

FINANCE

Leveraging trade to boost socio-economic growth in Africa **P20**

TECHNOLOGY

Earth Observation satellites enable land management strategies **P28**

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MINING

Bulk sampling programme gets underway in Togo **P64**

African Review

OCTOBER 2018

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I AM THE POWER

OFFSHORE SOLUTIONS

P58

...nes in Guinea's bauxite handling facilities

GHANA: GROWING EXPORTS

P26

...al report examining the country's robust economy

GENSET MARKET ANALYSIS

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P26

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GENSET MARKET ANALYSIS

P36

Genset demand and usage during second quarter of 2018

P18

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Cover picture: Konecranes' floating crane solution.

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Editor's Note

Welcome to the October issue. As always, we offer an eclectic mix of news and features for you to sit back and enjoy. Icebergs is the word of the month as we catch up with legendary salvage master Nick Sloane about his 'crazy' plan to haul melting icebergs off the coast of Antarctica to Cape Town to avoid Day Zero in the near future. Anyone feeling sceptical should read that investors are ready to stump up the multi-dollar investment for towing the 100 million-tonne iceberg. But the question remains whether the authorities will pay for the actual operating cost of delivering the water to the people. Find out more on page 18.

Over in construction, our cover story looks at the innovative solutions on offer for cranes and how floating cranes, in particular, are playing a major role in bauxite handling activities off the coast of Guinea, page 58.

In the world of power, genset manufacturers will be pleased to know that imports of diesel gensets have risen by more than 10 per cent in Africa in the first half of 2018, page 36.

And finally, in Nayega, Togo, a Manganese bulk sampling testwork programme is in progress, which could help transform the local economy in the future.

Keep reading!

Samantha Payne, Editor

Contents

- 18 Environment**
Captain Nick Sloane explains why towing icebergs to the Cape Town could be a viable water supply alternative for the Western Cape.
- 22 Profile**
Zandre Campos, CEO of ABO Capital, sheds light on Angola's new private investment law and explains why the country is on the right track.
- 24 Cities**
In part two of our series on sustainable cities, economist Moin Siddiqi evaluates how urban planning, land use and building regulations are important to promote urban connectivity.
- 26 Ghana**
Martin Clark provides an excellent economic overview of Ghana that, despite challenges concerning its high debt levels, it still remains one of Africa's most dynamic economies.
- 28 Technology**
Earth Observation satellites are now offering high quality resolution images at an affordable rate to scientists, governments and industries in Africa.
- 36 Power**
Imported diesel gensets have soared in Africa across the first half of 2018, according to the latest research by PowerGen Statistics.
- 58 Construction**
Cranes are the hidden heroes of the construction world. Innovative solutions from mobile to floating cranes are becoming more important in strategic projects in Africa.
- 64 Mining**
Keras Resources talks to *African Review* about its Manganese bulk sampling testwork programme in Togo.



P18



P22



P58



P64

UN study to identify ways to progress Sahel region's development

The United Nations is revamping its action plan to address the root causes of the complex crisis in Africa's Sahel region, in particular outlining a development vision for the region through a prospective socio-economic study by its agencies led by the Economic Commission for Africa (ECA).

The study, which focuses on 10 countries, began in April this year and aims to identify the fundamentals and set conditions needed for the region's development.

The Sahel, though plagued by a host of problems, is endowed with abundant natural resources such as oil, gold and uranium, which if managed equitably and in a sustainable manner, can transform the lives of the millions of people in the region. At least 24mn people are in need of humanitarian assistance in the Sahel this year.

The study will provide relevant analysis and strategic choices to Sahel governments, key regional stakeholders and the United Nations system, in a bid to speed-up socio-economic development, and facilitate the achievement of national, regional and international development programmes.

This prospective study, which also falls within the framework of reshaping the United Nations Integrated Strategy for the Sahel (UNISS), the African Union's 2063 Agenda and the Sustainable Development Goals (SDGs), will enable the ten concerned countries (Burkina Faso, Chad, Cameroon, the Gambia, Guinea, Mali, Mauritania, Nigeria, Niger, and Senegal) to come up with a sustainable response to the region's challenges, particularly those relating to governance, security, and sustainable development.



The Sahel region is endowed with abundant natural resources

Image Credit: CFP/Fllickr

ABB DIGITAL TECHNOLOGY TO BOOST EGYPT'S POWER GRID

ABB has been selected by the Egyptian Electricity Transmission Company (EETC) to help upgrade and digitalise the electrical grid in the Port Said region, located along the country's Mediterranean coast and including the Suez Canal. The region has a growing population of more than 12 million.

The scope of supply includes an ABB Ability™ Network Manager SCADA (Supervisory Control and Data Acquisition)/Energy Management System (EMS), more than 120 Remote Terminal Units (RTUs) and a fiber-optic communications network to monitor and control the grid more efficiently. ABB Ability™ is the company's cross-industry digital offering.

The comprehensive initiative is part of the country's efforts to upgrade and modernise its power grid. A reliable supply of electricity plays a critical role in operating the Suez Canal, through which around 17,000 ships pass annually carrying up to 800 million tons of cargo. Demand for electricity is growing fast as a result of rapid urbanisation and economic growth.

In addition, the country has set ambitious targets for the roll-out and expansion of renewable electricity generation as well as the transmission infrastructure over the next few years.

The order is part of a larger project to upgrade the grid in Egypt, and will be handled by a consortium composed of ABB and El Sewedy Electric.

"ABB continues to support Egypt's efforts to upgrade and expand its power grid," said Massimo Danieli, head of ABB's Grid Automation business, within the company's Power Grids division. "The digital transformation in Egypt's power network will enhance the operations of the Suez Canal and ensure a reliable power supply for millions."

IFC RAMPS UP MENA INVESTMENTS

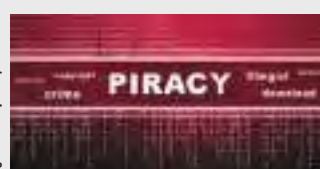
IFC, a member of the World Bank Group, stepped up its investments in the Middle East and North Africa in fiscal year 2018, ending 30 June, committing a record US\$2 billion to support the region's private sector, boost innovation, drive economic growth, and create jobs. Major projects included a US\$653mn financing package for a landmark solar array in Egypt.

"Our commitments in FY18 set a new record for IFC in the region," said Mouayed Makhoul, IFC regional director for the Middle East and North Africa.

In FY19, IFC plans to maintain its strategic focus on creating new markets across MENA by supporting the region's fast-growing renewable energy sector and helping young entrepreneurs deliver innovations, as well as working to expand access to finance for small and medium-sized businesses and helping empower women.

Image Credit: spaxia/Adobe Stock

Egypt sees drop in software piracy



Reduced piracy rates are increasing Egypt's attractiveness to foreign investors.

Egypt has seen a two per cent drop in its software piracy rate to reach 59 per cent, the US-based Business Software Alliance reveals in its recent study. Egypt has managed to decrease the commercial value of the unlicensed software from US\$157mn in 2015 to US\$64mn in 2017. Last July, the Egyptian parliament passed the cyber-crime law that helps in mitigating cyber threats and establishes rules and measures to be followed by local ISPs.

Developing intra-Arab trade



The agreement will boost inter-Arab trade.

The League of Arab States (LAS) and the International Islamic Trade Finance Corporation (ITFC) have signed an MoU towards accelerating cooperation on intra-Arab trade. It outlines clear objectives aimed at enhancing trade capacities and improving structures and mechanisms of trade cooperation among Arab countries. Under the MoU, LAS and ITFC will jointly coordinate the design, financing and implementation of technical assistance and capacity building programmes.

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BBOXX and GE partner to provide energy access in the Democratic Republic of Congo

BBOXX, a next generation utility, and GE have launched a partnership to provide energy access for small businesses, schools and other organisations in the Democratic Republic of Congo (DRC).

The next generation utility has deployed the first of GE's Hybrid Distributed Power (HDP) systems in the city of Goma, close to the Rwandan border, to connect up to 10 customers. The first is a local school, Kivu International School. More customers will be added to the "mini grid" over the following weeks.

GE's HDP technology provides sustainable energy in off-grid settings, combining solar energy, battery storage and diesel generation to ensure a reliable electricity supply.

The systems will be linked between GE's Predix digital remote monitoring and diagnostics platform to BBOXX's cloud-based Pulse platform in the near future. This pioneering technology proactively troubleshoots issues with any system before they become a problem for customers. Pulse uses big data and predictive analytics to help improve customer service and provide a deep understanding of customer behaviour.

The partnership forms part of BBOXX's strategy to improve access to vital utilities for customers with a range of needs, from small solar home systems of 50W in rural communities to businesses in urban areas with higher energy demands of 0.5kW–5.0kW. GE's HDP system in Goma is capable of delivering up to 30kW.

"Many businesses and small organisations in the DRC and across the developing world, do not have a reliable, affordable way of maintaining electricity supply. Hybrid distributed power and micro-grid technology provides one solution to solve this pressing problem by delivering an on-grid experience in an off-grid setting," said Mansoor Hamayun, CEO and co-founder of BBOXX.

A large number of businesses and organisations across the DRC are without sufficient energy access. Many are paying excessive amounts for diesel and have to dedicate considerable time to solving problems caused by unreliable supply development.



Image Credit: BBOXX
BBOXX supplies GE's Hybrid Distributed Power systems in the city of Goma.

ECA MAKES CASE FOR AFRICA FREE TRADE AREA

The African Continental Free Trade Area (AfCFTA) is a unique and timely opportunity for the continent and offers more benefits than other trading arrangements with regions outside the continent, said Andrew Mold, acting director of UN Economic Commission for Africa (ECA) in Eastern Africa.

Mold indicated that the AfCFTA marks a fundamental step towards dismantling barriers and reducing costs to intra-African trade, boosting industrialisation and improving productivity and competitiveness of Africa for the creation of the much-needed jobs on the continent. He was speaking during a conference on the Industrial Policy of Rwanda for the Next Decade, a meeting organised by Rwanda Ministry of Trade and Industry, the International Growth Centre (IGC) and World Bank.

Mold made the case for AfCFTA, explaining that Africa's trade with the rest of the world over the past six decades has not delivered the promised diversification and that most countries on the continent are still import-dependent and export excessive amounts of unprocessed commodities, and, as a consequence, run up large trade deficits.

ECA research states Africa's trade balance moved from a surplus of US\$24bn in 2012 to a deficit of US\$87bn in 2014 and US\$155bn in 2016.

ECA estimates in recent years African imports have fallen, but not by enough to reduce the widening trade deficit. Africa's merchandise imports declined, from US\$642bn in 2014 to \$501bn in 2016. But exports contracted significantly more than imports over the period, contributing to the region's widening trade deficit. The AfCFTA, according to ECA, could boost intra-African trade by more than 52 per cent through the elimination of import duties. The benefits would double if combined with trade facilitation measures to reduce non-tariff barriers.

THREADSOL PRESENTS SOFTWARE SOLUTIONS

ThreadSol presented its range of innovative software solutions for apparel manufacturers in Kenya at Origin Africa 2018 from 9 September to 11 September.

In these times of ascending costs and descending profit margins, ThreadSol says it has a crucial role to play in the apparel industry, especially in Africa with the emergence of the industry. The company's presence at Origin Africa establishes its commitment to sustaining its efforts of introducing innovative garment tech solutions for the apparel industry. "Our presence at Origin Africa is a proof of our commitment to the apparel industry, especially the African apparel industry. The solutions we offered at the expo demonstrate that we are continuously aiming to accomplish our customers' requirements to aid them in overcoming the challenges of the industry and increase profitability by targeting the biggest expense in manufacturing fabric," says Anas Shakil, senior partner at ThreadSol.

BRIEFS



Image Credit: Adobe Stock
The IMF team visited Somalia to discuss its macroeconomic developments.

IMF concludes visit to Somalia

Mohamad H. Elhage led an International Monetary Fund team to Nairobi from 15-20 September to discuss with the authorities recent macroeconomic developments, progress under the Staff-Monitored Programme (SMP) and the economic outlook.

In a statement released by Elhage, "The Somali authorities are building a good track record of policy and reform implementation."



Image Credit: Gilat Telecom
L-r: Moise Bayi vice president, Nexttel Arik Zenouda, West Africa sales director, Gilat Telecom, Baba Amadou Danpullo, chairman of Nexttel.

Gilat Telecom chosen for 4G broadband services in Cameroon

Gilat Telecom (formerly known as Gilat Satcom) has announced that it has been chosen by Nexttel to provide 4G broadband services in Cameroon. Nexttel has been operational in Cameroon since 2015 and is part of the Viettel Group of operators. With a customer base of approximately five million, it is now the third largest operator in Cameroon (after Orange and MTN). It will be using Gilat Telecom's fibre network in Cameroon and across Africa for a fast broadband service.

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African nations set to benefit from US\$395mn investment from the UK

Prime Minister Theresa May and International Trade Minister George Hollingbery led a 29-strong business delegation on their visit to South Africa, Nigeria and Kenya in September to promote economic ties with Africa.

During the visit deals worth more than £300mn (US\$395mn) have been agreed within a variety of sectors, creating close to 3,000 jobs across Africa.

The commercial activity was announced as the Prime Minister set out the UK's ambition to be the largest G7 investor in Africa by 2022, ahead of an Africa Investment Summit, which will be held in the UK next year.

Among the deals in the finance and technology sector included Africa Logistics Properties opening its flagship project 'ALP Nairobi North' in September, with 50,000 sq m of space, and has already commenced work on 'ALP Nairobi West' which will provide an additional 30,000 sq m of space. Together these projects represent £70mn (US\$92mn) of new investment. In the energy and environment sector, Clarke Energy plans to work with Kohler SDMO to open their first assembly plant for diesel engines which will be based in Nigeria. The £650,000 (US\$855mn) investment from the UK into Lagos will see 22 full time staff employed at the start up phase. Azuri Technologies and Unilever will also enter into a partnership to bring pay-as-you-go solar home lighting to millions of off-grid households in Kenya, leveraging Azuri's £16mn (US\$21mn) investment in Kenya to date.

Prime Minister Theresa May said, "The deals demonstrate the already close trade and investment links between the UK and African countries, and the potential that exists for other UK businesses to make the most of the growing opportunities on the continent.

"With a shared passion for entrepreneurship, technology and innovation, now is the time for UK companies to strengthen their partnerships with Africa to boost jobs and drive prosperity both at home and overseas."

George Hollingbery, International Trade Minister, said, "I am delighted to have joined the Prime Minister on this visit showcasing the very best of the UK-Africa partnership and all that global Britain has to offer in the region.

"Our trade and investment ties with South Africa, Kenya and Nigeria are already substantial. Trade between the UK and Africa was worth more than £31bn (US\$41bn) last year, and the Prime Minister has made it the UK's ambition to be the largest G7 investor in Africa by 2022.

"It is hugely positive to see these new deals signalling that our strong trading relationship is continuing to go from strength to strength."

As part of the visit, the Prime Minister also announced that an agreement with the Southern African Customs Union and Mozambique means the UK will be ready to carry over the EU's Economic Partnership Agreement after Brexit. This represents the most advanced statement of progress yet of around 40 existing EU trade agreements that the UK is rolling over.



Image Credit: Adobe Stock

The UK hopes to be the largest G7 investor in Africa by 2022.

VANTAGE CAPITAL EXITS NEW GX CAPITAL

Vantage Capital, Africa's largest mezzanine debt fund manager, announced on 7 September that it has fully exited its investment in New GX Capital, a leading 100 per cent black family owned investment holding company in South Africa. This exit achieves returns for Vantage's Fund III investors of more than 35 per cent. Vantage provided R250mn (US\$20mn) to New GX in 2016 to finance follow-on investments in telecommunications infrastructure, waste management and information technology.

Mokgome Mogoba, associate partner at Vantage Capital, said, "We provided R250mn of growth capital to New GX which enabled the group to more than double its net asset value over the two-year tenor of our investment. New GX invested in South Africa's fast-growing fibre and telecoms infrastructure sectors through investee companies Dartcom and DFA. New GX Enviro built a first of its kind R200mn waste recycling plant in Atteridgeville township in Tshwane, boosting the township economy. Our partnership bolstered local manufacturing capacity by constructing a R100mn fibre manufacturing plant 1 km from Mamelodi township in Tshwane. New GX invested in an information technology platform with partners from India that employs more than 200 people. We plan to support more talented black industrialists such as Khudu Pitje, the founder and CEO of New GX, as we seek to transform the South African economy and uplift the township economy."

Luc Albinski, managing partner at Vantage Capital, added, "Fund III investors have had a bumper ride with strong returns being generated from investments such as New GX. These results support our view that well-selected mezzanine debt deals can generate returns that rival traditional private equity returns with less downside risk."

► BRIEFS

Orange Digital Ventures invests in Yoco



Image Credit: Adobe Stock

Orange Digital Ventures Africa invests in South African Yoco.

