Sprinter is part of Mercedes-Benz Vans range of products.

Image Credit: Mercedes-Benz

Sprinting into action

The new Mercedes-Benz Vans Sprinter is the latest edition of the best vehicle segment that has officially launched in the Middle East and North Africa.

The new Mercedes-Benz Sprinter offers every customer a model tailored to their needs, the company said.

It has already sold more than 3.4 million units in over 130 markets across the globe.

Thomas Greipel, general manager of Mercedes-Benz Vans Middle East and North Africa (MENA), said, “Today, the third generation of the Sprinter is bound for even greater success in the MENA region, as it continues to encompass innovative technologies while also maintaining the Mercedes-Benz standards of quality and robustness.”

A range of optional safety and assistance systems is now available from Mercedes-Benz Vans that were previously found in passenger car series.

These include the radar-based distance control system DISTRONIC, Active Brake Assist and Active Lane Keeping Assist.

With up to 17 m^3 load capacity, the new Sprinter is also the leader for payload. Three wheelbases, three vehicle heights and various body variants.

Lower fuel consumption and reduced in-engine friction are part of the competitive lineup of the third generation Sprinter, with the option of a six-cylinder engine for countries where the diesel fuel complies with the Euro VI emission standards. It has a displacement of 3.0 litres and delivers 140 kW (190 hp) and 440 Nm of torque at 1600 to 2600rpm. The four-cylinder diesel engine available in countries where the diesel complies with Euro V and Euro III emission standards, has a displacement of 2.1 litres with rear-wheel drive and all-wheel drive, generating a choice of two outputs: 84 kW (114 hp) and 120 kW (163 hp).

Diverse drive variants

Rear-wheel or all-wheel drive, the new Sprinter covers two drive variants, and can therefore be optimally configured for the relevant transport requirement and operating profile.

In the rear-wheel drive variants that are available throughout the region, thanks to separation of the drive and steering, the classic advantages lie in optimum ride comfort, a smaller turning circle and more agile handling. Rear-wheel drive also allows more control when towing a trailer and at the limits of the maximum permissible gross vehicle weight.

Air conditioning system

The desire for multiple individualisation options is continued in the temperature regulation, with a new advanced air conditioning system ideal for the MENA region.

Found in a separate control panel below the display for the telematic system, the modular construction of the ventilation system allows both the integration of a standard heating system and the use of a roof-mounted air conditioning system with a separate cooling circuit, for example, for passenger transport in hot countries. The high-performance overhead air conditioning system supplements the air conditioning at the front to up to 7 kW with an additional 11 kW of rear cooling output, both running on independent circuits, to reach a possible combined total of 18 kW to deliver the ultimate in climate comfort in the passenger compartment. ■

New Quester for MEENA to accelerate smart logistics growth

UD Trucks has unveiled the New Quester for the Middle East, East and North Africa (MEENA) in Manama, Bahrain.

The new trucks are under production and will be available by the end of this year.

This new version of the brand’s well-established heavy-duty truck introduces a range of enhancements that will enable logistics companies across the region to tackle critical industry challenges and boost their bottom line through smart logistics.

The New Quester from UD Trucks.

Fuel efficiency, productivity, connectivity, and supporting and developing drivers are priorities for fleets and transport companies in the MEENA region and UD Trucks says the New Quester will address these challenges with new features such as ESCOT (Easy Safe Controlled Transmission) and UD Telematics.

The 2019 edition of Quester introduces major features such as ESCOT automated manual transmission, engines with higher horsepower and telematics to deliver greater fuel efficiency, productivity, driver efficiency, safety and uptime.

“The truck industry in the region is changing rapidly and customers are increasingly conscious of the total cost of ownership. With the New Quester we have the ideal product to address these needs. Moreover, New Quester combines the best of three worlds: UD Trucks’ strong Japanese heritage and craftsmanship; Volvo Group’s innovative technology; and our strong local support for our valued customers, which we call our Gemba spirit.”

BEST PAYLOAD IN THE INDUSTRY
Payload up to 20 ton on a 6x4 chassis with Large "C" section chassis

CONTINUOUS OPERATION
Higher autonomy thanks to the Cursor engine that allow to reduce fuel consumption

OUTSTANDING TCO
Thanks to 11.2% fuel saving tested by TÜV on the New Stralis, optimised driveline and disk brakes

MODULAR AND MISSION-ORIENTED RANGE
New front axle (off road) that guarantee an higher ground clearance
Robust chassis for light off-road missions

ON-ROAD EXCELLENCE.
OFF-ROAD ENDURANCE.

IVECO
Your partner for sustainable transport

BBOXX secures loan to accelerate clean energy access in Rwanda


Image Credit: Bread for the World/Flickr

BBOXX is expanding its operations to bring clean, reliable and affordable energy in Rwanda.

BBOXX, the next generation utility, has secured an US$8mn loan from the Facility for Energy Inclusion Off-Grid Energy Access Fund (FEI OGEF) to accelerate BBOXX's solar home systems initiative across Rwanda.

The Rwandan Franc-denominated loan aims to enable BBOXX to expand its operations and bring clean, reliable and affordable energy. So far, BBOXX has installed around 80,000 solar home systems in customers' homes and businesses in Rwanda. The innovative local currency loan mitigates the company's medium-term FX related risks, as BBOXX customers make mobile money payments in Rwandan Francs to pay for their solar electricity.

The deal is set to help drive BBOXX's collaboration with the Government of Rwanda and make strides towards meeting its national electrification targets.

Apart from this, BBOXX secured US$31mn from Africa Infrastructure Investment Managers (AIIM) in January 2019 to scale its Rwanda operations, alongside its roll-out in Kenya and the Democratic Republic of Congo.

Mansoor Hamayun, CEO and co-founder of BBOXX, commented that the deal is expected to advance the company's goal of transforming lives and unlocking economic potential through access to energy.

FEI OGEF is a US$100mn blended finance debt fund that provides financing to support the growth of innovative companies in the off-grid energy sector. The fund is managed by LHGP Asset Management, the asset management arm of Lion's Head Group. FEI OGEF is the off-grid window of the African Development Bank (AfDB) flagship initiative, Facility for Energy Inclusion. It has received funding from the AfDB, the Nordic Development Fund, the European Union, the Global Environment Facility and All-On Nigeria as well as debt financing from Calvert Impact Capital and the Prudential Insurance Company of America.

PORTUGAL WARMLY WELCOMES ENERGY FORUM

The Africa Energy Forum from 11-14 June, brought governments, utilities, power developers, financial institutions, power technology providers, EPC contractors and consultants under one roof to discuss investment and projects in Africa's energy sector.

The forum's mission is to connect decision-makers within the energy sector to drive development of energy projects and electrify the continent faster. It also aims to recognise the increasing role of women in the sector, as mobilisers in small communities and industry influencers running the brightest and boldest companies in the energy space across the globe.

Simon Gosling, managing director of EnergyNet, the event organisers, said, "The forum's shift to Lisbon has been warmly welcomed by the government of Portugal who continues to put partnerships, knowledge and technology transfer and economic opportunities in the hands of all that welcome them. This is true in the Lusophone countries who are seeing investment in their natural resource and electricity sectors."

AZURI TECHNOLOGIES ANNOUNCES US$26MN EQUITY INVESTMENT

Azuri Technologies, a pay-as-you-go solar home solution provider, has announced a strategic investment of US$26mn, led by Fortune Global 500 company Marubeni Corporation with additional participation from existing shareholders including FTSE 250 company IP Group plc.

This strategic investment is set to accelerate Azuri's market growth plans in both East and West Africa and open up new opportunities for the business.

Azuri Technologies provides solar home systems to off-grid consumers in sub-Saharan Africa on a pay-as-you-go basis. These systems aim to enable households without access to the grid to benefit from modern conveniences, such as satellite TV.

Japanese corporation Marubeni has global interests in energy and substantial experience in Africa. The capital infusion will enable Azuri to accelerate expansion in existing sub-Saharan Africa markets and roll out its solar lighting, TV and services into markets, with a focus on enhancing the millions of lives living without access to the grid.

Yoshiaki Yokota, chief operating officer, power business division at Marubeni Corporation, said, "The global energy market is evolving rapidly, with the introduction of new renewable technologies and energy-efficient devices. We are delighted to be a strategic partner of Azuri as a market leader and see their solar home solutions and services as catalysts for change in the Africa energy sector and beyond."

Jamie Vollbracht, partner at IP Group, added, "As an early investor in Azuri, we are pleased with its growth to date, with over 150,000 systems sold, positively impacting off-grid households in Africa. Today we are delighted to welcome Marubeni to the business to help power the next exciting phase of growth for Azuri."

BRIEFS

MAN Energy Solutions wins 'Africa Europe Award'

Image Credit: MAN Energy Solutions

(Pictured middle): Marc Grünewald, VP at MAN Energy Solutions, accepting the Africa Europe Award.

MAN Energy Solutions has won the 'Africa Europe Award 2019,' which was presented this year for the first time. Marc Grünewald, vice-president at MAN Energy Solutions, accepted the award on 28 May in Frankfurt. The award, a part of "Africa Europe Week," recognises the company's efforts in promoting German-African economic relations and establishing a sustainable and efficient local power supply on the continent.


Image Credit: Ralf Vetterle/Pixabay

Land is secured and suitable for first phase implementation of a 150MW coal plant in Mozambique.

Kibo Energy continues development on Benga Power Plant

Kibo Energy PLC continues to advance its strategy on constructing and operating a 150-300MW coal-fired power plant with fuel provided by local coal producers at its Benga Power Plant in Mozambique.

The company has completed a Base Case DFS and grid integration solution in collaboration with STEAG Energy Services. The study reports were submitted to the Ministry of Mineral Resources and Energy and Electricity of Mozambique.

Africa genset demand to remain steady

Opportunities for genset providers across Africa continue to emerge across a wide range of industries as a result of the continent's inadequate power system. Martin Clark reports.

First generating sets at the new Clarke Energy KOHLER-SDMO Nigeria plant.

The demand for gensets of all shapes and sizes remains steady right across Africa.

According to one research report the diesel genset market in Africa is projected to grow at about 3.5 per cent per year through to 2024.

That spells good news for major players in this segment, the likes of Cummins, Caterpillar, FG Wilson and Perkins, among other leading industry providers.

For the most part, that growth is based on the usual high demand-supply gap for electricity in many territories, a problem that has long blighted Africa's economic development.

However, increased industrialisation, plus strong population growth in larger markets such as Nigeria, Kenya and Tanzania, are shaping the sector and creating opportunity for genset makers.

The report (Africa Diesel Genset Market (2018-2024): Market Forecast by kVA Rating, by Applications, by Countries, and Competitive Landscape) states that the 5kVA-75kVA segment will capture the greatest slice in overall market share.

This is due, it says, to the growth in the residential market and the telecommunications sector, which are prime users of low-rating diesel gensets.

These gensets are expected to maintain dominance in the market due to their low cost and widespread application across the continent and in multiple industries, the report states.

Growth in the mining sector and in oil and gas exploration, notably in countries such as Tanzania, Ghana, and Egypt should also spur the market for diesel gensets.

The extractive industries have long provided a rich seam of work for many international energy suppliers. The manufacturing sector likewise remains integral, accounting for a large proportion of overall revenue share due to the significant use of high rating diesel gensets.

Other top players serving this buoyant sector include Himoinsa, Kohler SDMO, Generac, Yanmar, Kirloskar Electric, Wacker Neuson, MTU Onsite Energy Corp, JMG Limited, YorPower Ltd and Mikano International.

> "The unstable electricity supply at Blanket [mine] reflects a lack of investment by the government-owned supply agency to maintain the grid"
>
> **CALEDONIA MINING**

Market opportunities

One of the largest heavyweight players, Aggreko, which offers a full range of genset solutions, has reported underlying global revenue growth of 8 per cent, its highest in years, for the full year just gone.

Its 2018 power solutions order intake for the large-scale utilities sector included major projects such as a 50MW HFO contract in Burkina Faso, plus extensions to an existing 100MW contract in Benin.

Nonetheless, on the industrial side, Africa revenues decreased 4 per


CompAir
by Gardner Denver
Reliability.
Efficiency.
Flexibility.
CompAir
L 132 RS
GERMAN
ENGINEERING
DESIGN&MANUFACTURE
Rotary screw compressors
• Premium efficiency airend designed & built in-house
• Cutting edge perfomance & efficiency
• Fixed or regulated speed for significant energy savings
• Covered by the Assure warranty programme for total peace of mind
L-Series from CompAir. No compromise.
For more information, contact us today
CompAir South Africa (Pty) Ltd, 255 Berrange Rd, Wadeville 1428, South Africa
sales@compairsa.com
Tel: 0861 246 824
Branches: JHB 011 345 2200, CPT 021 535 5032, DBN 031 792 4270, PE 041 487 2867
www.gardnerdenver.com/industrials

cent, driven by eastern Africa and off-hire of certain mining projects.

It cited off-hire problems in Zimbabwe as well as delays to receiving payments in parts of Africa, due to customers' liquidity positions and their limited access to foreign currency.

Zimbabwe, a mining economy, has been hurt in recent times by crippling power cuts following reduced output at its largest hydro plant and ageing coal-fired generators.

While consumers and businesses suffer, it is a climate that may open doors for genset companies.

Caledonia Mining cited "difficulties with the electricity supply" in a recent update on its Blanket gold mine in Zimbabwe, hinting that it might look into alternatives to grid supply.

"The unstable electricity supply at Blanket reflects a lack of investment by the government-owned agency to maintain the grid – as there is unlikely to be an early resolution to this problem, management is considering measures to reduce Blanket's dependence on the grid for its electricity supply."