Orange Digital Ventures Africa – the Orange Group's venture capital investment fund for Africa – has made a second investment in one of the continent's most promising fintech companies, South African Yoco.

Yoco is a leading company in mobile points of sale (mPOS) in South Africa, allowing merchants to accept card payments using a smartphone or tablet as well as manage their day-to-day activities using POS software.

Madagascar: Olderpreneurial capital of the world



Image Credit: Allstar Business Solutions

Madagascar beats Ecuador and Chile to having the highest percentage of olderpreneurs.

Madagascar has the highest percentage of 'olderpreneurs' (entrepreneurs over the age of 50) compared to the rest of the world, according to Allstar Business Solutions.

The top five economies were Madagascar (39 per cent), Ecuador (23 per cent), Chile (17.1 per cent), Peru (16.7 per cent) and Lebanon (16.1 per cent). Anthony Trigo, head of digital at FLEETCOR said, "Olderpreneurs are challenging the notion that twenty-somethings dominate the world of entrepreneurship."



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Azimo announces partnership with Interswitch Group

European digital money transfer service Azimo has announced a strategic partnership with leading African payments business Interswitch Group.

The deal will further enable instant money transfers from 23 countries in Europe to any customer in Nigeria – Azimo's biggest market.

"A huge and rapidly growing population coupled with the explosion of smartphone ownership mean that Africa and in particular Nigeria is one of the most exciting fintech markets on the planet," said Michael Kent, founder and CEO of Azimo. "We look forward to working with fintech leader Interswitch to build new digital low-cost financial services that drive inclusion and transform the financial lives of our customers in both the UK and Africa."

By reaching millions more customers in Nigeria, Azimo's partnership with Interswitch will also help to tackle the problem of financial exclusion in a country where 40 per cent of the population is unbanked.

"We formed this partnership with Azimo as they are a global leader in cross border payments with great tech capability and a strong knowledge of our core markets. This agreement is a key milestone in our common strategy to better serve the Nigerians wherever they are located around the world," commented Mitchell Elegbe, group managing director and CEO at Interswitch.

In the longer term the deal will see the two companies build new mobile based financial services for Interswitch's rapidly expanding customer base of more than 25mn people in Nigeria, Kenya, Uganda and Tanzania.

Nigeria is among the top five countries for inbound remittances with over US\$20bn received every year, according to the World Bank.

Nigeria has experienced an explosion in smartphone ownership.

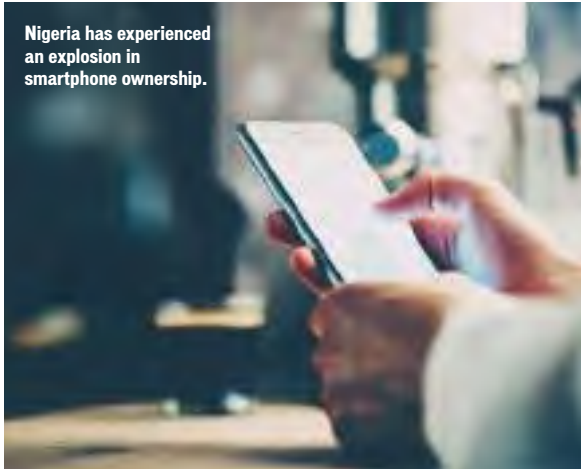


Image Credit: vitor technologies/Flickr

NEW DEAL TO BOOST EDUCATION AND TRADE

A consortium of international partners has signed a Memorandum of Understanding (MoU) which will boost education, skills development and recruitment opportunities for students at the University of East London (UEL), and the people of Ghana.

The MoU was signed during the conferral of an honorary doctorate by UEL to His Majesty Otumfuo Nana Osei Tutu II, King of the Ashanti, Ghana, in recognition of his services to education, in September.

The agreement sets out an ambitious 'Western Africa Access Corridor' springing from Ghana, which enhances education and trade. The major Ghanaian towns and cities will be connected with land and sea trading ports, and a new international airport in Kumasi, southern Ghana, will cater for passenger operations, cargo activity, aircraft maintenance and a state-of-the-art aviation skills academy.

The MoU was made possible thanks to the King's Investment Trust, AIT, Mace, an international construction and consultancy firm, the University of East London, His Majesty, King Osei Tutu Institute of Applied Sciences, Kumasi, and Youth Charter, an accredited United Nations organisation.

Carl Dainter, head of Aviation Consultancy at Mace Global, said, "By supporting the education of young people from Ghana in engineering, construction and project management in the UK, our new agreement will mean that Mace and UEL will help to support the growth of key skills in Ghana, as well as ensuring the delivery of world-class infrastructure and sustainable long-term economic growth."

Mace will offer UEL students from Ghana industry placements and education, skills development and recruitment opportunities.

His Majesty said, "Education is an enduring priority for me and the people of Ghana, so I wish to thank the University for this recognition."

DANGOTE VOTED TOP NIGERIA BRAND

Nigeria's Dangote (www.Dangote.com) has been voted the most valuable brand among the top 50 brands in Nigeria for 2018 in Brand Nigeria's survey, the first time a Nigerian brand has achieved this feat since 2013. Unveiling the list of the top 50 brands at an event attended by top executives as well as stakeholders in the marketing and advertising industry, Taiwo Oluboyede, the head of Brand Nigeria, explained that 46 per cent of the top brands, amounting to 23, are Nigerian brands.

Chief corporate communication officer of the Dangote Group, Anthony Chiejina said, "Through the construction and operation of large scale manufacturing facilities in Nigeria and across Africa, the Group is focused on building local manufacturing capacity to generate employment, prevent capital flight and provide locally produced goods for the people. The expansion of our business, especially the cement, has added to the popularity of our company and products."

► BRIEFS

AfDB promotes youth opportunities



The funds will help to promote women's empowerment.

The African Development Bank's Fund for African Private Sector Assistance (FAPA) will contribute US\$923,570 and US\$988,202 to finance the Bank's Fashionomics Africa Digital Marketplace and Entrepreneurship & Innovation Lab (eLab) programmes, respectively. They form key components of the Bank's Jobs for Youth in Africa Strategy, which invests in high-growth sectors to promote youth and women's empowerment, as well as create 25mn jobs over the next decade.



The partnership will make the exchange of Internet traffic more efficient.

IXP partnership launched

The Internet Society has announced that it is partnering with Facebook to develop Internet Exchange Points (IXP) throughout Africa. An Internet Exchange Point is where multiple local and international networks, ISPs and content providers interconnect their networks together to efficiently exchange Internet traffic through an arrangement commonly referred to as Peering, which helps to keep Internet traffic local. Currently, 42 per cent of countries in Africa lack IXPs.



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3 - 4

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9 - 10

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15 - 17

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tmt.knect365.com/africacom

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ELECTRICX

Cairo, Egypt
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31 - 2

GHANA TRADE SHOW

Accra, Ghana
www.growexh.com/ghanatradeshow

4 - 7

AFRICAN MINING INDABA

Cape Town, South Africa
www.miningindaba.com

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AFRICA ENERGY INDABA

Johannesburg, South Africa
www.africaenergyindaba.com

Highlights from IAA Commercial Vehicles 2018

“Driving tomorrow” was the slogan at the 67th IAA Commercial Vehicles which took place from 20 to 27 September in Hanover, Germany. Transporter Industry International GmbH (TII Group) presented its future-proof transport solutions for the logistics yard and the road transportation requirements at the industry’s showcase event.

The Wiesel or Truckwiesel has been designed for the transport of swap bodies and semi-trailers on logistics yards or terminals. Customers of the extremely manoeuvrable vehicle are logistics companies, mail order companies, postal and parcel service providers. “Our swap body transporters make the intralogistics of our customers more economical and efficient,” says Jürgen Dirr, area sales manager and responsible for

Image Credit: Ford



Ford Trucks won the 2019 International Truck of the Year award.



Image Credit: TII Group

From 2019, the swap body transporter Wiesel will be equipped with a new ergonomically optimised cab.

the Wiesel and Truckwiesel business operations at the TII subsidiary Kamag. “In order to stay ahead of the market, we are constantly optimising our products and solutions.” Therefore, for example, the successful swap body transporter is also available as an emission-free version with an electric drive.

Also at the show, Ford Trucks launched its F-Max cab-over truck as it enters the heavy-duty segment, and won International Truck of the Year award – the biggest accolade in trucking. The F-Max features Ford’s 12.7-litre E6D Ecotorq engine with 500PS and 400 kW braking power, 2.5 m full-width cabin and 4x2 axle. It will be available in the Middle East and northern Africa as well as central and Eastern Europe. “We developed our new tractor with Ford’s principles of comfort, power, efficiency and technology at its heart,” said Ford Otosan CEO Haydar Yenigün.

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A selection of product innovations and recent service developments for African business
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ITFC SIGNS TWO FINANCING AGREEMENTS TO SUPPORT EGYPT'S MAIN SECTORS



Image Credit: ITFC

Islamic Trade Finance Corporation (ITFC) has signed two new agreements with the Egyptian General Petroleum Corporation (EGPC) and the General Authority for Supply Commodities (GASC) initiating the utilisation of the fifth framework agreement.

The first master Murabaha agreement was signed by Hani Salem Sonbol, CEO of ITFC, and Ahmed Yousef, deputy chairman of the Commodity Supply Authority, to support the provision of goods supplies worth US\$1bn, benefiting 67 million citizens.

The second agreement was signed by Abed Ezz El Regal, CEO of EGPC, with total financing of US\$2bn, in the presence of Tarek El Molla, minister of petroleum and mineral resources at the EGPC head office.

The framework agreement was initially signed on 30 January 2018, with the objective to finance the importation of commodities such as petroleum, petroleum products, gas, wheat, foodstuff and other goods for the benefit of Egypt in the amount of US\$3bn.

Commenting on the announcement, Salem Sonbol said, "Here at ITFC, we recognise the immense strategic importance this agreement holds for our relationship with the government and people of Egypt. The benefits for economic development, social welfare development and intra-trade development cannot be understated. We look forward to years of continued partnership."

ARABSAT AND NEWTEC TO LAUNCH SATELLITE SERVICES IN MIDDLE EAST AND AFRICA



Image Credit: Orlando/Phalay

The deal aims to see the launch of new High Throughput Satellite (HTS) services in the Middle East and Africa.

Belgium-based Newtec, a specialist in designing, developing and manufacturing equipment and technologies for satellite communications, has signed a contract with Arab Satellite Communications (Arabsat), a move that aims to see the launch of new High Throughput Satellite (HTS) services in the Middle East and Africa.

Expanding their long-term partnership, the deal also focuses on introducing enterprise and VNO services, IP Trunking and mobile backhaul for 3G and 4G services in the Middle East and Africa regions.

Under the terms of the partnership, Arabsat will deploy a Newtec Dialog platform with a variety of Newtec's DVB-S2X Wideband modems. The specific modem used for each customer is set to depend on the market being served, with Newtec's portfolio providing vertical-specific solutions to deliver the best connectivity experience for any satellite application.

Once launched, the new services will use Arabsat satellite capacity, with the initial hub expected to be installed in Europe within the next month.

According to Thomas Van den Driessche, CEO at Newtec, the Newtec Dialog platform aims to maximise revenues to achieve the highest profitability with minimised risk, especially when being used to maximise the benefits of HTS networks.

SUGAR TARIFFS TO PROVIDE RELIEF AGAINST IMPORTS IN SOUTH AFRICA



Image Credit: guerrera/Flickr

South African government aims to look at the long term sustainability of the industry.

The International Trade Administration Commission (ITAC) of South Africa recommendation to adjust the sugar and increase import duty of US\$680 per tonne will provide the immediate relief required by the industry and protection against the surge of imports, said Ncumisa Mcata-Mhlauli, chief director for agro-processing at the Department of Trade and Industry, (the DTI).

Mcata-Mhlauli together with ITAC representatives were briefing the portfolio committee on trade and industry on the sugar industry tariffs in parliament.

According to Mcata-Mhlauli, tariffs form part of a set of measures considered by the government in collaboration with industry to improve the sustainability of the industry and future prospects. She said holistic solutions are required to improve the sustainability of the sugar industry overall.

"In the long-term, the industry will have to diversify and expand into new industries. At the moment, the industry is currently protected by dollar-based reference price which according to the South African Sugar Association is not responsive enough to protect the local industry," said Mcata-Mhlauli.

The South African Sugar Association will engage with International Trade and Administration Commission and other relevant stakeholders to look at the long-term sustainability of the industry.

CONGO'S RAWBANK AGREES TO ESTABLISH CHINA-AFRICA BANK ASSOCIATION



Image Credit: RAWBANK

Creation of the China-Africa Interbank Association.

RAWBANK, the first banking institution in the Democratic Republic of Congo (DRC), and China Development Bank (CDB) signed an agreement for the establishment of the China-Africa Inter Bank Association in Beijing (CAIBA).

Based on the presentation by Xi Jinping, President of China, aimed at enhancing China-Africa relations and promoting "10 principal cooperation plans" between China and the African continent, eight major actions of China-Africa cooperation were planned in order to advance the partnership.

Taking into account the deficit in meeting the funding needs of African countries with regard to industrialisation, infrastructure connectivity and poverty alleviation, a closer collaboration between Chinese financial institutions and African countries was decided.

Within this context, CDB, represented by its president, Hu Huaibang, and peer financial institutions in Africa jointly established the China-Africa Inter Bank Association (CAIBA), which is a concrete move in achieving win-win cooperation and better quality and higher common development.

Congo's RAWBANK, to be selected owing to its position in the banking sector for more than 16 years, is one of the 16 founding members of CAIBA alongside international and Pan-African banks such as Standard Bank, Absa, and Attijariwafa Bank. This agreement aims to strengthen the economic ties and investments between China and African countries.

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Developing Ghana's ICT infrastructure

GCNet has developed a number of e-solutions and data centres across Ghana, which have improved trade development and business competitiveness.

GCNet is a public private partnership, mandated to deliver an ICT infrastructure that provides electronic platforms for trade development. It has been at the forefront of rolling out innovative e-solutions across Ghana.

One innovation is the Letter of Commitment (LOC) which enables the Central Bank and Commercial Banks to track foreign exchange payments for imports and foreign exchange earnings from exports, saving Ghana more than US\$7bn in exports value following its introduction from July 2016 to June 2017.

Another is the Ghana Single Window App, an information tool to facilitate access to trade-related data in the trading community. This app enables one to track the status of shipments, arrivals and departure of flights and vessels, airway bills and bill of lading information. The application is available on Google Play store and Apple store.

GCNet has also deployed the e-Registrar portal, which allows online business registration with the issuance of an electronic certificate, e-shop and e-payment platforms. The e-certificate and e-payment functions on the e-Registrar portal are supported by a number of services online. The deployment of the e-registrar has reduced significantly the time it takes to register businesses and companies. Another innovation is the paperless exemption module on the eMDA portal. This enables Ministries Departments Agencies (MDAs) and their clients to process applications for duty and tax exemptions electronically in the end-to-end port clearance chain.

Product development

In keeping with the fast pace of changes in technology and the



GCNet continues to invest in capacity training to enhance the user experience.

culture of continuous business improvement, GCNet has invested in the IBM Analytics tool and an upgrade of GCMS II to III. The GCMS III is very responsive in terms of its ability to run on any device be it mobile or desktop, improved look and feel, data entry, improved security, screen layout and menu, which has enriched the user experience. GCNet continues to invest in capacity training, infrastructure and software to greatly enhance the user experience. All these investments have added value to policy decisions taken by the Ghana Revenue Authority.

As an innovator and leader in the provision of e-Solutions to governments, GCNet has installed and operates state-of-the-art Tier III data centres across strategic locations in the country as part of its deep commitment to ensure data integrity, business continuity and security in the space in which it operates.

These five data centres cater for the 97 customs sites and 68 tax offices

of the Ghana Revenue Authority across the length and breadth of the country. These investments in building IT infrastructure and capacity are consistent with our mission to provide ICT based solutions that foster trade development and facilitation, promote business competitiveness and ensure effective mobilisation of revenue for government. To date, GCNet has invested more than US\$80mn in the business.

Impact

There has been a significant increase in the domestic tax revenue collection processed through Total Revenue Integrated Processing Systems – trips™ – of GH 15.7bn in 2017, representing a 32 per cent increase over the same period in 2016, with the collection of GH 12bn.

Domestic revenue generated in 2018 through the Ghana Revenue Authority's (GRA) trips™ tax administration system has exceeded

GH 10bn as at the end of July. This remarkable achievement comes at a time when all 68 tax offices of the Domestic Tax Revenue Division (DRTD) of the GRA have been migrated onto the system and are using it to process taxes due to the completion of the strategic geographical roll out.

It is anticipated that by September 2018, total collections through trips™ will pass the GH 50 bn mark from the time it was launched.

The Registrar – Generals' Department (RGD) has witnessed significant improvements in turnaround time for business registrations, revenue and online transactions through the deployment of the e-Registrar. In 2016, revenue generated hit GH 55mn, increasing to GH 65mn in 2017.

Awards

GCNet won a number of awards in 2017. These awards include Trade Facilitation Company of the Year, Best e-Solutions Provider for the Public Sector, Best ICT Company in Ghana, Best Digital Innovative Finance Product (Letter of Commitment – LOC) and Public Sector ICT Provider of the Year. These awards shows the confidence reposed in GCNet by our stakeholders and the general public.

GCNet has given back to the people and communities of Ghana through its CSR initiatives. This includes capacity building and infrastructure support for its diverse stakeholders in the trade facilitation and revenue mobilisation space.

In health, GCNet supported the Mother and Child Unit at the Komfo Anokye Teaching Hospital, which has improved mortality rates of newborns in line with the UN Sustainable Development Goals. ■

“GCNet continues to invest in training, infrastructure and software to enhance the user experience”

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Could capturing icebergs help to avoid Day Zero?

Capturing melting icebergs from Antarctica to overcome drought in southern Africa is taking a step closer to reality. Samantha Payne talks to Nick Sloane to find out more.

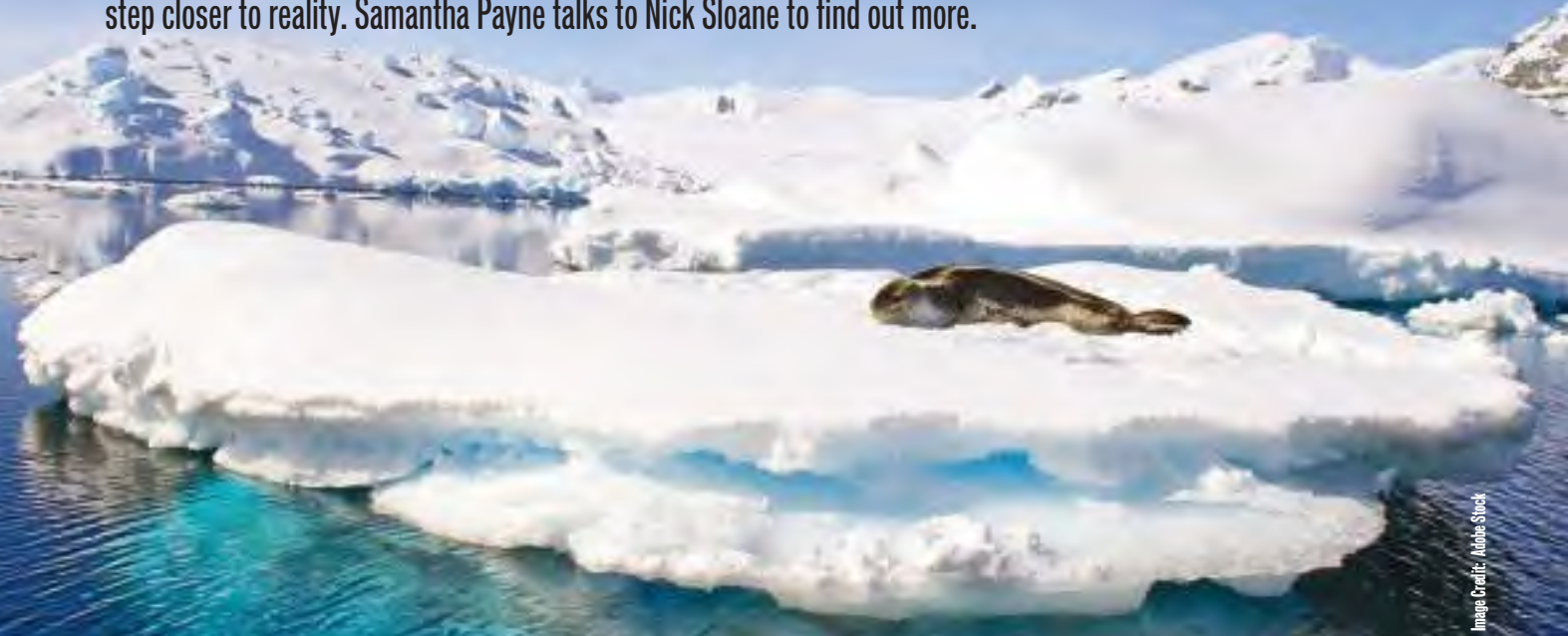


Image Credit: Adobe Stock

Captain Nick Sloane famously came into the public eye after masterminding the world's biggest ship salvage: the Costa Concordia. Thirty three lives were lost after it overturned off Italy's Giglio island in 2012. Sloane was later hailed the "legend of Giglio" for successfully refloating the ship. Now he is back in the headlines for another mammoth project. This time, he is pioneering alongside a team of scientists and academics, the idea of capturing melting icebergs from Antarctica and guiding them to South Africa.

These icebergs have already broken away from ice shelves and are drifting in the South Atlantic ocean. Sloane's idea is to capture them at Gough Island, off the coast of South Africa, pull them towards Cape Town and transfer the melting ice water into the local water supply.

As incredulous as it sounds, it has caught the South African government's attention and a special seminar on 10 September, was held by the South African Water Research Commission (WRC) where national and local representatives

attended to explore the matter.

If the operation is successful, it has the potential to meet at least 25 per cent of the Cape Town's water needs – the same amount of water as the Steenbras Lower Dam – which would be welcome news after it suffered the worst drought in its history earlier this year.

"If there is one place on earth where all the factors are in your favour, then it is to take an iceberg from Gough Island and bring it to the Cape," said Sloane.

He says once the 80-100 million tonne iceberg is captured with a geotextile insulation 'skirt', it could be guided by a large tanker with the support of two tugs, into the Benguela Current, which passes the Western Cape and Namibia.

"A year ago, people thought we

were crazy, but we have been liaising with glaciologists in Norway, such as Dr Olav Orheim and French engineering expert, George Moughin, who have been studying icebergs and glaciology for the last 40 years, specifically the southern ocean currents and the passage of icebergs, as well as the structure and geology of an iceberg and how to harvest and preserve it."

More than 2,000 billion tonnes of icebergs fracture off Antarctica every year and around 140,000 icebergs drift around the southern oceans and melt. It is expected that one iceberg could deliver on average 130 million litres a day for a year.

He stressed that the challenge over the past 38 years has been the lack of knowledge on the southern ocean currents and where the

icebergs are, but now with the ability to track them via satellites, these challenges are slowly being phased out.

"The currents will do 90 to 95 per cent of the work to move the iceberg towards Cape Town," he said. "Then we will use a milling machine to get a natural melt rate of about 60 million litres a day on top of the tabular table iceberg. The milling machine will create a slurry and add another 50 to 100 million litres to that. This will then be pumped into the waiting tankers."

One of the possible locations where the iceberg could be moored and then mined before entering the infrastructure, is at Melkbosstrand, 35 km north of Cape Town.

Sloane continued, "We are looking at a Single Buoy Mooring which is used around the world with tankers for petroleum products. We are still looking for a suitable location where we can tap into the infrastructure, possibly off Melkbosstrand, where we would put a buoy offshore, and then tap into the undersea pipeline to access the shoreside grid."

His proposal was discussed by the

“ We will use a milling machine to get a natural melt rate of about 60 million litres a day on top of the iceberg ”

CAPTAIN NICK SLOANE, CEO OF RESOLVE MARINE GROUP

national and local governments at the seminar, although there was more positivity than a year ago, there was still some resistance to meeting the operational costs of the ice water, estimated to be around between 5-5.5 South African cents per litre, once the iceberg arrives.

Sputnik Ratau, a spokesman from the South African government department of water and sanitation, said, “We will not be considering the idea until we have received a formal proposal from the WRC.”

Sloane says he already has investors on board for the US\$130mn to US\$150mn project, and adds that if the city or the government agrees to take the melting water it would trigger further investment. One of the investors is Water Vision, which says is happy to stump up 80 per cent of the required capital to haul the iceberg to Cape Town.

Responding to the outcome of the seminar, Bert Mulder, COO of Water Vision said, “The discussion always turns towards the presumed risk for the city or any other government agency, but Water Vision and Nick Sloane’s position has always been, that the only guarantee we need is that the city or the province will take the water at cost of delivery when the project is successful. This means that Water Vision will carry the risk of bringing the iceberg to Cape Town and when we succeed the city will take the water that will be produced during one year. Where is the risk?

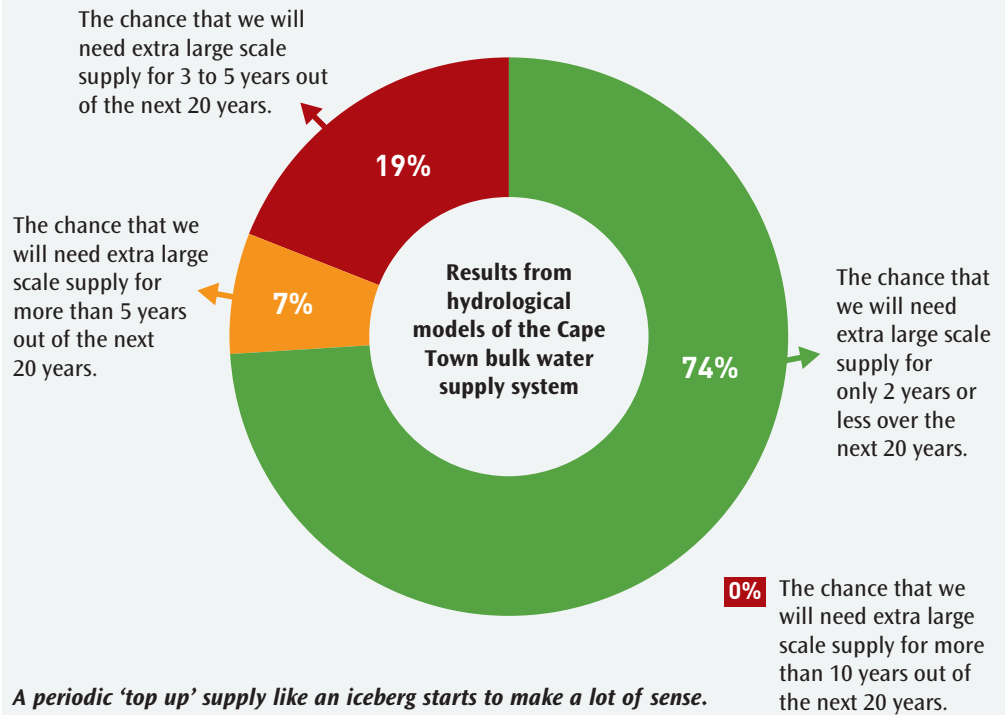
“Nick Sloane is a relentless educator. I turned from being a

skeptic into a believer and then into a firm supporter of the project.”

Sloane added, “We revitalised the idea three years ago, mainly to see how we can avoid Day Zero. One iceberg will give between 20 to 25 per cent of the city’s daily consumption and that would be enough to avoid Day Zero. It is not to replace what the city is already doing but if the resource is there, drifting in and out of the southern ocean and melting, we are capturing what is already in the sea.”

Another fan of the project is Paul Stidolph, who has released his book, *Forests in the Sahara* supporting the idea of harvesting ice from Antarctica, but he believes it is a much bigger issue, said, “Nick

Do we really need additional large scale (100ML/day) supply?



Tankers towing the iceberg.

Image Credit: Resolve Marine Group

Sloane is brilliant, but this is something much bigger than any single company can handle. What we are talking about is a human crisis. Climate change is causing drought, but it is releasing icebergs from Antarctica, which we should be

harvesting and storing. This should be a global venture involving Russia, USA and China, which ought to be devoting billions towards protecting this water, and should be as big an issue as carbon dioxide at climate change conferences.” ■

Economics

Costs

- * Bulk water to city of Cape Town – supply 165ML/day over one year = 65 million kilolitres per year
- * Speciality iceberg water wholesale at R20/litre
- * First order non-risk adjusted cost estimate 5 cents (South African) per litre.

Mining method

- * Heavy lift helicopters used to transport machinery and mining plant from the support barge and vessels onto the surface of the iceberg.
- * The plant shall be reassembled on the surface of the iceberg, where a “saucer” can begin.
- * An open-cast mining scheme is proposed with the result of the harvested and melted ice being a pool of water at the centre of the iceberg.
- * This water/ slurry mixture can then be pumped out into waiting tankers.

The shipwreck of Costa Concordia laying in the bay of the small island of Giglio, off the coast of Tuscany.



Image Credit: John Ferguson/Flickr



Image Credit: Adobe Stock

Having the whole world in its hands

Vinod Madhavan, head of trade at Standard Bank Group considers how the rest of the world is responding to trade and investment opportunities in Africa.

While China has been central to Africa realising its trade potential, as Africa continues to grow and diversify, the rest of Asia and indeed the world's relevance to Africa's trade ability and ambitions should not be overlooked.

It is reported that the 'Africa-China trade corridor' accounted for approximately US\$175bn in trade in 2017. The rest of Asia, excluding China, accounted for US\$115bn in 2017, almost two-thirds of the value of Africa-China trade. In short, the opportunity presented by Asia (ex-China) is also very significant. In contrast, the USA's trade with Africa amounted to a comparatively modest US\$56bn over the same period indicating the potential for trade growth with the West once the world's largest economy is able to focus on Africa's opportunity.

While Africa's global trade and investment opportunities are multiple and diverse, how is the world responding?

Africa-China

Without doubt China will remain Africa's leading trade partner and growth driver, even as it adapts, refines, balances and deepens its approach to the continent.

According to a McKinsey report, Chinese firms produce goods and services on the ground in Africa to the value of approximately US\$180bn for export and for domestic consumption. Various scenarios predict that this could grow to anywhere between US\$250 and US\$400bn by 2025. It is also predicted that the composition of Chinese businesses in Africa could comprise 33 per cent manufacturing, 25 per cent services and



Image Credit: Standard Bank

Vinod Madhavan

20 per cent in trade, in addition to growth sectors such as agriculture, housing and ICT.

While there has been talk of resultant impact on debt, this diversified bricks and mortar direct investment, is importantly, helping build the supplier networks, on-shore infrastructure and capability of Africans to produce and trade with each other, as well as with China and the world.

Thereby, China has also been fundamental in changing the world's view and rating of Africa as a successful investment destination and global trade and growth partner.

Africa-Asia (excluding China)

China's success in Africa has not been lost on the rest of Asia.

ASEAN (Association of South East Asian Nations) has developed a sustained and expanding investment and trade relationship with Africa. Singapore's vision and commitment was reiterated during the biennial Africa Singapore Business Forum August 2018 summit, with fruitful discussions straddling corporates, government and FinTechs.

India too, working with Japan, is developing a broader Africa-Asia growth corridor investment initiative. India, today, is the fifth largest investor in Africa having more bilateral agreements with Africa than the USA. India's network in Africa is largely based on the creation of new markets, trade opportunities and the sourcing of inputs and investment opportunities for Indian businesses.

Africa-USA

Despite the trade rivalry between the USA and China, at present the USA does not seem to be focused on deepening its engagement with Africa. Madhavan believes that this is, however, a temporary phenomenon as the USA still has the largest number of multinational corporates present in Africa compared with any other country. These corporates are all looking to expand in Africa.

Africa-Africa

If Africa is to leverage shifts in the balance of global trade, it is critical that the continent increases internal trade. According to recent reports, only 16.6 per cent of African trade is with other African markets. This figure is 45.5 per cent in North America, 53.6 per cent in Asia, and 54.2 per cent in Europe.

At the collective level there is much that Africa can do to drive integration. Africa's attempts to improve the effectiveness and practical connectivity of its existing regional trade blocks should be supported at every level. The potential rewards of greater integration outweigh the risks. For example, eliminating import taxes between countries would on its own increase Africa's regional trade by more than 30 per cent. This would add one whole percentage point to the continent's GDP and bring intra-African trade in line with the global average.

Africa's future is trade

As an African bank committed to driving Africa's growth, Standard Bank recognises that Africa is currently faced with an historic opportunity to leverage trade to drive its own social, economic growth and environmental agenda.

To leverage this opportunity Africa needs to manage volatility by sustaining growth and investment in increasingly liberalised and diversified economies. This will allow us to increase predictability, reduce uncertainty in tariffs and the costs of other trade barriers, drive integration and develop rational business connectivity infrastructure.

China and many other emerging nations and regions have done this successfully. Their experience is ours for the taking, and they are all here and now in Africa willing and able to partner with us on this journey. ■

“We recognise Africa faces an historic opportunity to leverage trade to drive its own social and economic growth”

VINOD MADHAVAN, HEAD OF TRADE
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Angola: moving beyond oil

Zandre Campos, CEO of ABO Capital, sees bright things ahead for Angola with the passing of a new private investment law. Here, he tells *African Review* why the country is moving in the right direction.