Nigeria investment

Nigeria is another prime market where a weak national power grid continues to fuel demand for gensets, not only in the vast oil and gas industry, but across multiple sectors.

In Africa's most populous state, with a fast-rising and largely unmet energy demand, it is bringing with it new investment.

Clarke Energy, working alongside sister company Kohler-SDMO, this year assembled the first diesel genset at their new assembly plant in Lagos, opened in order to improve the costs and availability of gensets locally, while creating jobs in the country and expanding existing homegrown capabilities.

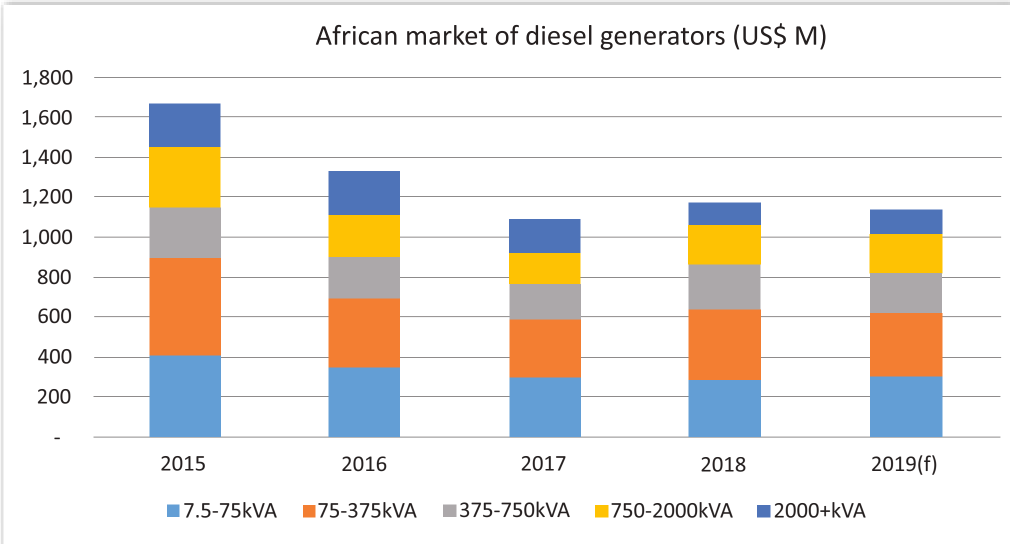


Image Credit: PowerGen Statistics

Portability and logistics are integral to success in remote environments.

Image Credit: Pramac

> "The top two markets, Nigeria and Egypt, are still expected to grow by 6 per cent and 2 per cent respectively in 2019"
>
> **POWERGEN STATISTICS**

The first diesel generators off the production line, warmly welcomed by Yiannis Tsantilas, Clarke Energy's new managing director for Nigeria, and David Raison, Kohler-SDMO's Africa regional director, were the Kohler-SDMO J44 and J33 soundproof version.

These units have been sold to historical Kohler-SDMO distributors in Nigeria.

The companies stated that it was necessary to set up a local facility to bolster competitiveness and profitability, due to import taxes imposed by the government.

The new site maintains the highest manufacturing standards using technicians trained in the UK and France.

Clarke Energy is also the official distributor of Kohler power solutions in other African territories such as Tanzania and Tunisia.

Africa needs a diversified approach to energy application: Aggreko

John Lewis, managing director at Aggreko in Africa, shares his view on Africa's future energy potential, stressing that a universal energy approach is hugely limiting due to the vast differences across the countries in terms of climate, resources and economic position.

Africa has seen an unprecedented pace of development. Since the inaugural Africa Energy Forum (AEF) over two decades ago, huge strides have been made across the continent which is now home to some of the fastest-growing economies in the world. This rapid development has created boundless opportunities and with that, significant challenges.

The transformation of Africa has challenged the energy sector players to think differently and innovate to find better solutions for some of the most complex challenges. However, one thing that is far too often overlooked is the uniqueness of each country. "Africa" as a label doesn't take into consideration the vast differences across the continent in terms of climate, resources, the stage of development and economic position. To take a one-size-fits-all approach is hugely limiting.

Africa's development is happening against a backdrop of significant change in the wider energy sector. In the past decade, we have experienced the beginning of a global transition in power generation and consumption, which is being driven by four major trends including decarbonisation, decentralisation, digitalisation and demographic change. This transition is having a significant impact on the production and distribution of energy across each country in Africa. What's more, they are all experiencing the transition in different ways and at a different pace.

With reliable, cost-effective and sustainable power solutions, Africa represents some of the greatest opportunities for economic and societal development in the world.

Image Credit: Adobe Stock

"We are faced with the challenge of finding opportunity across a fast-changing continent where each country's market is developing at a different rate while adapting the challenges of the energy transition. To do this successfully, in my view, solutions need to consider three key elements: innovation, flexibility, and feasibility. I will explore each of these elements in this article," Lewis commented.

"Innovation is key for one very simple reason: it drives the efficiency needed to address customer challenges individually and offer them bespoke, tailored solutions. We all need business models centred around innovation to have a better understanding of our customers, the environments in which they are operating, and to then run these projects efficiently and effectively to meet their complex challenges."

Bridging the gap between demand and generation

As the demand for greener energy solutions continues to grow, the major challenge for the market is intermittency of supply. Combining renewable energy sources, such as solar, with gas generation or even battery storage is an effective way to bridge the gap between demand and generation, supporting decarbonisation efforts while ensuring a consistent power supply.

"At Aggreko, We are evolving both our technology and commercial offerings to make sure we are best positioned to provide our customers with the solutions that best fit their needs," Lewis added.

To provide solutions to a continent as diverse as Africa, the need for flexibility is paramount. To best serve the needs of each market, they need to be seen in isolation rather than a collective. The variables are very significant from country to country.

"We approach each project with new thinking to make sure we provide the most relevant answers to our customers' power challenges, drawing on our network of local employees and expertise. Around 87 per cent of Aggreko's workforce in Africa is local employees who provide us with market-specific insight that allows us to provide better solutions for our customers. Our mobile and modular power solutions, delivered by our local experts, are bespoke to help our clients overcome even the most complex of energy challenges."

There are still many barriers to entry for African nations to capitalise on power solutions. The appetite for development is clear across the continent but the feasibility of achieving ambitions is hindered by financial and regulatory limitations.

That being said, steps are being taken in the right direction. The UK Export Finance is providing greater access to funding provisions that will drive new, innovative energy projects across African countries. Aggreko is pleased to have been working closely with them to roll out this much-needed initiative. But more needs to be done. That's why we are calling for the UK Government to remove the funding cap for UK Export Finance, thereby greatly increasingly the scope of financial support and, ultimately, delivering more, better solutions across the market.

"The countries in Africa represent the most challenging and the most exciting frontiers for technology innovation. With reliable, cost-effective and sustainable power solutions, these societies represent some of the greatest opportunities for economic and societal development in the world. The future is being written across this continent, and we all have an important role to play in supporting African countries' ongoing global development," Lewis concluded. ■

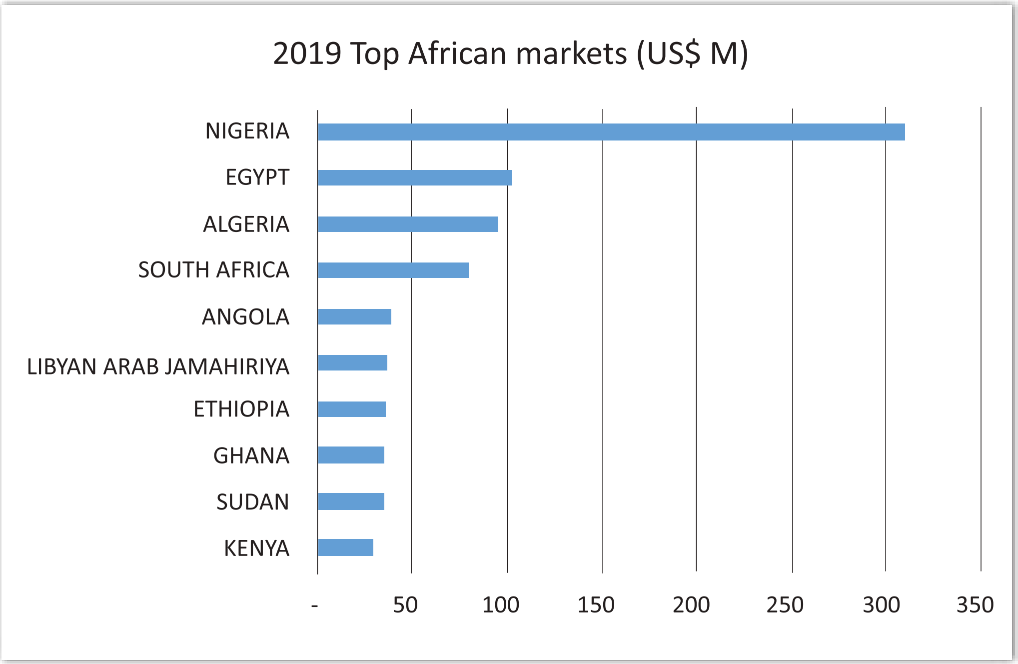


Image Credit: PowerGen Statistics

Innovation

At the same time, leading manufacturers continue to improve and refine their designs to better serve all markets.

Caterpillar recently introduced the Cat XQP30, a 50/60 Hz mobile diesel generator set rated for 30 kVA prime power, available in two different configurations, one to meet stringent European Union emission standards and another providing low brake-specific fuel consumption (BSFC) for customers in non-regulated territories.

The robust, rental-ready design features forklift pockets, dragging points and a lifting arch for ease of transportation, and heavy duty air cleaners and generator insulation to ensure durable operation in harsh work environments.

Hybrid technology is also making great headway, with Cat, among others, actively engaged in various projects including a number of major mine sites in West Africa, drawing on solar power together with traditional genset supply.

The goal is to trim the overall cost of energy and at the same time reducing environmental impact as well as erode any dependency on grid-based supply.

Far away from Nigeria, on the other side of the continent, Pramac, a part of the Generac group, created a hybrid solution specifically designed and built for telecom applications, that is now supplying off-grid towers in eastern Africa.

Pramac's Hybrid Solution GTW14P has a variable speed DC generator, a OPzV battery pack, and a remote control system. It says the product can save 70 per cent of costs compared to traditional solutions.

Thanks to the remote control system, clients can control the genset's status anywhere, anytime, via laptop, smartphone or tablet, while 1,000-hours kit free maintenance ensures longer maintenance intervals.

The company says the adoption of the hybrid will increase the power generation system's lifetime up to seven years compared to traditional AC diesel genset solutions.

Image Credit: Caterpillar

The CAT XQP30 mobile diesel genset.

PowerGen Statistics: market forecast

According to PowerGen Statistics, despite a relatively good growth in 2018 and an economic growth planned in 2019, the African market of diesel generators is forecasted to slightly decline by 3 per cent in 2019 to US$1.1bn, but set to grow in 2020 by 1 per cent and by 3.5 per cent in 2021.

The analyst firm states in 2018, the market has been mainly driven by the rebound in commodity prices. This has helped oil exporters (notably Algeria, Angola, Congo, Gabon, Libya, and Nigeria) recover but also pushed up inflation in oil-importing countries. However, the recent trade tensions between the USA and its main trading partners could reduce world economic growth, with repercussions for Africa. These tensions, together with the strengthening of the US dollar, have increased the volatility of some commodity prices and pressured the currencies of emerging countries. Moreover, political instability in countries such as Algeria and Sudan, and security problems in some areas could weaken economies.

The top two markets, Nigeria and Egypt, are still expected to grow by 6 per cent and 2 per cent respectively in 2019, but Algeria will decline by 2 per cent due to political uncertainty and Southern Africa will see a 10 per cent decline in growth due to low public and private investments.

Morocco focus

Interestingly, Morocco is set to grow by 13 per cent in 2019, reaching US$23.2mn sales of diesel generators, which have been boosted by the agriculture and manufacturing industries, as well as supported by significant foreign investments. Quantum Global ranked Morocco as the most attractive country for foreign investment in Africa in its Africa Investment Index 2018. Generators below 75 kVA (+10 per cent) and above 750 kVA (+90 per cent) will be the most popular product ranges.

The generator market in Morocco is dominated by local Moroccan assemblers (24 per cent market shares) as well as French, Italian and Spanish made generators. ■

Re-imagining waste-to-energy for micro-generation

Kate Stubbs, business development and marketing director from Interwaste writes on the huge economic opportunities linked to the growing waste-to-energy market, which is set to soar to US$43bn in 2024.

Image Credit: Clarke Energy

Kate Stubbs.

The exploration of alternative energy sources and projects has been all the 'buzz' again, particularly in response to challenges Eskom continues to face and the looming reality of further loadshedding across the country as we head into the winter months.

But, to really explore the opportunities that waste can present as an alternative fuel source for energy, it's important to first understand the current landscape and that innovative and effective solutions for waste management are fundamental to the contribution and achievement of carbon emission reduction targets and future sustainability in the country.

Curbing the looming waste crisis

Current statistics highlight that South Africans reportedly generate 108 million tonnes of waste per annum, where only 10 per cent of this waste is currently being recycled and the remaining 90 per cent disposed at landfill sites, which are fast approaching full capacity.

In efforts to not only curb the potential looming waste crisis, but also to institute enforceable mechanisms to drive change in behaviour, the South African Government has already released and continues to release changes to the National Environment Management: Waste Act of 2008 – aligned to the theme of diverting waste from landfills.

These changes are also in line with global trends of zero waste to landfill and promoting 'circular economy' thinking, which aim to challenge the status quo and encourage a mind-set change around waste and waste management.

A circular economy, for instance, is a reformative system in which resource input, waste, emission and energy leakage are minimised. This means eliminating unnecessary wastage and waste generation that would eventually be disposed of at a landfill site. This can be achieved by optimising resource efficiency through sustainable product designs, recovery, reuse and recycling of products, or energy production through the systematic approach of the waste hierarchy.

With this in mind, it should be stated that as there are already some public and private sector led zero waste to landfill interventions and initiatives underway across the country, these may not leave sufficient remaining waste available to justify the spend in developing a standalone waste-to-energy micro-generation project to serve a singular site. However, there is one possible structure that can be investigated in the South African and African environments.

Pooling non-recyclable refuse for derived fuel micro-generation

While one site alone, for example, an industrial site like a mine, may not produce sufficient quantities of suitable waste to make the business case for developing a waste-to-energy power project, there is perhaps great opportunity for a collective of mines and/or other industrial businesses, as well as the local municipality – within a specific geographical area of operation, to potentially pool their suitable non-recyclable/recoverable (i.e. recoverable through conventional means) wastes to such an end.

Successfully implementing a refuse derived fuel (RDF) plant will take buy-in and collaboration between public and private sector as well as the surrounding community; though there are a number of potential benefits to be gained, including, but not limited to:

- Waste is diverted from landfill, which saves landfill space while reducing negative environmental impacts and greenhouse gas emissions
- Energy value is derived from waste through alternative uses
- RDF energy is considered green energy that yields carbon credits
- Job creation through resource recovery
- Lower ash content than conventional fuels (e.g. coal), reducing particulate emissions

Though, again, the business case will still be very dependent on the available volumes of suitable waste to sustain production and power outputs – this model of project is perhaps more feasible for remote and isolated areas that have little access to the national power grid or sufficient waste removal support services. Additionally, in such circumstances there may be a business case for exploring potential biogas projects from human waste and other biodegradable food wastes. Nevertheless, the viability and tangible benefits would depend on the volume of waste actually generated, and whether or not one could identify a bona fide use for the biogas generated.

We are inspired everyday by how perceptions of refuse and waste continue to change and evolve as worldwide governments, industries and citizens, alike, are pushing the hand of the waste industry to innovate around effectively repurposing as much waste as possible into something useful.

To look at it within a global perspective; the waste-to-energy market is expected to grow from US$28.4bn in 2017 to almost US$43bn in 2024, representing a massive economic opportunity to establish new industries and/or revenue streams too.

It is not surprising then that the waste-to-energy agenda in South Africa – and Africa for that matter – is one of the most prominent aspects at the forefront of waste management leadership today. It goes far beyond traditional recycling and – with a vision for integrated and sustainable solutions at the core of our business – we are proud to be able to bring advanced technology and solutions to South Africa's shores; to ensure waste-to-energy opportunities can be realised locally. ■

Providing grid stability with a modular power plant

Wärtsilä introduced its Wärtsilä Modular Block solution at the Africa Energy Forum, in Lisbon on 11-14 June. African Review caught up with Wale Yusuff, business development manager, North Africa, Nigeria and Ghana, to find out more.

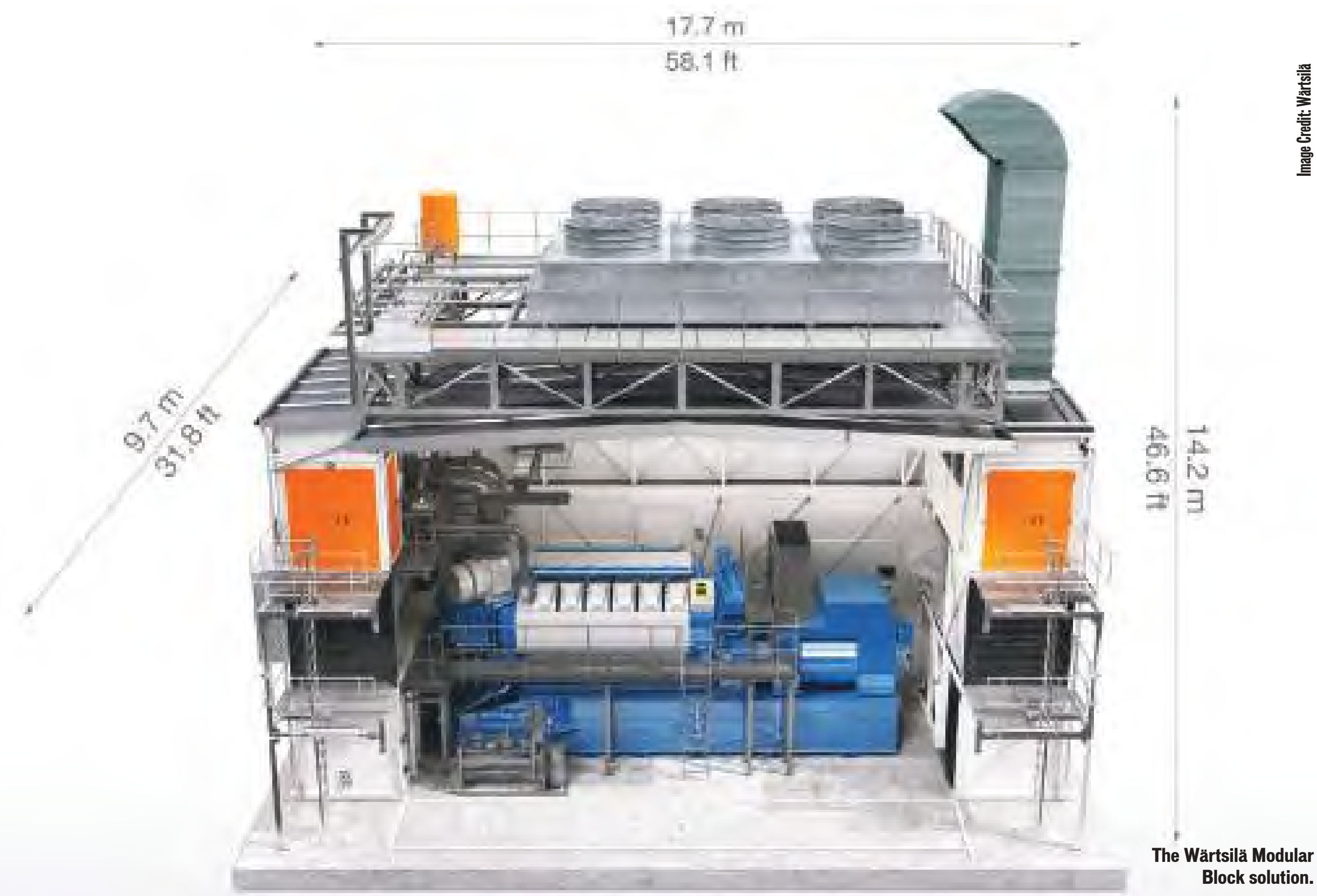


Image Credit: Wärtsilä

The Wärtsilä Modular Block solution.

Please tell us more about the modular block solution.
The business environment now requires solutions that are reliable, modular and flexible. Power plants are no different. The Wärtsilä modular block is a pre-fabricated expandable enclosure for sustainable power generation. The primary goal was to also bring state-of-the-art Wärtsilä medium speed engine technology to market areas where it wasn't feasible using traditional solutions based on custom designed permanent buildings. An additional objective was to improve the economy of power plant construction in areas where site labour costs are very high, or where skilled labour is not readily available.

Why is it good in providing grid stability and balancing renewable energy sources?
Wärtsilä Modular Block incorporates the highly efficient 34SG spark ignited gas engines. Because the Wärtsilä engine power plants can be quickly ramped up and down as needed, the Wärtsilä modular block is ideal for providing grid stability and integrating renewables sources with intermittent production. As well as natural gas, our engines can also run on biofuel for a fully renewable solution. A standard engine of this type can reach full power from standstill in just two minutes, and a specialised version for data centres, which is compatible with the Wärtsilä Modular Block as well, can do so in less than one minute.

> "The solution has been developed to serve customers searching for a temporary power generation solution without a permanent building structure"

Why is this solution relevant for African businesses? Will it solve the issue of unreliable power supply for African firms?
One of the main causes of unreliability of power supply for African businesses, is the issue of unreliable power supply from the grid due to ageing infrastructure, fuel supply etc. The Wärtsilä Modular Block solution addresses

these concerns by offering a solution that is based on the highly efficient 34SG medium speed spark ignited gas engine. The pre-fabricated enclosure incorporating the engine and the related auxiliaries means that the power plant can be installed quicker, and in the event of business expansion, the solution also offers the ability for scalability as well. This is also ideal for utilities and IPPs that serve these industries.

How will this support IPPs and utilities across Africa to ensure fast and reliable power?

The solution has been developed to serve customers:

- In need of solution which can be delivered and installed quickly
- Looking for a highly modular solution that may be used in the same form in multiple locations
- Searching for a temporary power generation solution without a permanent building structure
- In the data centre, mining, and renewables power generation industries wishing to firm up their intermittent generation capacity and rental businesses.

Wärtsilä can offer the Wärtsilä Modular Block as a full engineering, procurement and construction (EPC) project. The solution is easily expandable to accommodate increased energy demand, and to respond to the fast growing customer business needs. The concept also enables dismantling and relocation, meaning it also offers new business models, such as power as a service or rentals. This basically addresses the concerns of industrial, IPP and utilities customers across Africa.


Image Credit: Wärtsilä

Wale Yusuff.

The Wärtsilä Modular Block solution is inherently suitable for small installations and thus ideal for distributed power generation. The Wärtsilä 34 engine technology is reliable and proven use for more than two decades in various locations and conditions. As there currently are more than 2,000 units in operation globally, a wide service network is existing and availability of spare parts is good.

> "The Wärtsilä Modular Block solution is suitable for small installations and thus, ideal for distributed power generation"

Anything else you would like to share with our readers?

All the benefits of a containerised solution but with added reliability and efficiency. Like traditional containerised solutions, it can be installed in a matter of weeks, and can be dismantled and relocated, but because it houses medium-speed engines it offers increased efficiency and lower lifecycle costs. Our medium-speed engines are reliable, highly efficient and have lower lifecycle costs than containerised high-speed engines or gas turbine solutions.

Design is scalable in terms of power output and number of units. Design is configurable, Wärtsilä Modular Block can accommodate the external systems you need, like emission abatement, heat recovery and power offtake. ■

Angola is next in line for South African energy companies

South African companies are increasingly interested in pursuing Angola's vast oil and gas investment opportunities, following the Angola Oil and Gas Conference in Luanda, last month.

As Angola works in attracting foreign investors from the Americas, Europe, the Middle East and Asia, its closest African neighbours are also entering the race to tap into vast investment opportunities in Africa's second biggest oil producing market.

Beyond the traditional African oil players, most of them coming from Nigeria, South African companies have increasingly showed interest in regionalising and expanding their businesses beyond their home country.

President João Lourenço chose South Africa as his first state visit destination as president, which was followed in 2018 by a South African trade and investment mission to Luanda.

While Mozambique's LNG mega projects are seen for many South African construction, services and supply companies as very attractive and nearby opportunities, a sizeable and expanding market such as Angola has also appeared on their radar in recent years.

It is notably the case of South Africa's state-owned giants, such as the Central Energy Fund (CEF), in charge of both developing a robust domestic energy market and securing the energy supplies South Africa needs to support its growing economy. Under the Integrated Resources Plan set to be adopted by the country this year, 8,100MW of additional gas-to-power capacity is to be added in South Africa by 2030. South Africa also remains sub-Saharan Africa's largest refiner and is planning additional refining and petrochemicals units that will require crude oil and natural gas supplies that do not exist domestically.


Crew boat and supply vessel at offshore oil and gas platform.

Image Credit: Adobe Stock

It is hence no surprise that Angola, with its lucrative opportunities and reformed business environment, hosted a strong delegation of South African companies during the Angola Oil & Gas Conference 2019, in Luanda on 4-6 June. The summit is organised by Africa Oil & Power and endorsed by the Ministry of Mineral Resources and Petroleum of Angola.

"The economic reforms passed by President Lourenço and the opening of wide swathes of oil and gas acreage constitute the single biggest exploration opportunity in the history of Angola," said Guillaume Doane, CEO of Africa Oil & Power. "This is a new era for Angola that will herald the arrival of several new entrants to the market."

Among the new entrants, the Strategic Fuel Fund (SFF), a CEF group company, will be present to look into the various licenses and blocks Angola has to offer. The state-owned entity already became owner and operator of South Sudan's Block B2 under an exploration and production sharing agreement (EPSA) signed in Juba this month, and is keen to continue securing additional assets and reserves across Africa's key oil markets that can benefit South Africans.

"The Strategic Fuel Fund seeks to invest in and acquire major oil and gas assets across Africa that can be of important interest to the host countries and South Africa" declared Godfrey Moagi, CEO of the SFF. "In our quest for attractive assets with vast resource potential, we believe Angola offers the right kind of environment, mature fields and political leadership needed to realise successful ventures."

Angola has indeed just released a new oil licensing strategy up to 2025, and is about to launch for the first time a bidding round that includes marginal oil fields with an attractive fiscal framework. Oil concessions are now overseen by a new and independent agency, the ANPG, which took this responsibility over from state-owned Sonangol in a move to make the process more efficient and transparent.

"The ambitious reform agenda of President João Laurenço and Minister of Mineral Resources and Petroleum Dr. Diamantino Pedro Azevedo is proving successful in building up investors' trust and confidence," said Centurion Law Group CEO and AEC Executive Chairman NJ Ayuk. "It is very encouraging to see major African players coming to Angola from across the continent. This is very promising for the growing African energy cooperation and the development of our industry."