The future is bright for Angola's economy. Just recently, government leaders unanimously passed revisions to the country's Private Investment Law, which supports Angola's diversification efforts in job opportunities and trade. This is helpful when there are price fluctuations in oil, metal, and other commodities — top sources of revenue.

In the past, the Private Investment Law had required foreign investors to partner with Angolan citizens, public capital companies, or Angolan companies, and hold at least a 35 per cent stake in the share capital of the companies. The revision removes this requirement, and I'm hopeful that parliament's new regulation will be more attractive for foreign investors, grow businesses, benefit trade and create more jobs.

Local content

We are on the right track toward creating opportunities for Angolan residents. Under the revisions to Angola's Private Investment Law, private investors must employ Angolan workers and provide them with favourable training, salaries, and social conditions, without discrimination. This is a great step in providing concrete opportunities for Angola residents and building upon other investment opportunities with high manufacturing intensity. The priority trade sectors are food and agriculture; forest resources; textile, clothing and footwear; hotel business, tourism and leisure; construction; public works; telecommunications and information technology infrastructure; energy and water; and education, training and investigation respectively. All of these elements can greatly contribute to the growth of businesses, research and trade, which is crucial for Angola, as it is one of the few African countries that has just two main exports.

Agriculture is another industry that has great potential. It provides jobs for more than 60 per cent of Africa's workforce and has the potential to grow. Technological advancements have contributed to this growth, but there is still more opportunity here. One venture in which I've invested through ABO Capital includes ETG, one of the fastest growing integrated agricultural supply chain groups that works to ensure the growth of procurement, processing and manufacturing finished goods, and product distribution.



Oil & gas

Oil still accounts for approximately 90 per cent of Angola's budget and it will continue to be one of the most important sources of income for the country. President João Lourenço is proactively working to boost this sector, and part of his plan includes loans from the International Monetary Fund (IMF), which is a positive move that should help continue to strengthen the country's economy as a whole. I also believe diversification is an important step towards economic growth, such as allocating resources toward sectors with high manufacturing intensity.

President Lourenço's efforts in solidifying a deal with the IMF would mean that the price of fuel and basic materials will eventually increase. It's a measure that indicates the seriousness of President Lourenço, who is looking toward the future of our country. It is also a measure that would need to be done, if not now, then in a couple of years from now. Angola's discoveries of offshore pre-salt basins

“Oil accounts for 90 per cent of Angola's budget and will continue to be one of the most important sources of income”

ZANDRE CAMPOS

presents evidence of a new reality of natural gas, which can be a game changer for infrastructure development and in attracting new investors.

International trade

Trade has fostered healthy economic development in Angola, and the government has been committed to ensuring the growth in food and agriculture. Historically, coffee, maize, and other crops, such as sugar cane and cotton, had been top exports, and the country was at one point self-sufficient in all major food crops except wheat. Coffee was a leading export, and even considered the best in the world.

Today, Angola relies on international trade for more than half of its food and other commodities, but agriculture has remained a top priority for the Angolan government. The country has more than 2,000 acres of land that can be used for farming and agriculture production. In the past few years, the government has focused on clearing land mines, commercial agriculture and the construction of irrigation projects.

We will see continued positive relationships with trade partners as Angola continues to build its economy, but we'll soon begin to see more developments and the positive impact of legislation, such as the revisions of Angola's Private Investment Law that will contribute to the overall growth of our own agricultural sector.

Infrastructure development

Infrastructure is another critical component to the continent's development. Poor infrastructure, such as roads and electricity limits the flow of trade, capital, education and information.

Some of the most notable re-building projects have included the Laúca Dam, which contributed to more than 8,000 jobs and cost-effective and reliable energy; the Luanda Airport, which helps accommodate international airlines and has repositioned Angola as a hub; and the launch of AngoSat 1, thought to provide better reception for mobile phone users and support telemedicine for those not near hospitals or medical professionals.

All of these developments are critical to breaking through the challenges Angola faces with its infrastructure. ■

By Martin Clark

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In part two of our series on sustainable cities, economist Moin Siddiqi looks at the factors African countries need to adopt to improve their urban redevelopment for the benefit of businesses and residents.



The productivity of businesses depends on the proximity of infrastructure, workers and customers.

Models of city success from other regions offer useful insights into development paths and citywide gains based on three main criteria: firstly, functional and formal land markets, transparent land titling and shrewd urban planning. Secondly, making earlier and coordinated infrastructure investments that enable greater interdependence among sites and physical structures. Thirdly, improving transport and other public amenities — connecting firms to workers and consumers — thereby enhancing the liveability and productivity of the city.

Urban planning, land use and building regulations (policies determining how and where land is used) and zoning are important tools for authorities to guide development and enhance urban connectivity. Zoning is the process of dividing land in a municipality into zones (e.g. residential and industrial/commercial) in which certain land uses are allowed or prohibited. The type of zone determines whether planning permission for a given development is granted. Zoning may specify a variety of outright and

conditional uses of land. Integrated urban planning increases both population and economic densities.

Clear land and private property rights underpinned by enforcement powers are pre-conditions for functional land markets. The World Bank noted, “Strong institutions are needed to

“ Even where formal titles exist, registries and basic mapping are poorly maintained or incomplete to enforce legal claims ”

MOIN SIDDIQI

clearly define property rights to ensure standardised and objective methods of land valuation; and to support and oversee land management, land sales and tax collection.” Yet many African countries retain ‘multiple’ land rights regimes: formal, customary, informal, collective and even religious. Unclear land titling impedes urban redevelopment, and imposes high costs, as well as preventing capital raising from banks and real estate investors.

Even where formal titles exist, land administrative systems (such as registries and cadastre records) and basic mapping are often poorly maintained or incomplete to enforce legal claims and landholders’ fiscal obligations thus preventing lenders to use land as collateral. In sub-Saharan Africa (SSA), only one-tenth of rural land is registered. Cadastre is a technical term for a set of records showing the extent, value and ownership (or other basis for use or occupancy) of land.

Some SSA countries have taken steps to improve land registries, e.g., most of communal

lands in Ethiopia, Ghana, Mozambique and Tanzania were surveyed and registered; computerised land records and registration systems helped cut the number of days to transfer property in Ghana from 169 to 34 and Uganda from 227 to 48, according to Securing Africa's Land for Shared Prosperity report. The 2015 Planning Bill in Zambia has extended planning controls across state and customary land while designating all local authorities as planning bodies, says the 2016 New Approaches to Physical Planning in Zambia report. Kenya provides value added tax exemptions for developments with more than 20 low-cost units.

Planned investments

The costs of developing basic infrastructure and dense clusters of firms and industrial premises depend on 'sequencing'. It means that the erection and installation sequence of project equipment and materials as well as the completion sequence of units, systems or subsystems are based on the plant commissioning sequence. Mega-projects also carry high capital expenditure that has been incurred and cannot be recovered.

Paul Collier in the 2016 "Land Use Planning and Spatial Development for Smart Growth in African Cities" report, explained making infrastructure investments first; followed by investments in mass housing and then in industrial premises, reduce the cost of all three. This is because vital services, such as sewerage, drainage, clean water, waste disposal, street lighting and transport networks are cheaper to provide at scale (i.e. agglomeration economies) than if they are installed to houses and factories separately.

Furthermore, it is more economical to build public amenities (schools, hospitals/ clinics and roads) in densely populated areas than for a dispersed rural population. Thus, being less costly, the optimal level of provision should be higher in well-planned cities. And the social returns on public infrastructure stocks depend on the proximity of housing and workplaces. For firms, the productivity of business premises hinges on the proximity of infrastructure, workers and customers. However, empirical evidence from the World Bank's 2017 African Cities Opening Doors to the World report, suggests that benefits of changes in urban structure, such as investment in a transport network, take time to emerge with firms and households responding to these changes gradually.

Urban connectivity

Efficient transport systems improve intra-city mobility and reduce commuting costs, which, in turn, foster land use changes and economic

Bus Rapid Transit: Major indicators per region

Region	Passenger counts daily	Number of cities	Length (km)
Africa	488,178	4	117
Asia	9,301,472	43	1,593
Europe	1,613,580	44	875
Latin America	20,573,856	55	1,790
Northern America	912,598	18	526
Oceania	436,200	4	96
Worldwide Total	33,325,884	168	4,998

Source: *brrdata.org*; July 2018

growth as the city moves to a new equilibrium of urban land use patterns. The modes of transport systems vary with population and job densities within a city.

Upgrading logistics and designing routes and bus stops improve connectivity in places with low densities, while higher density requires other options: bus rapid transit (BRT) corridors, light-rail trains (including urban trams) and subways.

Presently, four SSA cities: Cape Town, Dar es Salaam, Johannesburg and Lagos operate BRT systems that run on 104 kilometres of exclusive bus lanes. Evidence shows that commuting time in Lagos fell by an average of 25 minutes along a 22-km corridor and wait time cut from 45-to-10 minutes since the introduction of BRT in 2008, according to the World Bank. Tanzania's BRT is planned as a large-scale system of 137-km of high-frequency corridors being constructed in six sequential stages.

Other benefits of BRT are reductions in pollution and improved road safety. In Lagos, the BRT project has reduced CO₂ emissions and greenhouse gas emissions by 13 and 20 per cent, respectively. Also, policy to improve local air quality can be supported by safer non-motorised travel, such as cycle lanes and better footpaths.

There are tangible citywide benefits of paved road investment according to United Nations-Habitat findings of 30 global cities. It found that paved roads are positively associated with population density growth; vibrant commercial activity; and industrial land use growth. The study ranked African cities low on road investment including Kigali, Addis Ababa and Nairobi which were rated 19th, 24th and 27th, respectively.

Road density in cities is reportedly low; the road-to population ratio for all of SSA is estimated at 26km per 10,000 people. The bulk of road surfaces have depleted over decades, reflecting very little rehabilitation work, with only a quarter of all current roads, totalling more than 2.8mn km in SSA is paved, according to the UN Economic Commission for Africa.

Leveraging land values

Huge capital outlays are required to build

integrated infrastructure networks and production facilities, which far exceed the budget of any African cities. They rely on grants, government transfers, borrowing from official and private sources or limited internal revenues. Given limited money and rising urbanisation, land-based financing is a viable option for infrastructure development across the region. The World Bank echoed this sentiment by saying, "Although revenues from the intergovernmental transfer system have been the mainstay of urban public services, there is a need to explore how cities can leverage the value of their assets mainly land to finance infrastructure and provide public goods and services."

Land-based financing was used in the US, Japan and France for large-scale projects during periods of rapid urban expansion. But leveraging land values is not widespread in Africa, according to a study of 28 large property development projects in Ethiopia, Kenya and Zimbabwe. Such a system can tap badly needed funding, providing certain conditions are met, chiefly a sound regulatory framework with legal powers to enforce land rights; the availability of developable land; a functional real estate market; sustained demand for property; and technical capacity to implement and monitor land-based financial instruments. Very few African cities so far meet such criteria.

In sum, effective public policy and planning are needed to get urban structures 'right', thus laying foundations for more economically dense cities. Above all, city and national leaders need to tackle structural problems of capital misallocation, ineffectual property rights and fragment development across much of Africa, which strangle investment and limit formal development options. The World Bank said, "Institutional structures must lead, not lag, urban infrastructure. If they do, the region's cities will become not only better connected and more efficient but also kinder to their inhabitants, whose skills will be critical to economic growth and development." Better urban services connect African cities to global value chains for goods and services. ■

Ghana exports on the rise

Ghana and the goodwill factor: how investors are responding to the West African nation's hydrocarbon-fuelled economic resurgence.

Ghana has been given a new lease of life on the back of a resurgent oil and gas industry, which is having a knock-on effect throughout the economy.

The start of large-scale oil extraction in 2010 from the offshore Jubilee field has boosted overall exports on top of traditional cocoa and gold exports and brought with it huge new investment, not only in the hydrocarbon sector, but other areas too.

Financial investors have taken reassurance from the country's new-found oil wealth, which has likewise boosted the government's income.

The exploitation of offshore gas has also stimulated a flurry of new power projects, again drawing in significant foreign investment.

It could mark a turning point in meeting Ghana's domestic energy needs long-term.

Indeed, with work underway to strengthen the transmission infrastructure heavily bankrolled by multilateral donors the country is poised to become a major net electricity exporter to the region.

Power exports to Burkina Faso, for instance, are expected to double to 100 MW upon completion of the 225 kV Bolgatanga to Ouagadougou interconnector project, now under construction.

This project is supported by the World Bank, Agence Française de Développement (AFD) and the European Investment Bank (EIB), as well as Ghana's GRIDCo and Burkina Faso's Société Nationale d'électricité du Burkina (SONABEL).

Banks and donors are encouraged by Ghana's oil revenues and its longstanding reputation for political stability, a rare thing at times in West Africa.

The result: projections for gross domestic product (GDP) growth in 2018 stand at a healthy 6.3 per cent,



Workers maintain the thermal power station at Takoradi, Ghana.

according to the International Monetary Fund (IMF).

"Growth prospects remain positive, supported by strong oil production," the IMF noted following its last visit to the country in June this year.

Trade and investment

It's not hard to find evidence of improved investor confidence, as indicated by the successful issuance of the government's US\$2bn Eurobond in May, to be used to refinance ageing debt and for extra revenues for the 2018 budget.

President Nana Akufo-Addo has even talked about floating a US\$50bn 100-year bond to finance long-term infrastructure and industrial development.

While there are still major challenges, Ghana is in its final year of a US\$918mn IMF credit deal to narrow the fiscal deficit, inflation and public debt which hit 69 per cent of GDP last December, there is certainly plenty of forward momentum.

On the stock exchange, the debut this year of MTN Ghana, the country's largest mobile phones group, brings with it greater liquidity and participation, while introducing a very vibrant sector of the economy to the market.

MTN is Ghana's leading mobile operator with 17.8 million voice subscribers, ahead of AirtelTigo,

Vodafone and Nigeria's Globacom.

The same confidence is also reflected in the level of interest among foreign car makers.

Germany's Volkswagen recently signed a memorandum of understanding to expand its business in Ghana, where it plans to assemble vehicles.

Chinese heavy duty truck maker Sinotruk International has similar plans for the West African nation.

Its proposed plant would initially have the capacity to assemble around 1,500 trucks per year for sale across the wider region.

These projects would additionally help the country transition to more sophisticated manufactured export products, away from the commodities sector, another government priority.

Overall exports are up massively on a decade ago, driven of course by increased commodities sales.

Total exports now hover around the US\$4bn mark, compared to less than US\$1.5bn a decade ago, and a record low of US\$565mn in the first quarter of 2003.

China investment

While the trend is good, there are other concerns, including a high level of debt.

Ratings agency Moody's estimates Ghana's debt will rise above 70 per cent of GDP by December, compared

with 64 per cent as of May.

This is driven in large part by a government decision to finance the setting up of a new bank to acquire the assets of distressed lenders.

There is also the question of over exposure to Chinese financial aid.

China's Sinohydro Corporation, for instance, is looking to provide US\$2bn for government road projects in exchange for refined bauxite exports.

The government has described it as a barter deal and not a loan facility, and hopes to build a bauxite refinery by the end of next year.

However, opposition leaders want the IMF to scrutinise the transaction already agreed by the government to see whether it will only add to the country's debt burden.

Chinese investors have taken a keen interest in Ghana's resources sector.

Two Chinese firms have been picked to build infrastructure for a US\$350mn liquefied natural gas (LNG) import terminal at Tema.

It would make Ghana the first country in sub-Saharan Africa to buy LNG.

Despite abundant gas reserves of its own, Accra is keen to diversify the nation's energy supply in the interests of energy security and achieving a more competitive market.

While debt remains "very high" for a sovereign of Ghana's size and average income level, according to Moody's, there are plenty of reasons to take heart.

It projects that the country's real GDP growth will hit 7.1 per cent in 2019, making Ghana one of Africa's most dynamic economies.

Elisa Parisi-Capone, Moody's vice president, says new oil and gas field developments coming on stream will underpin this growth, while a more reliable energy supply will benefit the broader economy, including trade and diversification. ■

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Over the years, GCNet has been at the forefront of deploying e-Solutions in the trade facilitation environment and beyond. GCNet continues to provide multiple electronic platforms, which account for 97% of all Government revenue collected in Ghana, with system availability nationwide, for various aspects of revenue mobilisation and trade development which in turn facilitate trade, enhance business competitiveness and improve revenue collection. Successful initiatives include the GCNet automation of the Customs Clearance Procedures, Business Registration and Domestic Tax Revenue Division of the Ghana Revenue Authority (GRA).



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Very high resolution satellite data for Africa

Jonathan Sumner, business development director at Earth-i looks at the merits of using Earth Observation satellites in tourism, farming and urban development.

What does Namibia, South Africa, Mozambique and Kenya have in common? Well, one thing is that they can all now be seen in unprecedented detail from space. The latest generation of Earth Observation satellites is enabling all nations to develop fit-for-purpose strategies to manage land administration, unlock new economic potential and drive social and environmental development.