The African Energy Chamber (AEC) is the only Africa-wide association that represents all aspects of Africa's oil and gas industry. The AEC represents more than 120 partner companies involved in all aspects of the African energy industry. Its Angola operations are overseen and represented by Sergio Pugliese. ■

> "The opening of wide swathes of oil and gas acreage constitute the biggest exploration opportunity in the history of Angola"
>
> **GUILLAUME DOANE, CEO OF AFRICA OIL & POWER**

Source: African Energy Chamber

Image Credit: MYTILINEOS

Uninterrupted power for Nigerian students – the METKA West Africa project

Access to constant power supply in educational institutions and healthcare facilities in Nigeria has been identified as a major challenge and barrier to effective learning, institutional operations, students' residency and access to quality healthcare.

Image Credit: MYTILINEOS

Project award winners are presented with their prizes as they look ahead to a bold, new future of improved energy access.

Foreseeing that the improvement of education access and standards, will have a positive impact in the socio-economic development, the Nigerian government has signed an engineering, procurement and construction (EPC) agreement with METKA Power West Africa, a subsidiary of MYTILINEOS for the electrification of four universities in the country. The project consists of the installation of power generation plants, street lighting and training centres, plus the operation and maintenance services.

Significantly, the project is the first phase of the Energising Education programme, an initiative developed by Nigeria's Ministry of Power, Works and Housing and implemented by the country's Rural Electrification Agency. It is aimed at providing uninterrupted power to a number of federal universities and university teaching hospitals across the country.

All four universities will be powered by hybrid power plants utilising renewable energy sources integrated with energy storage and diesel generation as back-up, enabling reliable power supply for the universities totally autonomously from the grid. In total, 7.5 MW of off-grid hybrid power will be installed, incorporating the award winning EXERON technology and the latest developments in mini-grid design.

The universities' renewable energy mini grids will be totally autonomous and will operate off the main Nigerian electricity grid. The main reason for that decision was the instability of the Nigerian grid. Plus, with the technology used will help to avoid problems at the distribution level.

This initiative will ensure the availability of clean, reliable, sustainable, affordable power for students. Once completed, more than 120,000 students and 28,000 university staff members will have access to uninterrupted power. This has been a privilege, rather than a right, for some students.

The project gained international recognition, as MYTILINEOS was selected as the winner of the ARE Awards 2019 in Category 6: "Best Off-grid Project". The ceremony was held last March during the 5th ARE Energy Access Investment Forum at the African Development Bank Group in Abidjan (Côte d'Ivoire) and was supported by large international institutions, both public and private.

The goal of the ARE Forum is to promote clean energy access, especially in African countries where millions of people still lack access to electricity.

MYTILINEOS will continue to provide solutions to countries with substantial energy needs, providing quality services based on the latest technological data.

Furthermore, particularly in Africa, where the company's activities are well established and there is a significant presence in the region, MYTILINEOS is committed to support the urgent needs of the local communities where it operates in and promotes their development and wellbeing.

With the new safe, secure and productive learning environment created, alongside the training centres and the street lighting of the campuses, more generations of students will enjoy clean energy and education. ■

University	Nnamdi Azikiwe (Awka Campus)	Federal University of Petroleum Resources	Usmanu Danfodiyo	Bayero
State	Anambra State	Delta State	Sokoto state	Kano State
PV Park	2.5 MWp	0.6 MWp	2.4 MWp	3.5 MWp
DG capacity	2 MW	0.5 MW	2 MW	3 MW
Battery	3.4 MWh	1.5 MWh	3.4 MWh	5.1 MWh

From crisis control to future proof

Providing backup solutions in an energy crisis.

Africa continues to face ongoing power delivery challenges. There is no denying that without secure sources of backup power, load shedding has a significant negative impact on economic growth. From loss in turnover to the less tangible, but no less serious, impact of dwindling business and investor confidence.

According to Menno Parsons, CEO of Master Power Technologies and an expert in backup power solutions, there are opportunities during this energy crisis. As a leading backup power specialist, Master Power Technologies, in partnership with FG Wilson with a track record of over 50 years, provides quality generators customised for individual business needs.

"We believe business owners should use the current electricity shortage to take a critical look at their own energy situation and take steps to not only deal with further outages, but to better manage consumption and costs in the future," said Parsons.

"It's a mindset which is even more important for small to mid-sized businesses, which often have fewer resources to get through tough times," he continued. "John F Kennedy famously said that 'the time to repair the roof is when the sun is shining'. The time to rethink electricity consumption and infrastructure is when the lights are on."

Drawing on his many years' experience in high-quality backup power solutions for industries where uptime is critical, such as manufacturing, mining, telecommunications and data centres, Parsons recommends starting with a current-state review. "This should include identifying your critical systems, benchmarking current consumption, and understanding which of your equipment or systems use the most electricity."

With this picture in hand, the next step is to look at more energy efficient options. Appliances and equipment that use less electricity are cheaper to run on backup systems such as generators or inverters and will benefit the bottom line even when the lights remain on. Changing to LED lighting, and insulating geysers and ceilings are further easy-to-implement examples.

Low-energy consumption options might not be available for all your equipment, but with a little effort, it may be possible to reduce consumption in other ways. Machinery that is well maintained is often more energy efficient, and a change in a specific manufacturing process could result in less energy being consumed. "The point is to look at your business with new energy eyes," explained Parsons.

Once you understand your operation's energy landscape, it is time to decide what backup systems are needed to ensure business continuity, and to research options thoroughly. "This is the great benefit of taking action while the lights are on," said Parsons. "You don't have to make a decision under pressure, and you won't be competing with thousands of other desperate people when it comes to purchasing the solutions you choose."

Backup systems vary greatly, from simple rechargeable lights to generators with the capacity to run an entire factory. When power outages are longer and more unpredictable, generator sets remain a popular option as they bring flexibility and will provide power for as long as you fuel them. Only when you know exactly what your business needs to remain operational, can you choose the appropriate solutions.

"Small to mid-sized businesses need uninterruptable power supply (UPS) systems with decent battery and inverter backup," said Parsons. "If at all feasible, it is worth investing in a solar power system over time to feed the batteries and complement a generator set as part of a balanced approach to standby power," he said.

> "The time to rethink electricity consumption and infrastructure is when the lights are on"
>
> **MENNO PARSONS, CEO OF MASTER POWER TECHNOLOGIES**

Regardless of the backup power solution a business owner selects, a handful of important principles apply:

- Only ever buy from companies that are reliable, have a credible track record and proven after-sales service. Never entrust your business continuity to a fly-by-night organisation, even if the price appears to be highly attractive.
- Based on your energy review, invest in the right technology for your needs and with the right partner. It is advisable to invest in a turnkey provider so you know the system components are all compatible and you do not have to manage a variety of service providers.
- Regularly test and maintain your backup power system, and ensure you have consumables such as fuel and batteries available.

"Energy efficient and backup power systems are expensive when viewed in isolation," said Parsons. "However, when they are seen as a vehicle for business sustainability, both in times of power interruptions and when reducing energy consumption to save costs, they become a tangible investment in the future of your business." ■

For more information on Master Power Technologies visit kva.co.za or FG Wilson at www.fgwilson.com.

South Sudan inaugurates EU-funded bridge in Warrap State

The United Nations World Food Programme (WFP) and the European Union have officially handed over the completed Kwacjok Bridge to the Government of South Sudan – linking the Lunyaker, Kwacjok and Kangi regions, which have long been separated by the Jur River.

Built at a total cost of US$6.5mn, the bridge will connect tens of thousands of people and will be important for humanitarian operations, farm-to-market access and commercial activities in the region. The 120m long bridge is part of a US$24.8mn European Union-funded project to construct and maintain a total 100km of road infrastructure in Warrap and Western Bahr el Ghazal states.

The Kwacjok Bridge is the latest WFP engineering project in South Sudan.

The project is more than just a bridge," says Rebecca Okwaci, Minister of Roads and Bridges. "This is an investment in various sectors of South Sudan including education, agriculture, health, transport and tourism."

Construction, undertaken in phases since January 2018, consisted of a reinforced concrete sub-structure based on piled foundations, the supply and installation of the prefabricated bridge superstructure and development of 7km of approach roads.

Led by a construction firm under the supervision of WFP engineering teams, up to 80 local people were employed as workers, including electricians, welders, equipment operators, and drivers, creating much-needed job opportunities.

"This bridge is part of a larger infrastructure investment programme which has been continuously supported by the European Union, since 2012, with a significant financial contribution of more than US$65.14mn," said EU Ambassador to South Sudan Dr Sinead Walsh.

South Sudan has a road network of more than 20,000km, but only 200km is paved. Decades of conflict and years of neglect have stunted infrastructure development in the country. Road travel is therefore difficult with 60 per cent of the country inaccessible during the six-month long rainy season from June to November every year.

"The project will transform the dynamics of transportation in surrounding communities, and counties," says Ronald Sibanda, WFP's Country Director in South Sudan.

TANZANIA AND ZAMBIA PLAN TO BUILD PIPELINE

Tanzania and Zambia plan to build a refined products pipeline to transport petroleum between the two countries, Tanzania's Energy minister Medard Kalemani announced, according to Reuters.

The US$1.5bn pipeline would start from Dar es Salaam to Ndola in Zambia. As yet, no timeframe for the pipeline's construction has been set.

"The project will reduce challenges in transporting petroleum products in the countries that use our ports to import fuel and open up business opportunities," Kalemani said.

"The project will be implemented jointly by Zambia and Tanzania."

Kalemani said the pipeline would also have take-off points at Morogoro, Iringa, Njombe, Mbeya and Songwe regions on the Tanzanian side. There is already an existing crude oil pipeline between Tanzania and Zambia, where it is refined in Ndola for local use.

ELECTRIC SITE WINS VOLVO TECHNOLOGY AWARD

Volvo CE has won a technology award for its electric battery load carrier solution.

Trialled for more than 10 weeks during late 2018, the autonomous load carrier has been recognised by the industry as a breakthrough in electrifying a quarry worksite.

"This award recognised not just one innovation – but a whole raft of them that were necessary to reimagine how an age-old process – quarrying – could be modernised in order to radically cut emissions," says Lars Stenqvist, Volvo Group chief technology officer. "In a company that is so alive with new research and innovation as the Volvo Group, Volvo CE's Electric site project stood out both for its scope and its results. This is a great example of what we can achieve by pushing boundaries and working in partnership with our customers."

The Electric Site project was a partnership between Volvo CE and Skanska Sweden, the Swedish Energy Agency and two Swedish universities – Linköping University and Mälardalen University.

Using prototype machine, HX02, it looked at electrifying each transport stage in a quarry - from excavation to primary crushing and transport to secondary crushing.

As a result, the research project delivered up to a 98 per cent reduction in carbon emissions, a 70 per cent reduction in energy cost and a 40 per cent reduction in operator cost. As well as a fleet of HX02s, other prototype machines, making up the Electric Site system included a hybrid wheel loader (LX01) and a grid-connected excavator (EX01).

The winners of the Volvo Technology Award 2019 were Marcus Broberg, David Dujmovic, Bobbie Frank, Peter Johansson, Chongchul Kim, Marcus Kreku, Joakim Lundin, Uwe Müller, Albin Nilsson, Markus Rombach, David Rylander, Ted Samuelsson, Johan Sjöberg, Mikael Skantz, Erik Uhlin, Joakim Unnebäck and Jimmie Wiklander.

BRIEFS

Image Credit: Adobe Stock

outh Africa's construction sector is due to come out of recession.

Growth in SA construction sector set to rise

The construction sector in South Africa is set to come out of recession, according to research analysts Fitch Solutions.

It expects year-on-year growth of 6.8 per cent and a total infrastructure spend to reach R855bn over the next three years – an increase of 2.5 per cent compared to last year. While Zambia and Namibia are showing a decline in growth, Ethiopia has shown it has the most buoyant market, which is set to increase its value by 12.3 per cent.

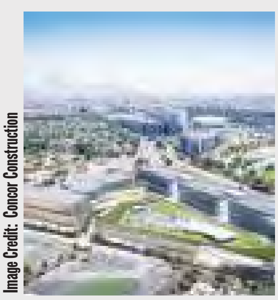


Image Credit: Concor Construction

An artist's impression of the Conradie Better Living Model project.

Cape housing project to improve lives

Leading construction contractor, Concor is involved in one of Western Cape's most important public-private urban developments.

The Conradie Better Living Model project is aimed at improving the lives of residents, and Mark Schonrock, property development manager, says the new housing model is a real game changer, prioritising sustainability and affordability. The company is tasked with executing the full development of the project.

Supporting Kenya's growing tourism industry

Mwangi Mumero explores the boom in large-scale hotel developments in Kenya.

Image Credit: Nina R/Flickr

Nairobi has developed into a leading tourism and conference destination.

Work has started on what is slated to be the tallest building in Africa, Nairobi's Pinnacle Towers – a mixed-use twin tower that will house the 45-floor new Hilton hotel.

Expected to cost US$200mn by the time of its completion in 2020, this 70-floor development will add to the fast expanding hospitality industry. It is being developed by Hass Petroleum and White Lotus.

Of that, the developers contributed US$50mn and the balance was borrowed from Afrexibank and some Kenyan banks.

The main contractor is the China State Construction Engineering Corporation.

There will also be 200 residential houses run by Hilton Hotel. These will include one bedroom, two bedroom and three bedroom fully furnished luxury apartments.

"Our building will have a helipad, which will be more than 800ft high, making it the highest in Africa. The helipad will allow people to fly directly into the hotel, beating the hectic Nairobi traffic," remarked Abdinasir A. Hassan, Hass Petroleum executive chairman, East and Central Africa during the laying of the foundation late last year.

> "Increasing business traveller demand is driven by Nairobi's position as an East Africa commercial hub"
>
> **PRICEWATERHOUSECOOPERS**

The expanding hospitality industry has in recent years led to a huge expansion in hotel development in Nairobi and Kenya in general.

Already, the Hilton Group has opened a new US$25mn Garden Inn hotel near the Jomo Kenyatta International Airport (JKIA) on a 1.3 acre plot along Mombasa Road.

"We are delighted to open the first Hilton Garden Inn property in Kenya. It will welcome business and leisure guests, offering value accommodation within easy reach of the international airport," said Lorenzo Baleri, general manager, Hilton Garden Inn Nairobi Airport during the opening ceremony.

Global brands, among them the Villa Rosa Kempinski, Radisson Blu, Royal Tulip, Best Western and Swiss International, have in the last few years made their mark in Nairobi, establishing or refurbishing existing hotels.

PricewaterhouseCoopers in its report 'African Insights Hotel Outlook 2017-2021', indicates that Kenya is expected to open 13 new hotels, which will add 2,400 guest rooms over the period.

During the same period, the PwC report projects growth in occupancy rate will shift from 43.1 per cent in 2017 to 58.1 per cent in 2021.

Overall, the report says, the increased development of new hotels and refurbishing of the existing ones is an indication of confidence in Kenya's economic growth.

"Increasing business traveller demand is driven by Nairobi's position as an East Africa commercial hub and the multiplier effect of devolved government including county economic development," further reads the PwC Outlook report.

Data from the Kenya Tourism Board indicates that 2,025,206 tourists came to Kenya in 2018

compared to 1,474,671 the previous year, a 37.33 per cent growth.

Total earnings from tourism rose by 31 per cent to peak at US$ 1.57bn against US$ 1.19bn in 2017.

A huge part of this income went to hotels and related businesses.

The USA remained Kenya's leading market, growing by 11.12 per cent with 225,157 arrivals. The introduction of Kenya Airways direct flights from Nairobi to New York is expected to boost arrivals from the country. Other top markets were India, China, Germany, Italy and South Africa.

Increased business interest by Chinese nationals in East Africa has seen their arrivals rise by 43 per cent since 2011, according to recent reports.

"Concerted efforts in marketing the country as a tourism destination of choice have yielded fruits. The country has also reaped some benefits from the decline of tourism in North Africa," says Najib Balala, Kenya cabinet secretary for tourism.

Increasingly, the hospitality industry in Kenya has shifted from travel to conferencing with many global summits being held in Nairobi.

Three years ago, Nairobi was voted Africa's leading meeting and conference destination at the World Travel Awards.

The International Congress and Convention Association (ICCA) also ranked Kenya as the second-best destination for conference tourism in sub-Saharan Africa after South Africa.

The Global Entrepreneurship Summit Forum held in July 2015 and opened by the then US President Barack Obama, was one of the recent high profile meetings held in Nairobi.

Other global forums held in Nairobi include the World Trade Organisation Ministerial Conference in December 2015, Tokyo International Conference on African Development (TICADVI), the Africa, Caribbean and Pacific (ACP) Parliamentary Assembly meetings, as well as the African Green Revolution Forum (AGRF).

Major tourism attractions, notably the Maasai-Mara annual wildlife migration, the Nairobi National Park and the pristine coast line have continued to bring tourists to the country, increasing demand for hotel space.

A three-hour drive from Nairobi, the world-renowned Maasai Mara Game Reserve hosts the annual wildebeest migration which was once named one of the Seven Wonders of the World.

"Kenya has the infrastructure in place that is conducive to hotel development. Nairobi is still underserved when it comes to hotel investment. It needs more hotels," noted Tim Cordon, the Radisson Group senior vice-president for Africa, Middle East and Turkey during last year's African Hospitality Investment Forum held in Nairobi.

The Radisson Group operates the Radisson Blu in Nairobi. Since its entry into the African market, it has developed 45 hotels.

Two years ago, the US$50mn Hilton Africa Growth Initiative was launched and will see the conversion of existing hotels to the brand. This is expected to see 100 conversion opportunities and bring in up to 20,000 rooms.

"The UN forecasts that the world's 10 fastest growing cities will all be in Africa by 2035. This strategy will help connect guests to key cities and airports across the region," observed Chris Nassetta, Hilton CEO during the conference.

The Marriott International currently has two hotels in Nairobi that include the 172-room Four Points by the Sheraton Nairobi Airport which opened in 2017. The other is the 96-room Four Points by Sheraton Nairobi Hurlingham, which was a conversion.

The group is developing a 365-room JW Marriott in Nairobi slated for opening next year. Plans are underway for the construction of the Protea Hotel brand as part of the US$310mn investment by the Marriott International's partners in Nairobi.

"African economies have sustained unprecedented rates of growth, which have mainly been driven by a strong domestic demand, improved macroeconomic management and increased political stability. The continent doesn't have sufficient branded hotels, presenting us with a fantastic opportunity to grow our brands and enhance our footprint," said Alex Kyriakidis, president and managing director, Middle East and Africa.

The Marriot brand is also acquiring Sankara hotel, a five-star Nairobi hotel, located along the Mombasa Road, a few kilometres from the airport.

US-based Hyatt Hotels Corporation has entered an agreement with Kanha, a Kenyan real estate and construction firm for the construction of the first Hyatt-branded hotel in Nairobi.

The Swiss hotel chain Mövenpick has also entered the Kenyan market, opening the Mövenpick Hotels and Resort in Westlands, a Nairobi suburb.

International brand Best Western plans to develop seven hotels – five in Nairobi, one in Naivasha, 80km away to the west and one in Kisumu, a port city on Lake Victoria near the Uganda border.

Other hotel investments in the last three years include the Ruiru Rainbow Resort, Verona Hotel and Conference, Elysian Resort, TradeMark Hotel, City Lodge Hotel at the Two Rivers, Tamarind Tree Hotel and the Fairview Hotel.

Owned by Julius Kamau, a UK-based Kenyan, the US$30mn Ruiru Rainbow Resort is located a few kilometres from the city centre along Thika Road.

> "Kenya has the infrastructure in place that is conducive to hotel development"
>
> **TIM CORDON, SENIOR VP FOR AFRICA, MIDDLE EAST & TURKEY, RADISSON GROUP**

South African hospitality group City Lodge owns the 84 room City Lodge Two Rivers Lodge. This is the group's third hotel in Nairobi as it also runs Fairview and Town Lodge hotels. It has 59 hotels in Southern and Eastern Africa.

Two Rivers is one of the largest mixed-use developments in the country, and on completion will have offices, a hospital and residential houses in addition to the shopping mall.

The four-star Tamarind Tree Hotel is owned by the Tamarind Group which also owns the Carnivore and Tamambo restaurants. The 160-room facility is close to Wilson Airport and joins the other previous investments by the group.

The Chinese have also invested heavily in the hospitality development in the country.

Currently underway, the US$400mn Avic Tower, a mixed-use property being constructed by the Chinese multinational Avic, will have a 35-floor hotel tower and four residential apartments towers on 24 to 28 floors.

The hotel will be run by five-star chain JW Marriott hotel.

The development is located in Westlands, a wealthy suburb of Nairobi.

"The property will drive global capital and intelligence from Nairobi and East Africa. It will bring economic development to the country to a brand new height and standards," noted Avic's managing director Wang Long, adding that the firm will pay the Kenyan government more than US$8mn in taxes and generate about 2,000 jobs directly and indirectly.

A group of Chinese investors, led by the Mayor Liu Xiaohua of Huangshan Municipality in China, have shown interest in constructing tourist resorts in Kenya, specifically near Mt. Kenya.

The governor of Meru County, which neighbours Mt. Kenya, welcomed Chinese investors who, late last year, paid a fact-finding mission to the region. ■

Image Credit: TEC

Rise of green technology in construction

Ujjwal Goel, managing director of Teraciel Engineering and Contracting (TEC), shares why green technology is essential for making buildings more energy-efficient and sustainable.

Green building technology has become one of the hottest trends in construction. The benefits of a green technology application in construction are far-reaching, offering advantages when used in new facilities as well as existing structures. Green technology makes buildings more energy-efficient, so they have a lower carbon footprint and a reduced impact on the environment. Builders, building owners, and tenants realise considerable benefits from the application of green construction technology.

The primary way that green technology benefits are achieved is through greater energy efficiency. In new buildings, green building construction plays a role in every phase of development. Every aspect of the structure, including siting, design, construction materials, and the systems used to run and maintain operations are chosen to be as sustainable and energy-efficient as possible.

Thirty to forty per cent of a commercial building is typically unoccupied at any given time. Green building technology makes use of motion detectors, RFID scanners, access card readers, and other sensors to monitor the occupancy status of building sectors. Whenever an area of a structure becomes unoccupied, green technology automatically shuts off lights and adjusts HVAC, cooling, heating, and ventilation options. Building owners can realise as much as 30 per cent savings in their energy expenses.

Top 10 sustainable construction technologies used in green construction:

1. Solar power

Solar power has been increasingly exploited as a sustainable construction technology. In green construction, it is utilised in two ways. One pertains to active solar power and the other is passive solar power. Active solar power is the use of functional solar systems that absorb the sun's radiation to cater for heating and electricity provision.

The upfront installation costs are higher but in the long-term, it saves on energy bills and aids in reducing greenhouse gas emissions from non-renewable energy sources like fossil fuels. On the other hand, passive solar power is a design that uses the sun's rays to warm homes through the strategic placement of windows and the use of heat-absorbing surfaces.

2. Biodegradable materials

The use of biodegradable materials is an eco-friendly means of making construction sustainable. Most traditional construction methods lead to the accumulation of waste products and toxic chemicals, the majority of which take hundreds of years to degrade. And even if they degrade, it contaminates and harms the environment. Biodegradable materials such as organic paints, therefore, aid to limit the negative impacts on the environment as they easily breakdown without the release of toxins.

3. Green insulation

Insulation is among the greatest concerns when it comes to construction of buildings and homes. However, most people don't know that insulators are simply wall filters which don't need to be made from expensive and highly finished materials. On this basis, the use of green insulation has proven to be a sustainable construction technology as it eliminates the need for high-end finishes made from non-renewable materials.

4. The use of smart appliances

Homes and commercial buildings consume most of the world's energy and for this reason; it has necessitated the use of smart appliances as part of sustainable construction technologies. The sustainable construction technologies emphasise the installation of energy saving and self-sufficient appliances. SmartGrid dishwashers, refrigerators and washing machines are examples of such sustainable technologies. The technology is oriented towards establishing zero-energy homes as well as commercial buildings.

5. Cool roofs

Cool roofs are sustainable green design technologies which aim at reflecting heat and sunlight away. It aids in keeping homes and buildings at the standard room temperatures by lowering heat absorption and thermal emittance. The design makes use of reflective paints and special tiles which absorb less heat and reflect away most of the solar radiation. For instance, cool roofs can reduce temperatures by more the 50ºC during summer.

6. Sustainable resource sourcing

Sustainable resource sourcing, as the name suggests, is a prime example of sustainable construction technology because it ensures the use of construction materials designed and created from recycled products and have to be environmentally friendly.

7. Low-energy house and Zero-energy building design

Sustainable construction technologies typically include mechanisms to lessen energy consumption. The construction of buildings with wood, for instance, is a sustainable construction technology because it has a lower embodied energy in comparison to those build of steel or concrete.

8. Electrochromic Smart Glass

Electronic Smart Glass also constitutes one of the technologies in sustainable construction. The electronic smart glass is a new technology that works particularly in summer periods to shut out the harsh heat of solar radiation. The smart glass uses tiny electric signals to slightly charge the windows to change the amount of solar radiation it reflects.

9. Water efficiency technologies

There are several water efficient technologies used, which are all part of sustainable construction technologies. Essentially, the technologies encompass re-use and application of efficient water supply systems. Examples include the use of dual plumbing, greywater re-use, rainwater harvesting and water conservation fixtures. These methods ensure that water is adequately managed, recycled and used for non-portable purposes.

10. Sustainable indoor environment technologies

The health and safety of the building occupants are vital and must be guaranteed during the construction of a building. As such, sustainable indoor technologies are mandatory for green construction. ■

CHRYSO HELPS CEM BRICK WITH NEW PLANT FLOOR

Image Credit: CHRYSO Southern Africa

The plant uses CHRYSO admixtures to enhance concrete product quality and manufacturing efficiency.

Cem Brick, a cement brick manufacturer based in Bloemfontein, encountered concrete difficulties when laying the ground of its new plant and turned to CHRYSO Southern Africa for a solution.

When the company was upgrading its old plant, the hot and dry conditions at the time of construction led to some surface cracks on the floor. Having used CHRYSO admixtures in the production of its bricks and roof tiles, Cem Brick contacted the admixture company's national marketing manager Greyling Jansen for help.

"Following an onsite assessment and discussions with the site engineer, flooring contractor and readymix supplier, we were able to propose an appropriate solution that included the use of both admixtures and structural fibres in the floor slab," Jansen said.

He added that CHRYSO Optima 100 was used in the readymix as this admixture would allow the requisite workability as well as water reduction in the 120 slump pump mix.

"We were able to assist Cem Brick with a range of other CHRYSO products to enhance the performance of the concrete in the plant floor and other structures," he stated. This included a.b.e.'s epidermix 345, which facilitates the bonding of new concrete to existing concrete, preventing cold joints.

a.b.e.'s Durasheet was used in between the flooring joints of the new plant, while duracord was used as backing cord to the floor joints.