The pace of technological development in the satellite industry has rocketed in the last decade. Earth Observation satellites used to be large, sophisticated, exquisite scientific instruments, which cost enormous sums to develop and launch. If you needed to map or investigate the Earth's surface in detail they were your only option. However, in the space of just 10 years, all that has changed.

Satellites are getting smaller

Pioneering satellite developers and manufacturers in the US and UK have simplified and scaled down EO satellites. While the very small shoe-box sized 'nano-satellites' have limited capability, those in the small satellite category (around the size of a washing machine or refrigerator) have very sophisticated capabilities. While much cheaper to build and launch, they can still offer very high resolution imaging capabilities – acquiring EO data at resolutions of better than 1 metre, meaning every pixel shows 1 sq metre of land.

Given the lower build and launch costs, these type of satellites can now be built and launched in constellations of multiple satellites working together to achieve much greater frequency of imaging, revisiting any location on earth at least once a day and, soon, multiple times a day.



Earth-i is implementing large-scale geospatial projects based on satellite data across Africa.

Areas with regular cloud coverage have a better chance of being imaged if multiple identical satellites can revisit the area of interest frequently. This has traditionally defeated satellites in those parts of Africa where cloud cover can be a persistent challenge.

More images, data and analysis

It is hard to understate the revolution in earth observation that this stream of new high-resolution data is enabling. And at a price that makes insightful data affordable to scientists, governments and industries in Africa and other emerging markets.

As well as new constellations gathering very high resolution (VHR) data, there is also a steadily growing stream of data from large satellites launched by the EU and the US government which provide medium-low resolution data for global mapping and monitoring purposes.

This data has been deliberately made easily accessible on a global basis, and essentially free, to enable all nations of the world to apply earth observation data to their development and policy-making needs. The African

continent was only lately added to the full coverage mission of the European Space Agency's Sentinel2 mission and many new applications are emerging.

Earth-i, a UK company leading advocate of the value of satellite imagery, is implementing large-scale geospatial projects based on satellite data across Africa. These are varied and include:

- 1) Tourism/Eco-tourism in Namibia (Etosha)** – Road and tracks mapping, both for tourists and park rangers, requires detailed imagery to reveal small spatial detail.
- 2) Urban development in South Africa (Tshwane)** – to establish a detailed urban footprint the mapping of dwellings, houses, roads and other infrastructure requires VHR EO data, and in a fast-growing city regular affordable VHR satellite data will contribute to sustainable urban management practices.
- 3) Mining and exploration in Mozambique** – When setting up a mining project in remote areas, access and local conditions can be quite a challenge. An up-to-date and detailed baseline map allows for much improved planning in the early stages of a project – even at

the initial explorations stage. Subsequently this data can be used to document progress and satisfy the authorities that planning permissions and environmental protection requirements were followed.

4) Coffee plantations and agriculture in Kenya and Rwanda

– Even though agricultural applications for satellite data do not always require VHR satellite data, this is not true for projects like coffee crop monitoring down to the level of small fields and individual plants.

One of Earth-i's flagship projects is the Accord programme in Kenya and Rwanda, focused on driving improvements in coffee crop yields and quality, and in turn improving the incomes and security of smallholder coffee farmers in those countries. The programme is funded by the UK Space Agency and is proving how the value of satellite data integrated with new weather prediction technology can provide micro-climate predictions down to the individual coffee field and small holder farmer level. VHR satellite data can then also spot localised areas of deterioration in plant health using NDVI techniques to measure plant condition.

Other usage of this data includes the monitoring of access roads, washing stations and other localised infrastructure needs.

The new generation of satellites is therefore an exciting opportunity for many African nations. Several now have their own satellite programmes and space agencies, and for those that don't want to capitalise on the easier, more affordable access to data from space, commercial companies are offering unprecedented access to new constellations of EO satellites. ■

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Retreading reduces environmental impact

Kal Tire's Mining Tire Group has been running a world-class retread facility in Ghana for ten years. Darren Flint, vice president, for both West Africa and tyre lifetime services, tells *African Review* the secret behind its success.

Located in south western Ghana, 300km from Accra, on the same site as Gold Fields – one of the world's largest gold mining firms – sits another local treasure.

For ten years, Kal Tire's Mining Tire Group has been operating its retread factory. It is run entirely by the local workforce and due to an increased interest in retreading, plans are now in place to increase the number of team members as the business continues to expand in the country.

The factory itself is one of six world-class retread facilities run by Kal Tire's Mining Tire Group. The others are based in east and west Canada, the UK, Chile and Mexico.

In Ghana, they supply retreaded tyres for companies, such as Gold Fields for use on whatever machinery they are running.

Darren Flint, vice president, tyre lifetime services, says retreading is becoming popular again as there is a shortage of tyres in the market.

"We have renewed interest in our retreading services in Ghana due to a tyre shortage, but this has also enabled us to demonstrate the cost and environmental benefits of retreading to customers. This is having quite a large impact on our business as it has forced customers

to explore alternatives to buying new tyres. Retreading slowed down when cheaper tyres were coming into the market. But now we see that mining customers are looking for quality tyres which can be retreaded because there are financial and environmental benefits to be gained."

More and more mines want to reduce their carbon footprint and comply with ever evolving scrap tyre legislation.

For a 29.5R25 tyre, around 1,727 kg of CO₂ emissions and 54.05 litres of oil would be saved.

"The emissions produced in manufacturing a new tyre are significantly higher than in the retreading process," says Flint. "Customers are increasingly conscious of scrap piles and how to reduce the amount of tyres being sent to scrap piles. Retreading delays tyres from going to scrap piles, so that's a huge benefit for customers."

One of the company's innovative solutions includes Ultra Tread. Normally, a new tyre fulfils its first life on the front and would usually then be moved to the rear position. With Ultra Tread, the tyre removed from the front would be retreaded while the casing's integrity is still strong, and then returned to the front making the tyre as good as new and increasingly tyre life



Image Credit: Kal Tire

Staff working at the Kal Tire's Ghana retread plant.



Image Credit: Kal Tire

Prepping for retread.

Retreading reduces emissions and oil use

29.5R25 TYRE	NEW	RETREAD
Production emissions	4,192 kg CO ₂	2,464 kg CO ₂
Oil used	68 litres	13.95 litres

TOTAL SAVINGS: 1,727 kg CO₂ and 54.05 litres of oil

How retread tyres perform

RESULTS – 23.5R25, GHANA

	Tyre Life	Tyre Cost
KAL TIRE RETREAD	5,532 hrs	US\$0.56 cost per hour
NEW TOP-TIER	6,812 hrs	US\$0.99 cost per hour

significantly. Once this tyre then reaches normal removal hours it would then be reinstalled on the rear to run out its life. It is estimated it could extend the tyre life between 2,000 and 2,500 hours.

"It means the customer doesn't have to buy so many new tyres – it's a win-win situation," added Flint.

Kal Tire Mining Tire Group began retreading in the 1970s to help remote coal mines in Canada. ■

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Anton van den Berg, managing director, NLMK South Africa, speaks to *African Review* about the company's history and how it continues to flourish despite the challenging market conditions.



Image Credit: NLMK

How long have you been in operating in South Africa?

We've been operating in South Africa for six years. We started the company under the name of Duferco Distribution Services. As part of the Swiss concern, we were selling plates from NLMK Clabecq on our local market. Then NLMK Clabecq were interested in taking over our company, attracted by our service centre and distribution. So we are now a subsidiary of NLMK Group, a leading international manufacturer of high-quality steel, with companies across Russia, Europe and North America.

Which industries do you support? Which products sell well on the continent?

NLMK South Africa is a steel merchant and an integrated service centre. All of our steel plates are

imported from NLMK Clabecq in Belgium. We only stock special steels, such as Quard, the abrasion resistant steel, and Quend, the extra high strength steel of NLMK. The applications for Quard are

mostly used for mining machinery; such as buckets, screens and shakers that are supplied to customers such as Bell Equipment, Tenova and VR Steel. Quend, on the other hand, is ideal for lifting equipment or appliances that have to withstand a high load, thanks to its ability to reduce the final weight of the equipment.

“ We've got a stable supply chain in NLMK South Africa and a reliable customer service support team ”

ANTON VAN DEN BERG, MANAGING DIRECTOR, NLMK SOUTH AFRICA

What makes NLMK South Africa different to other steel distributors in the region?

We've got a stable supply chain in NLMK South Africa and a reliable

customer service support team. Right from the outset, we work with design teams to ensure the best possible product for customers. Our biggest strength is our service centre because it offers very good turnaround times on all of our products. We deliver within three to five days, beating the competition where the turnaround rate is often seven to 10 days. Because of our strong service delivery, it has helped our growth in the last year. Also, our company can boast a high percentage of loyal customers for our high-quality products.



Anton van den Berg.

What has been your highlights and challenges as a business?

One of our breakthroughs over the last couple of years is being qualified and approved as a supplier by VR Steel. Our challenges, however, are more often than not, related to the exchange rate in

South Africa, and the fact that the steel industry is fluctuating all the time. The country is going into recession so all of the industries in South Africa continue to struggle. Many companies have even closed down as the market plummets. Saying this however, NLMK South



Mining machinery is supplied to customers such as Bell Equipment.

Image Credit: NLMK

Africa has bucked the trend, growing year-on-year over the last five years despite the slump in the market.

What is the economic outlook looking like for 2019?

I think everyone is waiting to see what will happen with the elections

next year, which, of course, will be a big turning point for the industry. There has already been an uptick in business flow, but as a company aware of its environment, we are being cautious and have a monthly strategy in place instead of planning six months ahead. ■



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GE launches world's first 6B repowering gas turbine solution

GE's Power Services business has celebrated the 40th anniversary of its 6B gas turbine fleet by launching the world's first 6B repowering solution.

In Africa, GE has an installed base of 60 6B gas turbines at various locations with the most recent installation in Cabinda, Angola. The fleet is mainly used for power generation for grid supply as well as for large industrial uses like refineries.

"We're excited to mark our 40th anniversary of the 6B fleet and unveil our new repowering solution," said Scott Strazik, president & CEO of GE's Power Services business. "This fleet is known for its dependability – a reputation earned with global fleet reliability of 98.4 per cent, which is about 2 per cent higher than the industry average and translates to approximately 17 more days of availability per year. At the same time, the 6B fleet has aged, and there is growing demand to improve performance. Today's announcement and our recent expansion of our Advanced Gas Path technology to the 6B fleet highlight our continuing investment in our mature fleets to help power producers and industrial operators remain competitive in today's very dynamic marketplace."

This fleet is known for its dependability – a reputation earned with global fleet reliability of 98.4 per cent, which is about 2 per cent higher than the industry average.

"As a company, we believe that more efficient power plants means more power available on the grid to respond to the growing energy needs of the African continent. As a result, we are always focused on solving our customers' most complex problems with customised and innovative solutions that help optimise operational performance," said Elisee Sezan, general manager, GE's Power Services business for sub-Saharan Africa.

Part of GE's Fleet360 platform of total plant services solution, the new 6B Repowering Solution incorporates advanced F and H class technology to elevate the machine's performance to leading levels for its class. The repowering consists of a full "flange-to-flange" upgrade of all major components, including the combustion system, hot gas path and compressor, and it transforms the 6B unit into a GE 6F.01 gas turbine, which is also available as a new unit.



6B repowering upgrade.

Image Credit: GE

PRESIDENT OF TOGO VISITS BBOXX'S HEADQUARTERS

The President of Togo Faure Gnassingbé visited BBOXX's headquarters in London as the rollout of solar home systems gathers momentum.

BBOXX has been operating in Togo since December 2017, after it forged an innovative partnership with the Government, which aims to provide 300,000 solar systems across Togo by 2022.

It has already improved the lives of 20,000 people through installing its solar home systems in the country and created more than 100 jobs in rural areas.

During the visit to London in August, the BBOXX team explained to the president how it will focus on delivering services to customers beyond solar home systems in Togo, with Internet and gas products. These services will help address the needs of rural communities who cannot access these utilities, thereby overcoming a significant barrier to economic development.

The use of BBOXX products will also include the adoption of mobile payment solutions across the country, helping to improve the financial inclusion of rural communities.

BBOXX is currently running a pilot for Internet access in Rwanda and plans to investigate how it can be deployed in other markets.

Mansoor Hamayun, chief executive officer of BBOXX, said, "Our partnership with the government of Togo is going from strength to strength – the progress we have made in less than a year is testament to that. We have big ambitions to grow our customer base in Togo, where the rural electrification rate is unacceptably low. By rolling out other utility services we will be able to tackle the pressing issue of energy poverty in the country, for the benefit of Togolese communities.

"We aim to be the trusted brand for energy and utility needs in Togo."

For more information visit www.bboxx.co.uk

DAYSTAR SECURES FINANCING FROM DEG

Daystar Power has secured funding from DEG - Deutsche Investitions- und Entwicklungsgesellschaft mbH, Germany's development finance institution and a subsidiary of KfW, to finance its rollout of hybrid solar power solutions in West Africa. Daystar Power, which belongs to the venture builder Sunray Ventures, is raising funds for the expansion of its renewable energy activities in West Africa.

Christian Wessels, managing director of Sunray Ventures says, "The lack of capital and its high costs are one of the major barriers to economic development in sub-Saharan Africa. This is especially true for asset intensive industries such as renewable energy generation. We are happy to work together with DEG, one of the world's leading development finance institutions in financing, installing and operating solar power systems in sub-Saharan Africa." DEG is one of the world's largest private-sector development financiers and is heavily committed to private-sector promotion in Africa, with 17 per cent of its new business in 2017.

► BRIEFS

Image Credit: Cummins



Thierry Pimi has been named as new executive managing director for Cummins.

New executive MD for Cummins

Cummins, a global power leader, has announced the appointment of Thierry Pimi as executive managing director, Cummins Africa and Middle East Area Business Organisation. He said, "I'm delighted to be leading the Africa Middle East Business at what is undoubtedly a pivotal moment in our company history. Cummins operates in many African markets, including South Africa, Angola, Botswana, Côte d'Ivoire, Ghana, Lesotho, Madagascar and Malawi.

Image Credit: Adobe Stock




Fenix has cemented its place as market leader in off-grid solar sector.

Fenix reaches 30,000 Zambians

Fenix International, part of global utility ENGIE, has provided 30,000 Zambian households solar home systems – just nine months after expanding into the country in partnership with telecom MTN. This rate of growth exceeds the company's expectations and outpaces the industry average, cementing Fenix's place as a market leader within the off-grid solar sector. Lyndsay Handler, CEO of Fenix International, comments: "This marks a great milestone for the entire Fenix Zambia team."



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Visit our booth number K21, Elec Expo exhibition on 24-27 October 2018 at the International Fair of Casablanca, Morocco.

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Genset imports rise by more than 10 per cent

PowerGen Statistics provides *African Review* with a positive overview of the genset market in the first half of 2018.

The African imports of diesel generating sets have grown by 11 per cent in the first half of 2018 reaching US\$410mn thanks to a strong first quarter, according to the latest research by PowerGenStatistics. However, analysts say this growth is unequal and the second quarter of 2018 was slightly down compared to last year, by -1 per cent and that it is too early to say that the African market has recovered from its lowest year in 2017.

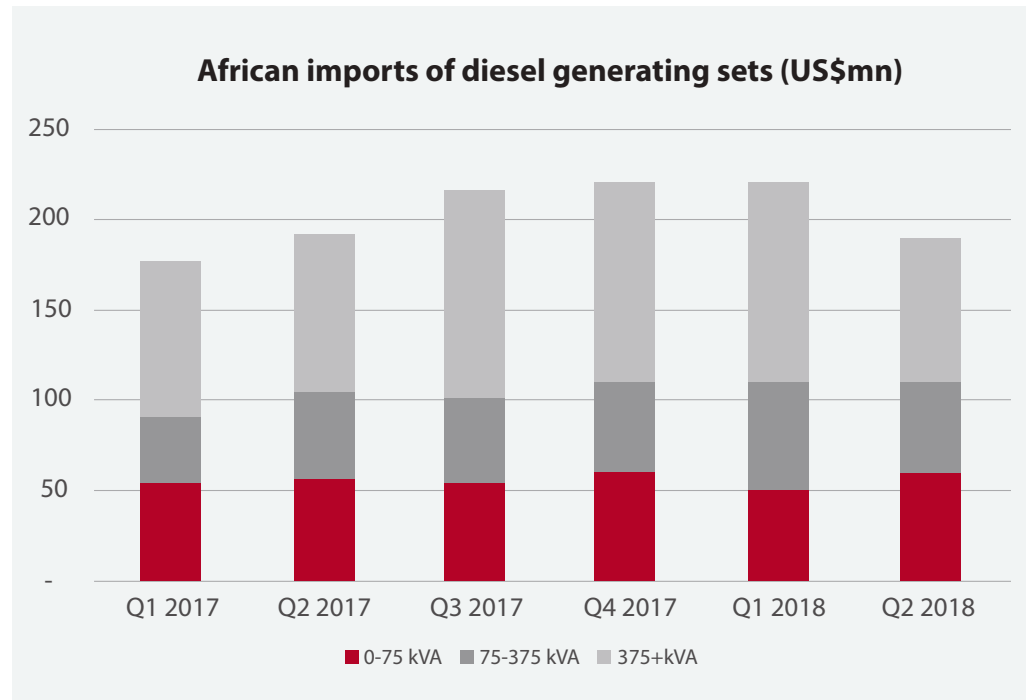
Growth: >375 kVA generators

The growth has been significant in the larger sets (>375 kVA) as imports have increased by 16 per cent compared to last year. One of the reasons is that some big projects in Gambia and Guinea have been delivered in the beginning of the year and hide some other declining markets (eg. Nigeria, South Africa). From an African point of view, the small and medium range of products (<375 kVA) have only grown by 6 per cent and are still very low compared to previous years.

Algerian and Egyptian imports have increased by 4 per cent and 20 per cent in the first half of 2018 (reaching US\$40mn), boosted by some big projects (generators >750kVA), with imports of US\$15mn for Algeria and US\$23mn for Egypt.

In the opposite, the South African and Angola imports have declined by 20 per cent and 15 per cent in 2018, also due to less imports of large generators (-40 per cent in South Africa for the 375+ kVA range)

Romain Mocaër, consultant from PowerGen Statistics says, "Despite a better start in 2018, the African market of diesel generators is still fragile, and is dependent on mining prices as well as oil and gas prices.



These segments are particularly driving the growth of the biggest market; Nigeria, Algeria, Angola, South Africa, and the recent drop of mining prices are not a good indicator for the generator market. Moreover, oil prices are expected to decrease in the short and medium term, so despite huge needs for power, especially in Nigeria where 75 million people still lack access to electricity, and relative economic growth, the African market of diesel generators is likely to be slow over the next few months."

African manufacturers

Africa is a special market as most generators are imported and only few countries have generator assembly plants. However, these

manufacturing countries are the major markets; Nigeria, South Africa, Egypt, Algeria, and today, around 25 per cent of diesel generators >75 kVA sold in Africa are manufactured in the continent.

We can distinguish three types of assemblers: the global brands, such as FG Wilson and JMG in Nigeria; regional assemblers, mainly from the Middle East, with local African assemblers. All these generators are built with imported engines and alternators but can offer lower prices due to lower labour cost and above all much lower import duties applied on engines and alternators than on complete generators. Mikano is one of largest assembler; of power gensets, using generator

manufacturers such as Perkins, and providing quality gensets ranging from 9 kVA to 2000 kVA for homes and industries.

Most of generators assembled in Africa are in the low to medium range <375 kVA, where they represent around 40 per cent of the African market in value and represent a high volume in units, and only less than 10 per cent of generators >750 kVA are made in Africa.

Zest WEG Group

Zest WEG Group, one of the leading genset manufacturers in Cape Town, supplies standard off-the-shelf generator sets and custom built units with capacities that range from 10 kVA up to 3,350 kVA at 50Hz.

According to chief operating officer, Louis Kotze, the market has been buoyant in South Africa with unit sales for generator sets in the 10 kVA to 715 kVA range doubling between January and July 2018. He

“Despite a better start in 2018, the African market of diesel generators is still fragile”

ROMAIN MOCAËR, POWERGEN STATISTICS

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has attributed this to the company's ability to supply the correct engine brands for specific market segments.

Also contributing to this is the genset product offering that has been extended beyond the company's Custom Range to include a Value Range, a Premium Value Range and a Premium Range. Kotze says that this has allowed the group to offer the market options suited to individual application requirement as well as budgets without compromising on the quality of the product.

Demand from countries across border into Africa has been somewhat slow, however Zest WEG Group did receive a sizable order for a diesel power plant project in the Democratic Republic of Congo (DRC). The power plant will comprise three 1,250 kVA generator sets with associated auxiliary equipment, and Kotze says that receipt of this order aptly demonstrated the company's ability to cater for larger projects.

An interesting trend that Kotze notes is the rising level of confidence in Zest WEG Group's genset manufacturing capabilities from traditional South African diesel generator suppliers and



The 2,000 kVA roof-mounted containerised diesel generator supplied to the Christiaan Barnard Hospital in Cape Town.

Image Credit: Zest WEG Group

“ We are assembling two 2,000 kVA generator sets with WEG 11 kV alternators for a luxury development in Sandton ”

LOUIS KOTZE

OEMs. He says that there has been a distinct swing from a typical competitor relationship to one of

collaboration. This, he attributes, to the company's ability to provide significant technical value-add

without compromising the relationship the supplier has with specific customers.

With greater focus on streamlining its manufacturing facility, Zest WEG Group has strengthened existing relationships and entered new ones with both distributors and other relevant service providers. Kotze believes that there is huge potential to pursue similar distribution models and agreements with diesel generators suppliers based in Africa and has welcomed engagement from interested parties.

Another area where Zest WEG Group has made an impact in the market is its ability to provide major value-add with its WEG medium voltage alternators. These are suitable for use in large capacity diesel power plants, above 1,500 kVA per unit, and Kotze says this advantage has enabled the company to secure several sizable projects for delivery in 2018 and into 2019.

He explains, “We are currently assembling two 2000 kVA generator sets, which are equipped with WEG 11 kV alternators, that will be installed in a luxury development in the centre of Sandton, and recently completed the conceptual design of a 2.5 MVA generator set, also with an 11 kV WEG alternator, for a large mining group.” ■



This generator set powered by a Volvo diesel engine coupled to a 630 kVA WEG alternator is installed at the V&A Waterfront in Cape Town.

Image Credit: Zest WEG Group

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VISA SPA INVOLVED IN LIBERIA'S PRESIDENTIAL PALACE RESTORATION PROJECT

Italy-based Visa SpA, one of the world's leading diesel genset manufacturers, has been involved in the important restoration project of the Presidential Palace in Liberia.

The Visa SpA engineering team has supplied six total units of generating sets to comply with the specific needs of the project. They comprise three units of the model P 805 S, silent version, 800.0 kVA in PRP, and two units of the model P 251 GX, silent version and 250.0 kVA in PRP. All units feature Perkins diesel engines and Stamford brushless alternators, equipped with an In-Synch control panel (Comap IntelliGen Base Box and IntelliVision5 Display).

The generator sets have been installed as back-up power supply, offering maximum performance. They are operating from a technical building outside, specifically designed



The Visa SpA genset inside the Liberian Presidential Palace has a special canopy to eliminate noise.

to host them. The machines are fed by three underground fuel tanks. An additional 2,000 litre custom fuel tank is provided, equipped with a pumping unit and fuel system of filtration complete with water separator.

The other genset, the model P 251 GO, 250.0 kVA in PRP, was placed inside the palace itself, in case of a general failure occurring in the technical building. It is equipped with a Perkins engine, a Stamford alternator and a large fuel tank. Great care was taken to ensure that all requirements and environmental concerns of the project were taken into account, as the location of this unit meant that the noise level and vibrations had to be kept to a minimum. For that purpose, the generator was provided with a specific bell canopy, tailored to fit the customer's room, with anti-vibrating spring systems to minimise the vibration transmission.

A Visa SpA spokesman said, "We are proud to have contributed towards the gradual transformation of this massive building."

EMERGENCY POWER FOR HOTELS IN BURKINA FASO

Himoinsa supplies HYW-35 T5 generator sets, which generate standby power of 37 kVA to guarantee the electricity supply of Hotel Poko, located to the west of Ouagadougou in Burkina Faso.

The hotel is located in an area where the mains supply is unstable, so it needs an emergency Himoinsa generator set to be installed to cover any power outage. In this case, the HYW-35 T5 model with a Yanmar engine and a Stamford alternator was chosen.

In the event of a power outage, the generator will start up to supply power to the whole hotel complex and enable both the main building and the outside area to function as normal.



Himoinsa is supplying standby power to Hotel Poko in Burkina Faso.

The soundproofed generator set guarantees low noise emissions, which is ideal for urban centres and a feature that was very much appreciated by the customer.

The generator set incorporates a 100 litre internal tank, meaning that the generator's running time is long enough that no external tank is required, thus reducing operation costs. Himoinsa offers optional larger tanks, with a capacity of 190 and 330 litres, where required.

DOOSAN 20-60 KVA GENERATORS FOR AFRICA

Doosan Portable Power has launched a new range of four generators from 20-60 kVA for the Middle East and Africa, available in both 50 Hz and 60 Hz versions. As well as construction, rental and agriculture, the new generators extend the Doosan portfolio to a wider audience to cover applications such as home standby, telecommunications and back-up power for small businesses.

The four new generators, the G20, G30, G45 and G60, provide prime power outputs of 20, 30, 45 and 63 kVA, respectively, and all four units are available as open units (XF) or sound attenuated versions (XW). The equivalent 60 Hz versions are also available in a range of voltages between 220V and 480V (Phase to Phase).

They are powered by well-proven Cummins diesel engines and are covered by the best standard warranty on the market – two years and/or 4,000 hours on the complete powertrain.

The new generators are fully supported by the extensive Doosan Portable Power dealer network for the Middle East and Africa, from unit start-up to complete servicing, maintenance and troubleshooting back-up.

In addition to dealer parts stock for planned servicing or emergency needs, parts are also available through the Doosan network and from within the Doosan Parts warehouse in Dubai.

Sharing the same design and characteristics, the new generators offer robustness and reliability, high performance and a wide choice of features to meet the needs of a very wide range of power applications from prime power in remote areas to stationary units in grid back up. The standard frame-fuel tank configuration of the generators ensures autonomy of at least 15 hours at 75 per cent of the load, allowing users to work regular shifts without refuelling concerns.



The G45 is one of Doosan's new generators.

Namibia: new hotbed for oil and gas exploration?

A pioneering cryptocurrency firm is calling on global investors to support an oil and gas project that could supply the energy needs of Namibia 25 times over. Samantha Payne talks to the CEO of the Aziza Project.



The exploration drilling equipment.

The Aziza Project has set itself a US\$60mn target to fund a ten-well drilling programme in the Kalahari desert for its partner, Africa New Energies (ANE).

ANE holds the rights to the 22,000 km² asset in Kalahari – roughly the size of Wales – and is using state-of-the-art technology to explore the basin at a tenth of the cost of traditional methods.

The concession has a mean net unrisked prospective resource of 1.6bn barrels of oil, which is estimated to satisfy Namibia's 3.77 TWh energy consumption and is sufficient to turn the country into an exporter of oil and gas.

The plan is that proceeds from the onshore Kalahari asset, which has had more than 700 oil and gas seeps, would be used to develop community solar projects via a hybrid gas-to-solar strategy. This would start the electrification of Namibia as well as surrounding countries.

To kick-start the vision, the Aziza Project will be launching a cryptocurrency later this month and will be visiting the USA as its first port of call to attract would-be investors.

CEO Robert Pyke said, "The heart of Aziza, a fundraising mechanism, is issuing crypto tokens where people can receive the economic benefits of owning 20 per cent of ANE. Our cryptocurrency token is an investment, which is akin to buying a share in a company. Therefore, we need to be compliant with security and regulation where our issuers and potential investors are based.

We are definitely a pioneer, and the next six months are going to be really critical for us. We will be in Boston in the next couple of weeks where there will be a token event

for investors. In an ideal scenario, we hope our fundraising activities will be completed by Christmas."

Once the Aziza Project has raised the necessary funds, ANE will be

ready to start the drilling programme.

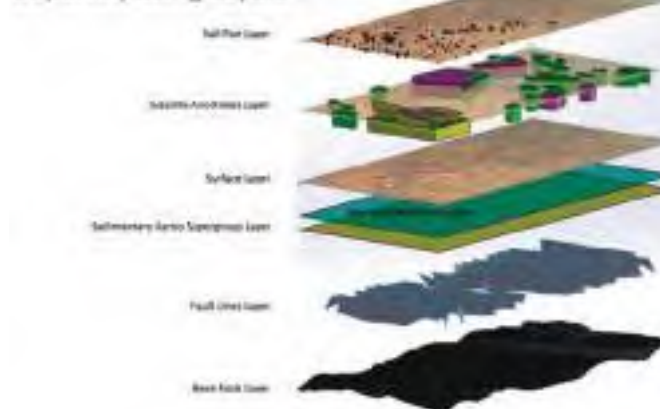
"ANE has gathered nine out of 17 layers of data, which has identified 32 anomalies that are likely to be caused by hydrocarbons. Seven of which are regarded as high quality. They know where they want to go and the process of drilling itself will give them a wealth of additional information."

Pyke added, "Trying to embrace leading edge technology to raise finance to support a project like this, is very exciting. The reason why we are doing it, instead of through conventional fundraising, is that it will be substantially cheaper and will save money both for the organisation raising the cash and the investor in the end. It is a very compelling investment opportunity."

"Things are rather dynamic at ANE at the moment," said Stephen Larkin, CEO of ANE. "We are going full steam ahead in expanding our acreage. We're looking to acquire additional blocks in Namibia, expanding our acreage in South Africa, and are seeking to expand into Botswana. We are also currently preparing the pre-drilling environmental impact assessment for Namibia as we accelerate towards spudding that first well."

The common theory is that Namibia's offshore basins are likely to be similar to two oil-rich Brazilian basins – the Santos and Campos – when the southern African country was once slotted together with Brazil some hundreds of millions of years ago. To date, however, there still has not been any commercially-viable oil find. ■

Superimposing Layers



Caption: The various surface layers including the anomalies that are expected to contain hydrocarbons.

“The onshore Kalahari asset would be used to develop community solar projects via a hybrid gas-to-solar strategy”



Caption: The oil and gas concession in the Kalahari Desert.

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Utilities need to future proof themselves with new technologies such as smart metering.

Image Credit: Adobe Stock

Tackling the challenges of utilities

Marleze Loggerenberg, head of business development: Africa at Wipro Limited, shares how smart metering will play a critical role in electricity provision in the future.

How can smart metering help to streamline billing challenges facing utilities?

ML: Many utilities do not have the right systems in place. An integrated ICT solution will enable utilities to operate more smoothly and start putting the power back into the hands of citizens. With a proper ERM system, it will allow effective utility management to understand who the citizen is, where they are living, what their usage of energy is and to give enhanced customer service to them. On the positive side, it will also enable a more self-care solution where the citizen can log on to a portal and see their consumption and utility provision.

Utilities need to future proof themselves with new technologies, such as prepaid electricity and smart metering, as they are definitely going to play a huge role in the future in electricity provision. Smart and pre-paid metering can also be integrated into the utilities' back-end systems, which can give them a lot of live data to analyse and interpret while providing utilities with new insights to reduce costs and increase their revenue.

What is the main challenge facing utility providers?

ML: The main challenge for traditional utility

“When offgrid solutions are put in place, we have to make sure the communities know how to use and maintain them”

MARLEZE LOGGERENBERG, HEAD OF BUSINESS DEVELOPMENT: AFRICA WIPRO LIMITED

providers is the high cost of ageing infrastructure. I was in Uganda recently, and most of the infrastructure either has to be repaired or replaced. It then has to have a strategic asset maintenance or predictive monitoring programme after the infrastructure has been renewed. It's the same for the grid as it needs to be modernised to reduce all the basic constraints that they are having at the moment while embracing the technologies that are coming in, such as smart meters.

How can utilities receive the necessary investment to improve their infrastructure?

ML: With a proper ICT and billing solution you can manage your utility effectively, so you will be more in charge of your funds and spending. That's the first step of bringing in more investment. Secondly, the World Bank has been instrumental in enabling funding for utilities in Africa. Thirdly,

you have to consider the role of the private sector, which is forecasted to provide around 50 per cent of power generation by 2025, specifically around East Africa.

What systems can be put in place to stop utilities suffering from immense transmission and distribution losses?

ML: In my opinion, asset maintenance, predictive maintenance and monitoring of the infrastructures is an absolutely mandatory requirement to stop transmission and distribution losses. Emerging technologies allows you to monitor the grid and the infrastructure in advance and in a predictive manner, surpassing the traditional maintenance model. Through the data that you receive through IoT or monitoring devices, you can then reduce your maintenance costs, as you are not leaving it too late to carry out repairs. This will significantly reduce your outages and increase your revenue

Breakdown of hidden costs (per cent)

	Under-pricing	Transmission & distribution losses	Bill collection losses	Over-staffing
Africa, excl.				
South Africa	40	30	20	10
South Africa	81		4	15

Source: Policy Research Working Paper, 2016, World Bank.

Note: Efficient operation of a utility is defined as follows:

1) Transmission & distribution losses (both technical & commercial) of 10 per cent of dispatched power or lower;

2) 100 per cent bill collection;

3) The same staffing level as in well-performing, comparable utilities in South America.

because your grid is up most of the time and you are able to monitor the grid more effectively.