"We were able to supply CHRYSO Cure Acrylic to cure walls on the outside of the building, while CHRYSO Stab 25 facilitates a better finish to the mortar and inhibited cracking on the wall surface," he explained.

CHRYSO also used its Advil XT Fibre on the wall mortar to inhibit plastic shrinkage cracks. CHRYSO Cim, a bonding agent in aqueous phase, prevented delamination of wall mortar waterproofing and ensured greater flexibility.

Inspiring customers with Next Generation of CAT mini excavators

Staying focused on customer needs, Caterpillar listened to, absorbed and incorporated customer feedback into the design of its newest line of mini excavators.

Caterpillar has been working with a customer-focused approach for three years, holding focus groups, dealer advisory groups and asking customers globally to try their new line of Cat mini excavators.

"The feedback was extremely positive and the improvements we've engineered, make a difference," said Dave Wood, Cat Mini Hydraulic excavator product specialist for Europe, Africa and Middle East. "We're offering things customers and operators may have never thought they would get on a machine in this class. That makes me proud."

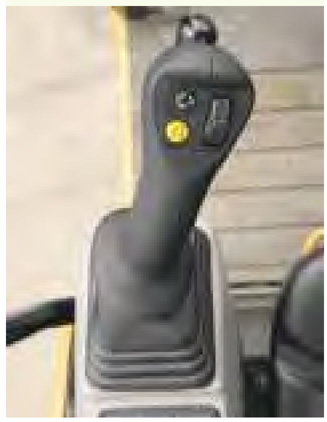
EVOLVING NEEDS

"The type of applications these machines are being used for, grows all the time. That includes our new line of Cat mini excavators," said Wood. "They are perfect rental equipment, especially for customers who want to operate the machines themselves. Plus, the availability of different work tools is making mini excavators even more desirable and versatile."

Caterpillar is taking a streamlined approach to machine design with a focus on commonality between models. "We've taken the full line up and created a common look and feel throughout the range," said Wood. "We wanted a modular design with fewer components. And, we wanted to provide different regions around the world with a similar product and build while being extremely flexible with the way we put machines together."

STICK STEER

Drive and steer using the joystick. Customers can now choose whether they utilise stick steer or the traditional levers and pedals for travel.



OPERATOR COMFORT AND AIR CONDITIONING

The cab is now sealed and pressurised, quieter and a more pleasant environment. Operators can control heating and the radio while listening to music or talking on the phone through Bluetooth. Even better, cab air conditioning is also being offered for the first time in the 1-2 tonne size class.

LCD MONITOR

An easily navigable, state-of-the-art monitor comes standard on all machines through which optional Cat quick-couplers can also be controlled.

OWNING AND OPERATING COSTS

Even though Cat Next Generation mini excavators are new to the market, there are promising figures when it comes to owning and operating costs. When benchmarked against current machines, there is up to 15 per cent lower operating costs on the 1-2 tonne Next Generation models. Serviceability has also been improved.

TECHNOLOGY

Across all the models, Product Link can be included to provide valuable diagnostic, location and service information. The new monitor positioned in front of the operator also provides the option of Bluetooth connectivity for calls and music from mobile devices.

CUSTOMISABLE HYDRAULIC CONTROL

"We have something that you don't get with the competition. It's the ability to modify implement speeds," said Wood. "If an operator is grading and wants to drag a bucket just above ground level, slower front linkage operation would provide more control. But the operator might also want faster joystick response. On our machines, you can do both to get the very best control. We want to provide the most efficient performance and the best operator experience."

Hitachi mini and compact excavators

Hitachi Zaxis mini and compact excavators, ranging from the ZX10U to ZX85USB, are now available in the African market.

HIGH PRODUCTIVITY

These models are ideal for a wide range of applications, including utilities, foundation work, landscaping and indoor demolition or construction projects. The smaller models are lightweight and compact and can easily be transported from one job site to another. The larger machines can be used with a variety of attachments, enhancing their versatility.

All Hitachi mini and compact excavators have been designed to offer high levels of productivity, comfort and durability. They are easy to operate thanks to user-friendly controls and easy to maintain due to convenient access to components. With a short-tail swing radius, they are suitable for working in confined spaces, particularly in urban areas on road construction projects, for example.

Hitachi believes the African market for mini and compact excavators has potential for growth in the coming years. It intends to develop demand by demonstrating how its equipment can successfully meet the needs of customers, and will penetrate the African market with a wide range of Zaxis mini and compact excavators.

Bobcat: redefining industry standards

SUPERB STABILITY

Bobcat has launched the new R-Series mini-excavators from 2-4 tonne. The new range of five compact excavator models – the E26, E27z, E27, E34 and E35z – offers a best-in-class mix of high digging forces, superb stability and smooth controllability of working functions complemented by low weights for easy transportation. Excellent machine fit and finish plus new ground-breaking design features will make the new Bobcat R-Series unique on the market.

The new excavators introduce many state-of-the-art features and offer enhanced levels of quality and robustness. They utilise newly developed flexible machine platforms that allow different configurations of models and specifications to suit a wide range of applications and customer needs.

Jarry Fiser, product line director for Bobcat Mini-Excavators in Europe, the Middle East and Africa, said, “The current Bobcat compact excavator line-up has been one of the most respected products in the industry. Now backed by nearly five years of development work, we are raising the bar even further and we are confident that we are now offering the best-in-class machines available.”

NEW COMAR PLANT HELPS MORE ASPHALT DOUBLE ITS PRODUCTION CAPACITY

Image Credit: Comar

The plant complies with new emission standards on dust particulate levels.

More Asphalt, an asphalt producer based in Western Cape, has almost doubled its production capacity at the Tygerberg Valley site outside Cape Town with the help of a custom-built continuous mix asphalt plant from Comar.

The facility, which started production in October 2018, produced 100,000 tonnes in its first seven months exceeding operating expectations. According to Owen Peringuey, executive director at More Asphalt, the manufacturing of the plant went very smoothly, in line with the set out plan and within the required timelines.

"They were able to design, manufacture and commission what we needed, and more," Peringuey said.

Comar's team designed the 140 tonne-per-hour plant to suit the customer's constrained site footprint. Space savings were achieved by designing and installing a single combination drying and mixing drum in a counterflow configuration, incorporating a long-nose burner.

The new plant includes six cold feed bins for sand and aggregate and two recycled asphalt pavement (RAP) bins for fine and coarse fragment sizes. A baghouse for catching dust particulate emissions, as well as a motor control centre in a 12 metre shipping container are also major elements of the new plant.

"The facility uses a higher quality fuel than normal, providing better combustion and less sulphur burn-off," stated De Wet Dreyer, Comar operations manager. "Among the benefits of this fuel choice is longer bag life and reduced maintenance costs for the overall operation."

The design also provides additional loadout flexibility. This allows a fourth product to be discharged directly onto trucks, while the three silos are filled. The scope of work for the More Asphalt contract included disassembling and removing the company's old plant before the new plant could be installed.

World's top miners keep performing but investors unimpressed

Image Credit: Adobe Stock

Despite top mining firms performing well, investors say there is still room for improvement to make the industry more sustainable.

The world's 40 largest mining companies continued to consolidate their stellar performance of the past several years by delivering steady growth in 2018, according to PwC 's Mine 2019 report.

The report stated, as a group, the top 40 increased revenue by 8 per cent, buoyed by higher commodity prices and marginally improved production. They also boosted cash flows, paid down debt and provided a record dividend to shareholders of US$43bn. Forecasts indicate continued steady performance in 2019. Revenue should remain stable, with weaker prices for coal and copper offsetting marginally higher production and higher average prices for iron ore.

Yet investors seemed unimpressed by the top 40's result, judging by market valuations, which fell 18 per cent over 2018. While total market capitalisation rose in the first term of this year, it remains 8 per cent down compared to the end of 2017. Over the past 15 years, total shareholders' return in mining has lagged that of the market as a whole as well as comparable industries such as oil and gas.

Michal Kotzé, PwC Africa Energy Utilities & Resources leader said, "In spite of the strong operating performance of the world's top miners, there is still more room for improvement for mining to continue to create and realise value in a sustainable manner. Both investors and other stakeholders have concerns about the mining industry's ability to respond to the risk and uncertainties of a changing world. Globally, stakeholders are concerned that the industry is lagging when it comes to a number of factors that have not been a traditional focus of the mining industry. These include dealing with emissions, investing in differentiating technology and digitisation, engaging more proactively with consumers and building brand.

"The mining industry will have a window of opportunity to adapt to the growing and changing expectations of stakeholders. By utilising technology to operate safely and more efficiently, addressing global concerns, and maintaining a disciplined strategy to create ongoing value for its stakeholders, the industry can forge a better future for all beneficiaries of mining," said Kotzé.

SOUTH AFRICAN MINING EXPERTISE ON SHOW

More than 3,500 international mining experts and local stakeholders from 50 countries were due to attend DRC Mining Week on 19-21 June. Five country pavilions from France, Germany, South Africa, United Kingdom and Zimbabwe, were part of the exhibition. The South African Department of Industry (dti) was the organiser of the South African pavilion which comprised more than 35 South African companies displaying their specialised mining technology and services.

"The DRC has been a very important market for South African manufacturers across the board, especially in the mining industry," said Eric Bruggeman, CEO of the South African Capital Equipment Export Council (SACEEC) and part of the South African pavilion at DRC Mining Week, adding, "the country is the fourth largest producer of copper in the world and largest global manufacturer of cobalt with an average of 66-thousand metric tonnes per year, which means the opportunities in the mining and other sectors are huge."

ACHIEVING ZERO HARM IN BOTSWANA MINES

Debswana Diamond Company's recently launched Sustainability Resource Centre (SRC) has applied a holistic approach to achieve zero harm across its Orapa, Letlhakane and Damtshaa mines in Botswana.

With its 'Put Safety First' strategy, the company pursues ways to improve the impact of its awareness raising and training interventions, according to Tefo Molosiwa, head of Safety & Sustainability at Debswana.

"By using a combination of learning modes – theoretical and practical – the SRC delivers greater learning," said Molosiwa. "For instance, while employees can learn the theory of how a bund wall must be maintained, there is an opportunity to clean spillage using the equipment provided."

Molosiwa highlighted that the SRC facility has been designed to include 'seeing', 'doing' and 'discussing' the various aspects of environment, community, occupational health and safety (ECOHS) on the mines. This will allow best practice to be effectively displayed and understood by employees, contractors and visitors, including the Fatal Risk Control Standards (FRCS). E-learning plays an important role in the facility, with 20 workstations available for self-induction.

"Employees gain exposure through being shown both 'best' and 'bad' practice displays as part of their induction," he said.

The scope of environmental management aspects of this learning process extends to energy conservation, water-saving and waste management. The facility itself includes solar water heating devices, for instance. The energy-saving impact of this technology is shared with inductees, to motivate adoption.

Water tanks at the SRC harvest rainwater from roof gutters, which is used for cleaning and watering gardens. The dry landscaping itself – featuring just a few pockets of greenery – is an important demonstration of how water can be better conserved.

BRIEFS

Job losses at Sibanye-Stillwater

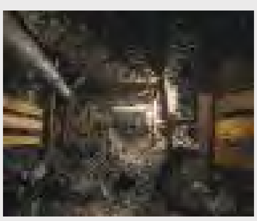


Image Credit: Adobe Stock

Sibanye-Stillwater has suffered financial losses at its Beatrix and Driefontein mines.

Some 3,450 jobs are set to go at gold mining company Sibanye-Stillwater in South Africa, according to Reuters.

The numbers are significantly lower than the original forecast of more than 5,000 jobs. It is part of a restructuring plan after financial losses at the Beatrix and Driefontein shafts since 2017.

The company is the largest individual producer of gold from South Africa and is one of 10 largest gold producers globally.

Extra funds for Namibia tin mine

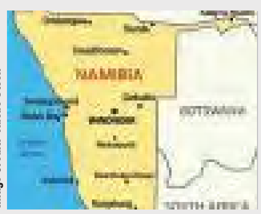


Image Credit: Adobe Stock

The Uis Tin Mine in Namibia has secured more funding to produce more tin concentrate.

Mining company AfriTin has announced it has secured additional financing to bring phase one of the pilot plant project at Uis Tin Mine in Namibia into production.

Formerly, the world's largest hard-rock tin mine, phase one is designed to process approximately 500,000 tonnes per annum, producing 60 tonnes of tin concentrate per month. Phase two will comprise a planned operation of 3 million tonne per annum processing facility.

Powering West Africa's mining sector

Despite challenging environments and tough economics, JA Delmas continues to deliver the best possible solutions to its customers right across West Africa.

A Cat dealer for 87 years now, JA Delmas delivers robust power solutions to some of West Africa's most isolated mines sometimes spread across large swathes of land. With a history spanning over 165 years, the company and its Network enjoys a longstanding reputation throughout the region.

It provides state-of-the-art equipment and machinery for a range of industry sectors, not only mining and energy services, but also in construction and infrastructure.

But that is still only half the picture. No company in the world stays in business for more than a century without doing things a little special.

On the power and energy side, JA Delmas is now underpinning many of the region's big mining projects, where dependability is everything.

Its success in this demanding environment, where power is required 24/7, highlights just how respected and trusted the Network has become with its robust, fuel-efficient Cat engines. Major partners include the likes of top international mining companies, all flagship names in the region's mining industry. While gold has long been a feature of West Africa's economic landscape, it is only as robust as the power supplies that feed the mines, industrial belts and drives.

Close to customers

There is no real secret to this success, other than hard work, quality products and a never-ending commitment to customers.

Christophe Jacquin, head of the Energy, Manufacturing & Services Business Unit at JA Delmas, says the company always wants to improve on its offer.

That means working closely with its customers and other local partners to provide the best outcome for any given project.

Innovative power solutions are essential for Africa's growth and development.

Image Credit: JA Delmas

"You need to understand how to get things done; efficiently; you need to deliver quality at the right cost," he tells *African Review*. "We have the right people and we have the right product, but to be successful in Africa, to do business there well, you need to do it with the local actors."

Offering a world-class product is also essential, as is the prestige from the Caterpillar name.

While Caterpillar offers machinery for a multitude of uses, on the power side, this range spans from the small generators available for banks and telecom towers, to medium-speed HFO engines for utility companies or mines.

In these larger applications, the requirements for energy are simply huge, sometimes about up to 80 megawatts. "These products are rugged and tested to operate in harsh environments – and at best possible cost."

> "We have the right people and the right product but to be successful in Africa, you need to do business with local actors"
>
> CHRISTOPHE JACQUIN, HEAD OF ENERGY, MANUFACTURING & SERVICES BUSINESS UNIT, JA DELMAS

A service company

This is one of the reasons why JA Delmas now has deep in-roads into so many of West Africa's vibrant, growing and emerging markets, from Côte d'Ivoire to Senegal, from Guinea to Mali.

In the mining sector, Jacquin says the biggest markets for his company, in terms of power and energy, are Mali and Burkina Faso, as well as Guinea, Côte d'Ivoire, Mauritania and Niger.

He mentions the emergence of other mining trends, such as an interest in graphite, which could yield future business.

And, of course, its impressive regional network is essential.

"At JA Delmas, we have the right people, the track record and the quality, so we can really deliver to our customers because we are so close to them, we understand them and we know how to operate there. We are a service company – and service means having people close to the customers. That for me is really important."

At the same time, there is support from all over the world via the Caterpillar network, a truly global brand. This brings with it top quality products, extensive support, technical excellence and an embrace for innovation.

Solar-thermal hybridisation

Sometimes this means taking a holistic approach to project development, not only selling engines, but being active too in plant design, and other areas like operations and maintenance.

The aim, says Jacquin, is to deliver a complete power solution, allowing all our customers to focus on their project.

Right now, the biggest selling products, in terms of megawatts and revenue, are the medium-speed HFO engines that have long been the backbone of the region's mining sector, where grid supplies remain a rarity. But West Africa is experiencing its own energy transition too, with increased appetite for renewable power.

"We are now moving into the hybridisation," says Jacquin, a trend he expects more of in the future.

While this continues to draw on traditional thermal-based supplies – medium speed and high speed engines, plus operations and maintenance support, it is now rolling out 24 megawatts of solar PV panels to reduce the overall cost of energy at the site.

"So it is a good example of how we can follow the technology, follow the customer, and always come up with better solutions," he adds.

It presents additional challenges, such as making sure the hybrid is optimised and adjusting the load of the generators, but it is big new forward development, "so we are adding more solutions for our customers."

Financing support

Another important initiative for the company is the provision of financial services and solutions, again in coordination with customers, and working alongside the resources of the Caterpillar group.

"We are working on expanding this front," says Jacquin. "So, for instance, we have a plant, where they wanted a finance solution. So what we managed to bring, with Caterpillar Finance, our partner, was a technical solution plus a financing solution. Ultimately, it's a business solution and we are working on a number of other projects where we are combining group technology and efficient operations with finance."

> We are so close to our customers so we understand them and we know how to operate in Africa. That is really important"
>
> **CHRISTOPHE JACQUIN, HEAD OF ENERGY, MANUFACTURING & SERVICES BUSINESS UNIT, JA DELMAS**

Solar solutions are boosting access to energy in economies that are seeking to go low-carbon.

Image Credit: Caterpillar

The end result is that it enables customers to manage their own costs and cash flow better. These are innovations and add-ons that could help to secure the next wave of business, especially in a climate where project economics are tight.

Within the project pipeline, new leads are maturing in Guinea and Burkina Faso, among other territories, both in gold and other minerals, including graphite.

"We do have some exciting opportunities that we are working on."

The goal is to help customers not only in delivering robust power solutions, as the company and its Network has always done, but by bringing down the cost of energy over the life of any project.

"Our objective for this year is definitely to work on the cost of energy, we always want to improve on this," adds Jacquin. "Our objective is to remain the reference partner in West Africa." ■

IFAT Africa will be displaying green technologies for sub-Saharan Africa

IFAT Africa will be showing environmental technologies tailored to sub-Saharan Africa.

One of the main topics of this year's edition of the trade fair for water, wastewater, waste and recycling will be the treatment of industrial water.

Image Credit: Adobe Stock

Green technologies on show at IFAT Africa will include dry ash handling and biological treatment.

Dr Lester Goldman, CEO of the Water Institute of Southern Africa (WISA) said, "The treatment processes of industrial water and wastewater have the potential to significantly improve the existing systems in South Africa and in other nations of this continent – provided that they are designed according to sustainable criteria."

He added, "Particularly the industrial sector offering the right technologies can significantly reduce water consumption in the country and thus can help ease the situation. These technologies include dry ash handling, closed-loop ash recycling, chemical precipitation and biological treatment – such as an activated sludge process, membrane systems and evaporation-crystallisation systems. Technological advancements in ion exchange membranes and electrodialysis systems have shown great efficiencies."

Wastewater experts stress that repeated and prolonged power outages have a major impact on water and wastewater systems, putting pressure on facilities already failing battling with ageing infrastructure, and a lack of funding and skills resources. Power outages impact reservoir pumps, resulting in water cuts along with power outages – particularly in urban areas with high demand.

Tumelo Gopane, managing director of East Rand Water Care Company (ERWAT), which provides bulk wastewater conveyance and treatment to thousands of industries across Ekurhuleni, said that water treatment facilities in the major metros have no option to baseload power, supplied by Eskom.

He said, "Smaller pump stations could potentially look to alternative power, but the major plants in urban areas cannot simply procure generators or implement solar generation – they have massive power requirements."

IFAT Africa takes place from July 9-11 at the Gallagher Convention Centre in Johannesburg.

PRIVATE SECTOR COULD FIX SA WATER CRISIS

South Africa's dams, rivers, wastewater systems and water distribution systems are in a dire state, but the solutions to these challenges are readily available within the country. This is according to water sector experts who were speaking ahead of IFAT Africa.

Unless urgent action is taken, South Africa's looming water crisis will prove far more devastating than the power crisis, potentially crippling the economy and costing lives, claimed Eric Bruggeman, CEO of the South African Capital Equipment Export Council (SACEEC), which endorses IFAT.

He said, "The majority of our dams, water treatment facilities and wastewater systems are more than 30 years old, with some as old as 100 years. Inadequate maintenance has been done in the past 20 years and the population has doubled since this infrastructure was installed, so it cannot cope with demand. As an arid country, we have to provide more dams in catchment areas and maximise the water we have."

VOITH SUPPLIES SOLUTION FOR KABU HYDRO PLANT

Voith has won an order to supply electrical equipment for the small hydropower plant Kabu 16 in Burundi.

Voith will provide two vertical Francis turbines with a capacity of 10 MW each, valves, generators, a turbine governor and automation system as well as the mechanical and electrical balance of plant systems.

The company will also supervise the installation and commissioning of the plant.

Construction is already in progress since March and expected to be finished by autumn 2020.

The project is of high national importance, as it will provide significant benefits to the people in Burundi in terms of improved power supply, employment generation and infrastructure improvement.

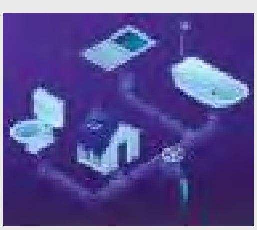
"The small hydropower plant Kabu 16 in Burundi will definitely contribute to the economic and social development of the region", said Saurabh Sharma, vice president and business head, Small Hydro of Voith Hydro India. "I am proud that Voith can support the project with a complete water to wire solution. The future plant operator will also benefit from a plant with a long performance time alongside low maintenance requirements."

Small hydro power plants are an important component of the African energy mix. However, only a small percentage of the small hydropower potential on the continent has been exploited yet. Especially in the Central African countries with low electrification rates, there is extensive potential for future developments. The expansion of small-scale hydropower can help to supply the population with electricity. Especially in remote and mountainous regions, small hydropower plants deliver electricity to thousands of people. Rural societies running industries can benefit from a small hydropower plant networks.

BRIEFS

RO-KA-TECH records biggest turnout

Image Credit: Adobe Stock

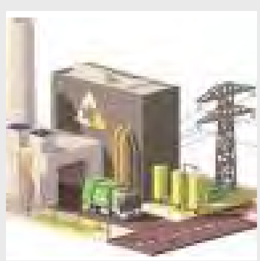


RO-KA-TECH has transformed into a niche event for sewer technology.

More than 11,000 visitors attended RO-KA-TECH from 8-11 May in Kassel to find out the latest developments and technologies in the field of pipe and sewer technology.

RO-KA-TECH has long since transcended its status as a niche event for the pipe and sewer technology industry. "Once again it was great," said Frank Mersmann, managing director of the pipe liner manufacturer SAERTEX multiCom.

Image Credit: Adobe Stock



Waste to energy are among the issues to be discussed at IFAT Africa.

IWMSA aligns with IFAT Africa

The Institute of Waste Management of Southern Africa (IWMSA) has signed a Memorandum of Understanding with Messe München South Africa, organisers of IFAT Africa, to collaborate on the exhibition and conference.

IWMSA president Leon Grobbelaar said, "We've approached academic institutions to collaborate with us in delivering master classes on issues such as landfill air space, waste to energy and the need for PPPs to overcome the waste crisis."

The value of wastewater

Water is precious, but the scarcity of drinkable water across Africa has lead to an increasing awareness of the value of wastewater as a source, once treated, of much-needed potable water.

Water is precious. And while populations across the developed world need reminding of that fact, millions across the developing regions of the globe need no such reminder of the life-giving nature of potable water. For the UN, water security is high on its list of threats to the future of humankind and why the UNESCO – United Nations Educational, Scientific and Cultural Organisation-World Water Assessment Programme (UNESCO WWAP) coordinates the work of 31 UN-Water members and partners in producing the annual World Water Development Reports (WWDR). These provide an authoritative picture of the state, use and management of freshwater resources around the world; they highlight UNESCO's deep understanding of where wastewater fits into any 'water-secure' future. Its 2017 report, 'Wastewater – The Untapped Resource', points out that as most human activities that use water produce wastewater, simply improving wastewater management will benefit sustainable social, environmental and economic development. The report stresses that effective wastewater management will play a crucial role in helping UN members states achieve the goals set out in the UN's '2030 Agenda for Sustainable Development. However, as the demand for water grows, the quantity of wastewater produced and its overall pollution load on the environment is increasing worldwide, especially in Africa and other developing regions. According to UNESCO, 'more than 80 per cent of the world's wastewater – and more than 95 per cent in some least developed countries – is released to the environment without treatment', this in turn becomes diluted in lakes and rivers (impacting freshwater flora and fauna), which is transported downstream and eventually into the oceans, where the marine environment suffers. When it leaches into aquifers, freshwater supplies become contaminated as a result. In Lagos, for example, more than 1.5 million cu/m o f wastewater is generated daily, most ending up untreated in Lagos Lagoon. This situation will worsen as the city's population exceeds 23 million by 2020, unless immediate action occurs.

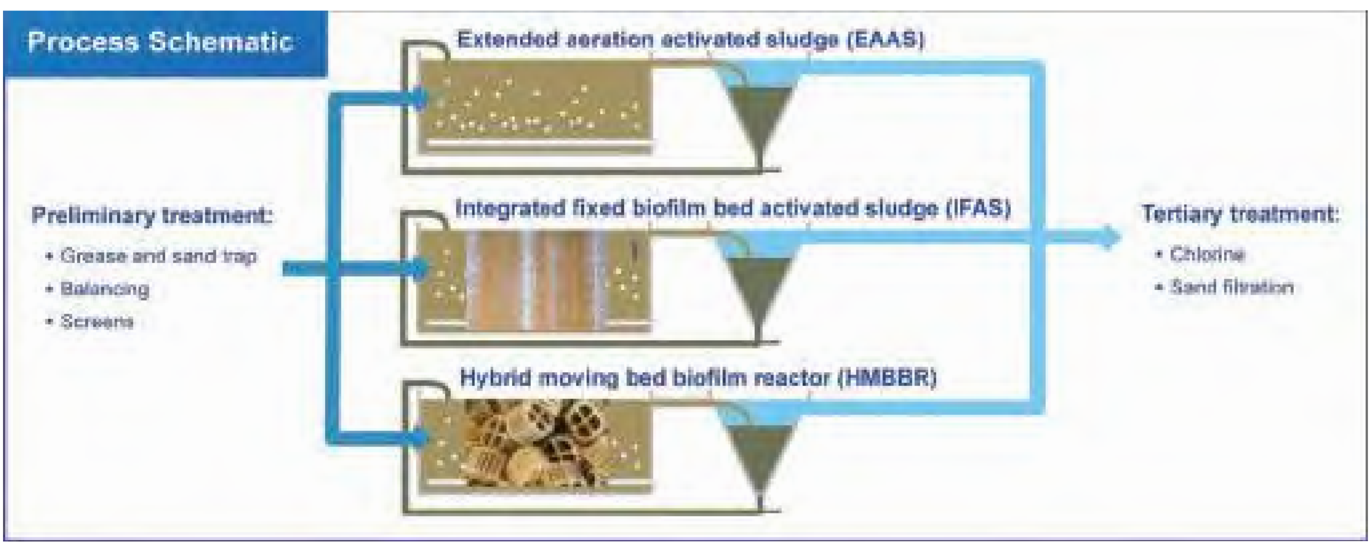
While wastewater is seen as the problem; it is actually part of the solution. Thankfully, public/private sector decision makers and the wider public are waking up to the importance of managing domestic and industrial wastewater and its value as a sustainable source of potable water, energy, nutrients and other recoverable valuable by-products.