Are off-grid solutions the answer to poorly run state-owned utilities to get electricity access to the rural masses?

ML: There are 500 million people living in rural areas in East Africa that have no access to electricity or water, so offgrid solutions definitely have a place, but most people who don't have access to electricity can't afford expensive offgrid solutions. In Europe or South Africa, you don't think twice about putting solar panels on a roof or water solutions in a garden, however, people in Africa do not necessarily have the funds to do that. In my opinion, if there is an independent power producer and the national and local governments want to collaborate with them on any energy project, it must be sustainable for the communities involved.

Can you provide any examples?

ML: Recently, there was a solar panel programme launched in a rural village in Mozambique. Ninety-nine per cent of the people there have no access to power or running water or sanitary services, and live so off the grid that they have to walk to get water out of a river or make a fire to cook their food. Initially the solar programme worked very well, but it was not sustainable in the long-term. Batteries from the



Image Credit: Wipro Limited

Marleze Loggerenberg.

solar powered technology started to fail, people then started taking someone else's equipment or stopped using the solar panels altogether, reverting back to what they used to do. That's why I believe when offgrid solutions are put in place, we have to make sure that they are part of a sustainable programme, and the rural communities know how to use and maintain them. It also has to be cost-effective because most people living in rural areas do not have that access to funding, like people living in the cities. ■

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Mobile solutions offering cost-effective option

Alastair Gerrard, integrated solutions executive at Zest WEG Group, shares the merits of the company's mobile power solutions supporting the mining industry in southern Africa.

Image Credit: Zest WEG Group

Deep engagement with customers and technical site audits are among the tools used by Zest WEG Group to develop mobile power generation and substation solutions, leading to close collaboration in design and implementation.

According to Alastair Gerrard, integrated solutions executive at Zest WEG Group, there are very few limits to what can be achieved with these mobile technologies. Gerrard says these can generally be supplied and put into operation quicker than the conventional fixed-type solutions, and at lower capital and operating costs.

"Our custom-engineered power generation solutions and distribution systems are the result of an intensive design process based on a detailed understanding of the broader application in which the solution must be applied," says Gerrard.

The mobile generation solutions are mainly diesel powered, with the intention that a generating set can be moved and deployed in different operational locations as required. This is more cost effective than having several fixed plants spread over several locations.

"The capex benefit of this approach is clearly significant, and the operating expenditure is also lower due to the smaller fleet required," he says. "Mobile plants are designed to comply with legislative requirements including road transportation limitations, and we can provide any mobile-type configuration as long as we understand its intended application."

Gerrard highlights that the interface between the mobile solution and the fixed systems to which they must connect need to be well designed and managed. In a

project for a leading South African gold mining company, four 2,5 MW mobile diesel generators were designed and delivered after extensive engagement with the customer.

"The beauty of this solution was that each genset could be quickly connected to the electrical network on whichever shaft required power," says Gerrard. "The gensets were also designed to be used either as single units or as multiple units, depending on the power required."

The design was preceded by a comprehensive audit of all the operational locations, to understand what was required to equip them fully to accommodate the gensets. Through this, the integrated solution was standardised as far as possible to enhance safety and cost-effectiveness.

"With the gensets producing energy at 6,600 V, the connections at each shaft needed to be at medium voltage level," he says. "Specialised coupling systems were therefore put in place, along with detailed procedures that would ensure the highest level of safety."

This included the use of mechanical interlocks so that generators could not be plugged into a live network or decoupled while they were running.

"The interfacing is critical to the overall success of all mobile solutions, so care must be taken

when designing the integration of the solution with the fixed infrastructure," he says. "The way we connect these systems must allow easy deployment and operation but must also ensure adequate protection is in place with the fixed infrastructure."

Another popular line of Zest WEG Group's mobile solutions is its mobile substations. These offer all the functionality of fixed substations, and are used typically for emergencies or longer term maintenance projects.

"Utilities can bring in a mobile substation and divert energy from the electrical network through the unit, keeping the power running while maintenance is carried out on their fixed substations," he says. "In a recent project for an African utility, we custom-engineered various mobile substation solutions with multi-ratio transformers to accommodate both older and newer electrical networks operating at different voltage levels. This allows the customer to connect to these various networks and included special protection systems as part of the solution."

Mobile switching stations – normally in the medium voltage space – have proved highly beneficial to both utilities and municipalities when a fixed distribution substation requires maintenance or emergency attention.

The mining industry remains an important market for mobile substations, and Zest WEG Group regularly supplies custom-designed equipment to this sector across the continent. In the Democratic Republic of Congo, a 15/18 MVA mobile substation solution was recently supplied to a mining company. Being mobile, the unit can be moved and grid-connected when energy is required to support new mine developments.

An opencast mining operation in Namibia has also been making good use of Zest WEG Group's 5 MVA containerised and skid-mounted substation solutions, with both 33 kV and 6,6 kV fixed-pattern, indoor type switchgear. The solution ensures optimum flexibility as it can be moved where needed as operations require.

"We are also busy with a project to supply a 6,3 MVA mobile transformer on a trailer to a mine site in Mozambique where this will act as an emergency back-up unit to connect into the network," says Gerrard. "We are also providing a complete mobile substation to the same project, which will include a 5 MVA, 22 kV/40 0V transformer. This will take power from the utility at medium voltage and distribute it to the operations, as well as accommodate connections to low voltage energy supplies from standby gensets in case of an emergency."

He emphasises that a further benefit of mobile solutions is that extensive testing can be carried out under workshop conditions before the unit is dispatched to its end-destination. This helps to reduce the construction and commissioning risk on site, with less chance of any delays or unexpected technical challenges. ■

“The capex benefit of mobile generation solutions is clearly significant and operating expenditure is lower”

ALASTAIR GERRARD, INTEGRATED SOLUTIONS EXECUTIVE AT ZEST WEG GROUP

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Biogas boost for Rwanda's power sector

Rwanda's pioneering Lake Kivu biogas project is set to boost dependable power supply. Martin Clark reports.

An innovative plan to turn gas from Lake Kivu into reliable electricity is moving forward at pace after years in the planning.

The concept involves generating power from dissolved biogas from deep below the lake, which sits on Rwanda's western flank along the border with the Democratic Republic of Congo (DRC).

Engineers have long seen the potential to boost the nation's power supply using the gas, but exploitation has taken time because of technical, commercial and other complexities stretching over many years.

Potentially, the scheme could transform Rwanda's energy sector, creating a dependable power supply to drive further economic growth and industrialisation.

In fact, there are two separate power projects at the lake that will increase the country's generation capacity by around 81 MW.

The initiative is led by independent power producer, Symbion Power, which has secured the rights to deliver the two projects from the government.

The first, Kivu 56, is planned to export 56 MW of power into the Rwandan grid under a 25-year concession.

The second, KP1, originated as an earlier pilot project, and Symbion has acquired the plant and will upgrade it from 3.6 MW to 25 MW, again under a 25-year concession.

As well as delivering more electricity, the twin projects are expected to significantly drive down the cost of generation in Rwanda – good news for businesses and households.

Engines deal

And the dual power plant initiative is making strong headway.

Plans to turn gas from Lake Kivu into reliable electricity.



In August, Clarke Energy announced that it had been named preferred bidder for the Lake Kivu projects, that will feature around 25 of GE's Jenbacher gas engines.

The gas engines, a familiar sight in many African power projects already, will come from GE's Distributed Power business.

Under the planned deal, Clarke Energy will deliver GE's J620 3 MW Jenbacher gas engines across both of Symbion's Kivu 56 and KP1 power plants.

The actual power stations are to be built on the shores of Lake Kivu.

Clarke Energy's managing director in Africa Alan Fletcher called the biogas power schemes "two key projects" for Rwanda.

"Our proposed solution is able to deliver reliable supplies of sustainable energy and support jobs in Rwanda and the UK."

Clarke Energy has said it will also create local jobs in Rwanda to support the servicing of the engines.

"These two power projects at Lake Kivu will increase capacity by 81 MW and significantly reduce the current

cost of generation in Rwanda," said Symbion Power chief executive officer Paul Hinks.

Lake Kivu gas

The Kivu projects are innovative for many reasons, not least in massively upscaling Rwanda's domestic energy sector. Lake Kivu, one of the African Great Lakes, is a unique body of water in the world, which at its base is saturated with biogas that is a combination of methane and carbon dioxide gases.

This gas is produced by way of the unique combination of 500-metres depth heat originating from magma under the rift valley and microbes, breaking down organic material that falls from higher in the lake.

The actual surface of the lake is some 1,460 metres above sea level.

Unlike normal biogas, which is produced in anaerobic digesters, organic process plants process biodegradable waste, so at the base of the lake, the biogas contains only 20 per cent methane. This level is lower than that required even in a Jenbacher gas engine.

The plan is to strip the carbon dioxide, which forms the balance of the volume of the gas, using water and then to put the gas into reciprocating gas engines the power stations on the lake's shores. The electricity will be put into Rwanda's distribution network.

Trusted solutions

The East Africa region, in fact, has a track record for innovation in the power sector. Though a very different solution, and not directly comparable, Kenya has been a pioneer in the use of geothermal energy from deep underground.

Likewise, Tanzania was a frontrunner in sub-Saharan Africa in the deployment of its natural gas for use in its power industry.

Nonetheless, the choice of GE's Jenbacher engines is familiar ground for Africa's energy sector.

Its Jenbacher Type 6 gas engines boast 1,500-rpm engine speeds that result in a high power density with low installation costs, while its pre-combustion chamber achieves high efficiency with low emissions.

"GE's Jenbacher gas engines will provide higher efficiency and increased capacity for Symbion Power's projects, helping to solve the energy challenges in the region," said Leon van Vuuren, general manager, global sales and commercial operations for GE's Distributed Power business. ■

“These two power projects at Lake Kivu will increase capacity by 81 MW”

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AZURI AND UNILEVER PARTNER TO BRING SOLAR KITS TO KENYAN HOMES

Azuri Technologies, a leading provider of pay-as-you-go solar home systems and Unilever Kenya, announced their partnership to bring solar home solutions to millions more off-grid homes across Kenya.

The announcement comes as Prime Minister Theresa May and UK business leaders, including Azuri CEO Simon Bransfield-Garth, arrived in Kenya for a state visit to boost trade ties.

Under the terms of the deal, Azuri's Quad solar home lighting system will be co-branded with the Unilever Sunlight brand and offered through Unilever's distribution network, which in Kenya is some 67,000 smallholder traders. The Unilever distribution network will complement Azuri's existing partners: Raj Ushanga House and Mobicom.

More than 600 million people in Africa have no access to electricity, and many such households are located in regions where provision of grid electricity is prohibitively expensive. Azuri has been helping to address this challenge since 2012, through its innovative solar home solutions, delivering reliable, renewable and distributed power on an affordable pay-as-you-go basis.



Image Credit: Azuri Technologies

Azuri's Quad solar home lighting systems will be co-branded with the Unilever Sunlight brand

The partnership between Azuri and Unilever marks the next step in this journey, expanding the reach of pay-as-you-go solar through the trusted Sunlight brand of washing powder and building on Unilever's mission to bring high quality sustainable products to Kenyan consumers. The solar home lighting system includes a 10W solar panel, four bright LED lights, USB port and connectors for mobile phone charging.

A recent study reports owners of solar home systems on average increased their incomes by

US\$35 per month. In addition, data shows that children spend more time doing homework in the evenings and to date, Azuri has created more than 2,000 new jobs through its Kenyan partner companies.

"The partnership with Azuri will help deliver life-changing solar technology to off-grid communities and provide Unilever customers and traders with the benefits of modern energy. Solar power is proven to support the local and wider economy and further supports Unilever's commitment to the UN Sustainable Development Goals," said Justin Apsey, managing director East Africa at Unilever.

Azuri CEO Simon Bransfield-Garth said, "Azuri is delighted to be partnering with Unilever to expand further the reach of solar pay-as-you-go technology. The partnership is aligned to Azuri and Unilever's mission to a triple bottom line of delivering social, environmental and financial returns to customers and investors alike."

Prime Minister Theresa May said, "I'm delighted that Azuri Technologies joined me on this visit, and they are a fantastic example of the success UK companies can achieve when they think big and forge global partnerships."

Aksa: Cementing its place in the West African energy market

Aksa operates on seven continents with production on three, and exports more than half of its production. It continues to keep its finger on the pulse with the African market and consumers with the events it has participated in around the world. Aksa will attend as a sponsor of the Regional Energy Co-operation Summit in Accra on September 26-28.

The summit will bring together more than 40 government committees from the region and numerous private sector representatives and investors, focusing on the financing of projects in West Africa and cross-border energy infrastructure.

Aksa CEO Alper Peker emphasised that Ghana was a pioneer in cross-border energy commerce. "West Africa is a market whose energy needs are increasing each day and that presents an opportunity for investment," he said. "We consolidated our place in the West African market, which we



Image Credit: Aksa

Aksa CEO Alper Peker said Ghana was a pioneer in cross-border energy commerce.



Image Credit: Aksa

Aksa has been operating in the West African market since 2001.

entered in 2001 with our office we opened in Nigeria by establishing the Aksa Ghana company. At this event where we are a summit sponsor, we grabbed the chance for interaction aimed at implementing new financial and political tools to assess regional market opportunities along with sharing the experiences in western Africa. We value coming together with the sector by attending similar fairs and summits. With our years of experience as the leader of the Turkish generator sector, we will continue to present uninterrupted energy solutions to West Africa."

Aksa Power Generation was one of the first manufacturers in the world of natural gas-powered generators and it maintains its work with lower fuel waste, lower noise levels, and environmentally friendly generators with R&D investments, while protecting its superiority in synchronic generator projects.



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Investments in new technology and machinery at Bobcat's innovation centre

Doosan Bobcat has announced a swathe of investments in new technology, machinery and processes at the company's Innovation Centre in Dobris in the Czech Republic. The Innovation Centre is the R&D hub of an integrated site at Dobris that also includes manufacturing, sourcing and training at the same location.

Doosan Bobcat believes the ability to design, test and manufacture Bobcat machines locally is one of the company's competitive advantages in the Europe, Middle East and Africa (EMEA) region. The new investments are intended to boost these advantages and involve every part of the operations in the Innovation Centre, from rapid prototyping and prototype assembly to performance and durability testing.

The Innovation Centre is a European Engineering Centre of Excellence, serving as an expert R&D centre for all Doosan Bobcat engineering teams across EMEA, and has global responsibility for small compact loaders and compact excavators from 0-3 tonne.

It focuses on creating new innovative solutions, product development, research and testing activities. The facility, with more than 8,000 m² of floor space for prototyping and testing and 1,400 m² of office area, is a place where new advanced – and in some cases – unique technologies are installed.

With recent advances in computer designing and modelling, many manufacturers omit (or at least limit) the creation and testing of physical prototypes. In contrast, at Doosan Bobcat, the company knows their importance and has invested heavily in its production technologies.

Over the last 12 months, Doosan Bobcat has completed several more significant investments and has installed three important technologies at the Innovation Centre. These include the CNC horizontal boring machine and the CNC 5 axis milling machine, both of which have been installed to support faster prototype builds, providing full control of the processes without the involvement of third parties, and finally the Dynamometer. The total cost of these technologies was approximately 36 million CZK (1.41 million euros) with 50 per cent incentive grants provided by the Czech Government.

Image Credit: Bobcat



The facility has more than 8,000 m² of floor space for prototyping and testing.

BUFFALO INTRODUCES NEW HANDLING TRUCK



Image Credit: Buffalo Grove

Buffalo Grove's new four-wheel hand truck - the Liftomatic 10HT-4W.

Buffalo Grove, IL Liftomatic Material Handling, Inc., an industry leading material handling equipment manufacturer, has introduced a new four-wheel hand truck, the Liftomatic 10HT-4W.

The model 10HT-4W is a four-wheel hand truck designed to handle all rimmed steel, fibre and plastic drums weighing up to 1,000 pounds. It is designed with ergonomic safety in mind, eliminating the need for an operator to bear the weight of the load during transport.

The drum truck has two 10 inch main wheels with full roller bearings, and two four inch swivel casters to support the drum while moving through plants and warehouses, in addition to Liftomatic's exclusive Parrot-Beak clamping mechanism. Other features include a clamping mechanism that can be adjusted to handle all drum sizes from 10 to 85 gallons.

Liftomatic Material Handling is an acknowledged leader in the design and manufacture of drum handling equipment. Headquartered in Buffalo Grove, Illinois, Liftomatic maintains manufacturing, engineering and sales facilities around the globe. Liftomatic currently sells products in more than 40 countries and sells to more than 400 of the Fortune 500 companies.