Wastewater projects in Africa

In South Africa, the government has underpinned rehabilitation projects for wastewater treatment plants (WWTP) along the Vaal River in Mpumalanga Province, with US$24mn earmarked for the work, which has been undertaken as a result of a serious raw sewage pollution incident last year involving Emfuleni Municipality pump stations along the northern stretches of the river. A number of agencies are involved and signed up to the project: the Agriculture, Water and Sanitation Ministry, South African National Defence Force (SANDF), Municipal Infrastructure Support Agent (MISA), Emfuleni Local Municipality and East River Water care Company (ERWAT). The latter is the implementing agent and wastewater specialist tasked with ensuring that all wastewater treatment infrastructure and equipment is returned to an operational condition and is no longer the source of pollution.

Module six of the Sebokeng wastewater treatment project, set to benefit 120,000 households in the southern Gauteng, were set to be completed by the end of May, with module seven due to begin by July. SANDF will train 2,000 youth and community members to help guard the project's 44 pump stations until completion in March 2020.

In Kisumu County, Kenya, plans to construct a US$40mn wastewater



El Gouna's WWTP was running a comparison between three techniques (an optimisation of the conventional activated sludge process, the application of a fixed and a moving bed biofilm carrier hybrid process) and monitored this with s::can products, to determine ideal process conditions and the maximum capacity of the WWTP.

"In Cairo, WWTP projects are widespread, in part to counter potential impacts from the damming of the Nile in Ethiopia, which could have a disastrous effect on supplies to the capital"

treatment plant, have been announced by Kenya Breweries, as part of efforts by local industries to reduce its pollution into Lake Victoria's Winam Gulf. Several companies have been implicated in what has been termed the 'death of the Winam Gulf', which has resulted in domestic water quality decline, depleted fish stocks and the proliferation of water hyacinth.

There are three phases to the project. The first is the receipt of water contaminated with organic brewery waste and chemicals, including sodium hydroxide and sulphates, and treat it so that its 'carbon oxygen demand' and 'biochemical oxygen demand' fall from 3,000 parts per million to purity levels that are 90 per cent safe for release into a sewer line.

Part of phase one will complete in August when almost 90 per cent of the brewery's wastewater will be reusable. When fully completed water from the 1.5-million-litre-per-day plant will be safe for human consumption. The second stage will deliver water that is 99 per cent pure and able to be released into any water body such as Lake Victoria. A third phase will then get rid of the final one per cent of impurity, so the water is potable.

In Cairo, WWTP projects are widespread, in part to counter potential impacts from the damming of the Nile in Ethiopia, which could have a disastrous effect on supplies to the capital. At Abu Rawash, the design, construction and maintenance of what will be one of the largest WWTPs in the world, will eventually treat 1.6million cu/m of wastewater per day serving six million people. Backed by the African Development Bank, the project includes the enlargement of an existing primary treatment plant that treats 1.2million cu/m a day along with the addition of a new biological treatment process.

Latest tech

A system from Austrian company, s::can Messtechnik, is being used for modelling and dynamic simulation of different biological processes at a WWTP in El Gouna, Eygpt. The aim is to find ways to increase the capacity of existing WWTPs. El Gouna currently treats its wastewater in a central activated sludge WWTP, which, due to restrictions on new construction, cannot be expanded despite population growth.

The trials compare three techniques: optimisation of conventional activated sludge processes; the application of a fixed-biofilm, a carrier-hybrid process; a moving-bed biofilm carrier-hybrid process. The application of biofilm carriers is innovative because it allows upgrading of existing WWTPs without building new tanks. However, since it relatively new compared to conventional activated sludge systems, there remain design and performance uncertainties. That said, whereas it was previously impossible to observe differences between the three processes, by using the s::can Online Monitoring System, researchers can now see different dynamic reactions on changing inflow characteristics. The results will be applied to, and help alleviate problems at, a number of overloaded plants across Egypt. ■

By Tim Guest

EMPOWERING LOCAL MINING INDUSTRY

Industrial and mining vibrating screens manufacturer Kwatani is one of the few local manufacturers that hold an ISO 9001:2015 quality certification as well as a level 1 broad-based black economic empowerment (B-BBEE) rating.

With this rating the company's mining clients can claim 135 per cent of money spent on Kwatani as well as enjoy the benefit of procuring from a majority black-owned company. The company also claims to be independent of international technology and employs a far higher percentage of engineering personnel.

The company's CEO Kim Schoepflin said while recent amendments to the South Africa Mining Charter place even greater emphasis on the local manufacturing of mining equipment and products, it is vital to meaningfully measure exactly what 'local content' means in the mining environment.

The charter, which was released in September, states that 70 per cent of mining goods procured by mines must be locally manufactured. She stated that while the charter has certain local content requirements, the devil is in the detail.

Image Credit: Kwatani

Kim Schoepflin, CEO of Kwatani.

Government agencies like the South African Bureau of Standards (SABS) and the Department of Trade and Industry (DTI) are working with the industry on a system to verify local content.

"We can proudly say that Kwatani's screening machines are locally manufactured," she added. "Our equipment is designed in our own in-house facility by our competent engineers and then built under stringent quality control conditions in our Spartan plant. This allows us to contribute significantly to job creation and economic transformation."

"The process of determining a supplier's level of local content is complex," she noted. "It is vital that the right tools are developed to place all players on an even playing field. Measuring local content must be meaningful and accurate, if it is to be effective."

The company was also recognised as a finalist in the SACEEC Exporter of the Year Awards held in Johannesburg.

Schoepflin highlighted that the long-term relationships with local suppliers means that everyone in the supply chain is committed to quality manufacture. This enhances the quality of the final product, while raising the capacity of even the smallest players in the supply chain.

"A major benefit of being a fully local OEM is that we can control quality," she explained. "With our suppliers close by, this facilitates close collaboration, quick turnaround and integration into our quality systems."

DELIVERING SHARPER SEPARATION

Locally manufactured by Weir Minerals Africa, the Cavex CVXT tile lined hydrocyclone is now available in a large range of sizes to process any feed tonnage requirement. All components are designed for ease of maintenance and efficient operation.

The locally manufactured Cavex CVXT tile lined hydrocyclone.

The Cavex CVXT tile lined hydrocyclone features unique laminar spiral inlet geometry designed to deliver sharper separation, maximum capacity and, importantly, a longer wear life than conventional involute and tangential feed inlet designs.

The company says this innovative design provides a natural flow path into the cyclone body, allowing the feed stream to blend smoothly with the rotating slurry inside the chamber. The result is greatly reduced turbulence through the whole cyclone, dramatically improving the separation efficiency of the hydrocyclone.

The Cavex CVXT hydrocyclone can be fitted with an extended barrel which maximises efficiency by increasing the residence time in the hydrocyclone. This is especially for ore with a high content of near density materials. The hydrocyclone is also available with different overflow configuration options to suit operational needs.

To maintain separate efficiency at different operating yields and spigot sizes, a wide range of vortex finder sizes ranging from 0.4 to 0.5 is available. These are designed to maintain a strong air-core at the different sizes. The spigot sizes range from normal to extra high capacity to accommodate low yield ores. These can also be manufactured in different material to prolong the hydrocyclone life and efficiency.

Advertiser's Index

UGANDAN UTILITY CHOOSES TELEMATICS SOLUTION TO OPTIMISE FLEET

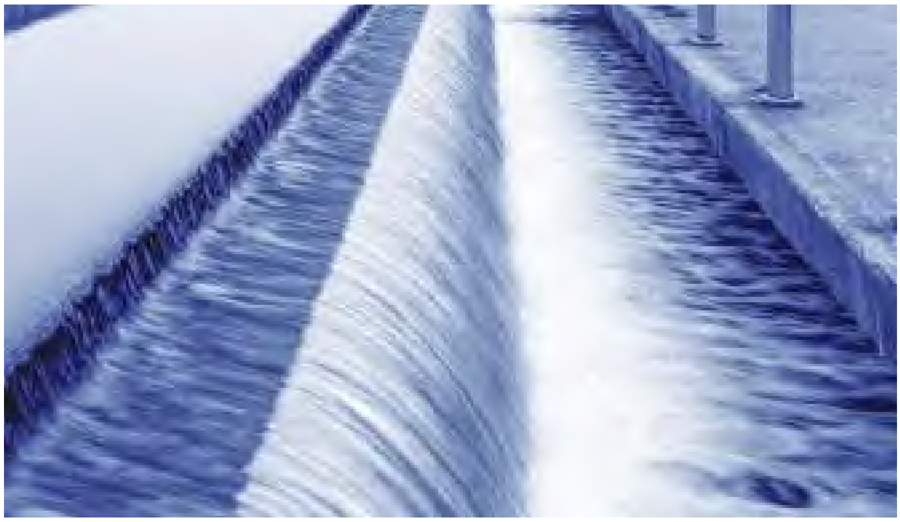


Image Credit: Adobe Stock

A&S Electronics has been awarded a tender to supply a water services utility in Uganda.

MiX Telematics, a leading global provider of fleet and mobile asset management solutions, has announced its channel partner in East Africa, A&S Electronics, has been awarded a tender to supply a water services provider in Uganda with a comprehensive fleet management solution.

The utility operates an extensive fleet to provide water for use in agriculture, rural industries and tourism. It also coordinates the national development of water resources and provides effective planning and management for the water and sanitation sectors.

"The data provided by our telematics solution enables this service provider to optimise the utilisation of its fleet, manage drivers, reduce costs, and increase productivity. The benefits from effective mobile asset management are tangible and provide improvements that are sustainable," says Gert Pretorius, managing director of MiX Telematics Africa.

"Our premium fleet solution provides real-time insight, allowing the fleet manager to make informed decisions, with the aim of improving productivity and reducing operational expenses. This online platform processes data from multiple assets, creating customisable reports, graphs and dashboards that provide actionable intelligence."

Given today's demands, fleet management is essential for utility companies that undertake the critical task of delivering natural resources to consumers. MiX Telematics says it partners with various companies in the service and utility industry around the world in order to help them adhere to evolving government and customer compliance demands.

Brexit and Africa

Andrew Skipper, partner at Hogan Lovells addresses how Africa can take advantage for the modern 'scramble for Africa'.

Brexit, combined with the trade wars involving the world's two powerhouse economies, China and the USA, is a major factor in generating global uncertainty at present. Uncertainty is bad for global business, which also impacts African countries, including Nigeria, the biggest economy on the African continent.

From an African perspective these factors could however play to the continent's advantage as we see potentially a modern 'scramble for Africa'.

European countries, as shown by the unprecedented recent approaches of Theresa May, British Prime Minister; Angela Merkel, German Chancellor; and President Emmanuel Macron from France, are keen to invest and develop closer links with Africa, while China has its Belt and Road policy targeting the continent and Japan is holding TICAD – the Tokyo International Conference of Africa's Development – later this year. The USA too, through the Overseas Private Investment Corporation (OPIC), is seeking significantly increased investment in Africa. The UK indeed intends being the biggest investor among the G7 in Africa, and others are following suit.

Decisive action needed

So in an uncertain world Africa should be able to take advantage, by acting decisively and strategically. One way may be through the Africa Continental Free Trade Area (AfCFTA) agreement.

The AfCFTA agreement came into force on 30 May and will make Africa the largest free-trade area in the world by population. The trade agreement was given the go ahead on April 29 as 22 countries have now ratified its adoption.

The African Union and African ministers of trade must now finalise work on supporting instruments to facilitate the launch of the operational phase of the AfCFTA during an extra-ordinary heads of state and government summit on 7 July.

Image Credit: Hogan Lovells

Andrew Skipper.

While Nigeria, the biggest economy on the continent, has not yet signed or ratified the agreement, recent statements of the government concerned about 'the train leaving the station' may hint at movement towards joining.

> "There is no reason not to continue using English law post Brexit"
>
> **ANDREW SKIPPER, PARTNER AT HOGAN LOVELLS**

Closing the gap

Regardless of Brexit and AfCFTA, the major concerns underpinning growth and development in Africa remain power, infrastructure, and education. With a pan-African gap of US$170bn per year in infrastructure, the benefits driven by free trade, including industrialisation, will not be capable of full exploitation unless this changes.

Progress towards closing this gap can be made, assuming that African countries drive a clear and certain strategy and policy, put predictable regulations in place, and deal with currency fluctuations and control corruption.

The future of English law

As to the legal market, there have been a number of debates around the future use of English law, arbitration and enforceability of judgments post Brexit.

Broadly speaking there is no reason not to continue using English as governing law post Brexit. All the same reasons for using the system still stand, including its sophistication, its long history of jurisprudence, and that it is well-recognised around the world and commercially aware.

Each contract will continue to need to be taken on its merits. In addition, for arbitration Brexit will not impact the enforcement of arbitration awards – generally these are dealt with under the New York Convention. This will be unaffected by Brexit and London will continue to be as important as a seat for international arbitration. ■


Keep Powering On
For more than 50 years, generator sets from FG Wilson have guaranteed electric power for businesses across the world.
We offer a complete range of self-contained generator sets from 6.8 – 2,500 kVA, designed and manufactured in modern world-class facilities, installed and fully supported by our extensive, fully trained dealer network.
To find out more visit www.fgwilson.com
FG WILSON