FASSI AND VOLVO PRESENT FX-LINK AT IAA

A crane and vehicle made whole. This is the result of the technology developed by Fassi Gru in collaboration with Volvo Trucks Italia, which was introduced to visitors during the 67th edition of the IAA Hannover trade fair last month. Its purposes are to give the driver better and quicker feedback on the state of the crane when behind the wheel of the truck, fully integrating this information into the vehicle's dashboard, and to enhance the capabilities of the remote control as an operating tool in crane handling.

Thanks to the CAN-BUS connection, the FX-Link system eliminates the need for connections of different control devices on both the truck and crane. With FX-Link, information will be exchanged in both directions, from the crane to the truck and vice versa. Switching the truck off and on, setting the engine speed, limiting the air suspension, switching on the headlights and other warning lights, activating the horn and activating the parking brake are all controls available on the crane's remote control.

► BRIEFS

Image Credit: SDLG



SDLG has been excelling at bulk handling at the Port of Durban.

SDLG wheel loader clocks 5,000 hours

An SDLG LG958L has clocked more than 5,000 hours of operations at a portside bulk-handling facility in South Africa. With 2.5 million metric tons per annum of dry bulk that passes through the Port of Durban, one tricky material that the wheel loader must handle is fluorspar, which weighs a hefty 1.4 t/m³ because it must be stored and handled while moist. The wheel loader has been excelling at the task without breaking down, impressing South African Bulk Terminals.


Nigeria to build six hydro dams



The six hydropower plants are based on the government's rural electrification plan.

The Nigerian government has announced plans to develop six hydropower plants, according to reports. The power plants will put out to tender for private companies to build and operate. Babatunde Fashola, Minister of Power, Works and Housing of Nigeria, said, "These are initiatives based on the rural electrification plan to provide access to power for rural dwellers and vulnerable members of our society."



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Innovation for the world we want to live in

Scott Young, director of electromobility at Volvo Construction Equipment, talks about innovation across the focus areas of connectivity, electromobility and automation.

In order to build the world we want to live in, we must continuously innovate to help drive a sustainable future. We help our customers to increase their operations and safety through innovation, with improved machine and site performance, which also benefit the environment. At Volvo Construction Equipment (Volvo CE), we have a culture of innovation, and of course, as we live in an ever-changing world, we must continue to innovate to support our customers and our industry, and to be part of a viable solution.

As part of the Volvo Group, Volvo CE is an active participant in the Volvo Concept Lab – a joint technology communication platform which enables the companies within the Volvo Group to showcase their research and development projects. There is therefore a wealth of knowledge throughout the Volvo Group that can be leveraged. Through the Volvo Concept Lab – and through seeing what is happening at other companies in the construction equipment industry – Volvo CE can learn from diverse perspectives, and consider the best way forward in creating new solutions for customers and the industry in general.

Connectivity

At Volvo CE our vision for connectivity is inspired by our customers' desire for simplicity. In a very complex environment, connected services help our customers to reduce their fuel consumption and improve the management of their assets.

Volvo CE has been a pioneer with CareTrack (our onboard system that allows customers to monitor load efficiency, number of cycles and overload percentages); more



The HX2 prototype machine is one of Volvo CE's autonomous electric innovations.

innovations will come to fruition in due course, with machine-to-machine processes, machine learning and artificial intelligence. These critical enablers will support the operation of electrified and automated machines and sites. Keeping always the customer in mind, Volvo CE believes that these new technologies should simplify and improve their daily operations, and also benefit staff safety and the environment.

Mobility

Electromobility offers reduced or zero emissions from our machines, higher machine efficiency, significantly lower noise levels, and reduced machine operation cost. It offers the opportunity to incorporate functions that can better assist operators, which in turn can provide higher quality outcomes in less time and with less effort.

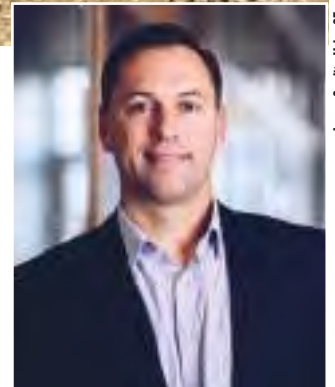
Of course, we understand that in some applications hybrid power systems are necessary to provide the

most flexibility for the machine when there is a higher demand for power or where there is a lack of electrical infrastructure available. But overall, the future of our industry is leading towards electrification with cleaner, quieter and more efficient machines, which not only support customer success, but will also be better for the environment. Volvo CE sees opportunities in many areas for electrification of products and systems.

The development of new technologies has been relatively expensive, but the cost of energy storage systems such as lithium-ion batteries is steadily decreasing, and so this is making electromobility a more financially attractive option.

Automation

Automation is another major technology that we see as an enabler of efficiency and safety for Volvo CE's customers. Automated



Scott Young: Innovation is key to a sustainable future.

functions improve machine and site performance and safety; they enable operators to work with optimal efficiency thanks to assist and guidance features which can off-set any difficulties for companies finding qualified staff, and these functions also benefit the customer by being able to remove operators from dangerous work areas.

Many customers want to learn more about innovative technologies such as connectivity, electromobility and automation, as they see opportunities to improve efficiency and meet their sustainability goals. Ultimately, we see the potential in the products we currently offer at Volvo CE, as well as opportunities for new offerings in the future. ■

“ Many customers want to learn more about innovative technologies ”

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K55L
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Cat launches Next Generation 36-ton size class excavators

Caterpillar has launched its Next Generation 36-ton size class excavators — the 336 and 336 GC — increasing operating efficiency, lowering fuel and maintenance costs and improving operator comfort.

The Next Generation 36-ton size class excavators from Caterpillar boosts three major benefits compared to

previous models: up to 45 per cent more operating efficiency for the 336, which boasts the industry's highest level of standard factory-

equipped technology to increase productivity, up to 15 per cent more fuel efficiency (336), and up to 15 per cent maintenance cost

reduction. The new excavators offer unique combinations of features designed to match contractors' productivity and cost targets.

PRODUCTIVITY

The new Cat 336 is equipped with integrated Cat Connect Technology and features the most power and lift capacity of the two models. The result is maximum productivity at the lowest cost.

The standard Cat Grade with 2D system provides guidance for depth, slope, and horizontal distance to grade, making operators more accurate and 45 per cent more efficient over traditional grading operations. The 2D system can be upgraded to Cat Grade with Advanced 2D or Cat Grade with 3D. There is also an E-fence feature that prevents the excavator from moving outside operator-defined set points.



FUEL EFFICIENCY

The 336 and 336 GC new excavators produce more work per unit of fuel than the models they are replacing — up to 15 per cent more fuel efficiency for the 336. New Smart Mode operation automatically matches engine and hydraulic power to digging conditions, optimising both fuel consumption and performance. Engine speed is automatically lowered when there is no hydraulic demand to further reduce fuel usage. A new cooling fan runs on demand to keep the excavator working at the correct temperature for maximum efficiency.

The Cat 336 and 336 GC feature a new main control valve that eliminates the need for hydraulic pilot lines, reduces pressure losses and lowers fuel consumption. In addition, less oil is required, lowering long-term operating costs.



NEW DELUXE CABS

With a choice of comfort or deluxe cabs, features include keyless push-button start, large standard 8inch touchscreen monitor with jog dial keys for control, and sound-suppressed rollover protective structures to offer premium operator comfort and safety. New advanced viscous mounts reduce cab vibration by up to 50 per cent, compared with previous versions.

With the 336 only, there is optional 360-degree visibility, combining images from multiple machine-mounted cameras to enhance the operator's sight lines in all directions.



NEW FILTERS

With extended and more synchronised maintenance intervals, the new Cat excavators reduce maintenance costs by up to 15 per cent over the previous series. A new Cat air filter has double the dust holding capacity over the previous design, the hydraulic return filter has a 3,000 hour service life and the fuel system filters are synchronised for service at 1,000 hours.

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UP TO
15%
LOWER
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BUILT FOR IT.

CAT

More than just heavy lifting

Innovative solutions for cranes are moving beyond power and performance. Martin Clark reports.



Konecranes has won another order for two Konecranes Gottwald floating cranes with Winning Logistics Company Limited.

Image Credit: Konecranes

Undertaking all the heavy lifting, cranes represent the unsung heroes of Africa's construction industry.

Delivering power and performance, these machines are the true workhorses behind everything from new city office blocks to the mines and offshore oil fields that generate much of the continent's export wealth.

And standards are being pushed all the time as contractors and engineers demand more.

For the first time, Liebherr Components presented its mining diesel engine portfolio to the African market at a recent trade show in Johannesburg.

The D98 Liebherr engine portfolio for mining applications stands out through its remarkable dynamic behaviour in medium and heavy-duty cycles, even under the toughest ambient conditions.

The company's D9812 engine, recently added to the range, was on display at the show, featuring a power output of up to 2,013 kW.

The Electra Mining Africa exhibition – southern Africa's biggest trade show since 1972 – has long been a platform to showcase the latest innovations and technologies.

And, says Dr Ingo Wintruff, marketing and sales managing director diesel engines at Liebherr, the D9812 is now proving itself in

the field following the bench testing phase.

"In fact, different field tests are currently ongoing at different sites and in different machines," he says.

The same show included a lifting conference under the auspices of the Lifting Equipment Engineering Association of South Africa.

Mining projects

Cranes of all shapes and sizes have long played a part in Africa's strategic mining and minerals industry.

The continent is a world leading producer of gold, diamonds, copper, uranium, as well as other minerals and gemstones.

South Africa's Condra recently received an overhead crane order from Kamoto Copper Company, a copper and cobalt mine in the Democratic Republic of Congo (DRC).

It is supplying a 3-ton, nine-metre span, single-girder workshop crane with a five-metre lift.

Condra's authorised agent for the country, Kolwezi Lifting Solutions, is managing the installation, the eighth unit to be ordered by Kamoto Copper in just over a year.

The new crane will play a role in the ongoing development and expansion of the mine.

Condra also recently despatched more cranes to Zambia's Mopani Copper Mines, taking its total sales to the mine above R100mn (US\$6.6mn) since 2012.

The latest shipment from Condra's Germiston factory comprises one electric travelling overhead crane, 38 hoists, two large and seven smaller jib cranes.

Mopani Copper Mines operates the Mufulira mine, smelter, concentrator and copper refinery on the outskirts of Mufulira, and the Nkana mine, concentrator and cobalt plant near Kitwe, both towns inside central Zambia's famous Copperbelt.

Condra also this year completed the delivery of more high-lift overhead travelling cranes for vehicle workshops at Exxaro's Grootegeluk coal mine in South Africa's Limpopo Province.

The orders, secured by Condra distributor H&H Specialised Services, comprises various cranes and associated machinery.

It includes two 50-ton double-girder electric overhead travelling cranes with standard two-speed hoists, both with spans of 18,4 metres.

Another crane, delivered in April, is an 18,4-metre span 50/20-ton machine featuring variable frequency drives on the main lift, long travel and cross travel to facilitate precise positioning of very heavy loads.

The auxiliary hoist on this machine has a standard two-speed option, while lift heights of the main and auxiliary hoists are 16 metres

and 17 metres respectively, similar to those of the other two cranes.

Mobile solutions

As well as heavy lift capabilities, versatility and mobility are now also highly prized.

One of the most innovative cranes to come out of the Konecranes product stable in recent times is the CXT Explorer.

It is a combination of a 6.3 ton mobile overhead crane, travelling on a gantry, supported by two sturdy containers which make for a fully equipped workshop that can literally be set up in the middle of nowhere.

The company says this makes it ideally suited to conditions in Africa.

The CXT Explorer comes as a predesigned package in one of the 20 feet standard shipping containers, with a carefully-selected range of standard functions and optional extras.

These include a full CXT electric overhead crane of approximately 1,250 kg, supported by the two containers, and an electric or manual hoist.

The shipping containers double as storage for the crane components, service tools, equipment and spare parts.

The CXT Explorer is easily transported together with another shipping container.

The containers are put onto the ground; the supporting steel

structure is built on top, secured with twist locks.

If available it can be plugged into the grid, or otherwise a generator.

The result: factory-level lifting a few hours after arriving on site.

To relocate the crane, it is packed back into the container and is again ready to go.

The system can be used in all manner of settings, including construction, mining, vehicle maintenance, agriculture, natural gas compressor stations, in the military, or for oil exploration and drilling, both onshore and offshore.

Offshore solutions

Indeed, the advance of mobile crane systems for the offshore sector has proved valuable new ground for established brands such as Konecranes.

The company this year won another order for two Konecranes

Image Credit: Condra



Condra has despatched cranes to Zambia's Mopani Copper Mines.

Gottwald floating cranes with Winning Logistics Company Limited.

The floating cranes will play a major role in the growth of Winning's bauxite handling activities off the coast of Guinea.

Here, they play a major role in the supply chain, trans-shipping bauxite from river barges to larger transport vessels on the open sea.

The cranes have proven themselves to be productive and

reliable even in a very rough open sea environment.

"Konecranes Gottwald floating cranes are derived from our mobile harbour crane technology and highlight our pioneering role in this field," says Giuseppe Di Lisa, sales and marketing director, mobile harbour cranes, Konecranes Port Solutions.

The first floating cranes went into operation on the Mississippi River in the USA back in 2004, finding their way to the open seas soon after.

Built for use on the open sea, the Model 8 floating cranes with a maximum outreach of 43 metres and a powerful 63 tonnes grab curve are designed in accordance with Lloyd's Register Code for lifting appliances in a marine environment.

This allows them to operate at wind speeds of up to 24 metres per second and at maximum wave height of 2.5 metres. ■

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JOHNSON CRANE HIRE ROLLS OUT ITS OWN 'BIG FIVE'

Customers of Africa's lifting leader Johnson Crane Hire were recently treated to an impressive display of a selection of the company's lifting equipment at an open day where its heavy lift fleet was likened to the 'big five' of the wild.

"Johnson Crane Hire is a home grown South African business, and like the big five we are firmly rooted in Africa," Peter Yaman, sales executive at Johnson Crane Hire, says. "Just as the big five have adapted to their natural environment, so have we succeeded in adapting to our economic environment, which is not always easy."

Yaman describes the company's LR 750-ton crawler crane as the elephant in the fleet. He says, "This is a brute of a crane, with the ability to lift over 100 African elephants at once – with each of them weighing five tons or more."

Next in line is the LR 600 crawler crane, he says, displaying similar toughness to a buffalo, followed by the powerful Kobelco 400-ton crawler crane.

"The rhino is the creature that comes to mind when talking about our powerful Kobelco 400-ton crawler crane," he continues, "as they share the attributes of ruggedness, durability and stability."

He notes, because heavy lifting requires speed, precision and agility, it is these qualities that make the LTM 750-ton hydraulic mobile crane comparable to the leopard. But he describes the LG 750-ton lattice boom crane like a lion – king of the Jungle and a force of nature and leadership.

"Leadership in safety and in lifting is what we are passionate about, being driven to attain 'SMART' lifting – through safety, maintenance,



Image Credit: Johnson Crane

The Johnson Crane Hire 600-ton lattice boom crawler crane towering over the 275 tonner.

availability, reliability and total cost effectiveness – as our brand promise."

DURABLE GRATING FOR INDUSTRIAL FLOORING

Enhanced corrosion resistance is a given with Andrew Mentis' Rectagrid RS40 (40/40) floor grating, making it the ideal solution for any industrial application.

Rectagrid RS40 (40/40) floor grating is manufactured in a world class facility at Elandsfontein, Johannesburg using a pressure locking system pioneered by Andrew Mentis. Quality control during the manufacturing process ensures that close tolerances are maintained, and that the round transversal bar fits tightly through the pierced bearer bar.

"Our manufacturing process which produces unquestionable locking characteristics guarantees the structural integrity of the product, and gives the customer absolute peace of mind," Lance Quinlan, national technical sales consultant at Andrew Mentis, says. Rectagrid RS40 (40/40) is formed through a process of compressive pressure locking of bearer bars and transversals to form an exact pitch of 40 mm by 40 mm.

Quinlan says that to be considered 'good', floor grating elements need to meet certain non-negotiable criteria. "The transversals must be positively and permanently locked to the bearer bars.

"There should be no cracks at intersections which could harbour corrosion and the locking method at the intersections should be designed to use the full depth of the bearer bar when calculating loads," he adds. "Finally, the grating panels should be flat, square and untwisted."

Quinlan says that because the intersection locking is so positive and strong, it is not necessary to band this grating.

Demag's revolutionary modular rope hoist



Image Credit: Demag

DMR modular rope hoist in co-axial design.

For the first time, a rope hoist can be built either in a C-design or co-axial design utilising one basic technology, thanks to Demag's latest innovation.

The extraordinary wide range of possible DMR applications can be extended because of smart interfaces and corresponding fittings and accessories.

Demag's Modular Rope Hoist offers many options, such as five different sizes with load

capacities of up to 50 tons; a choice of motors; a foot-mounted hoist, low-headroom travelling hoist, double-rail crab or a standard-headroom travelling hoist as well as a smart SafeControl system, conventional contactor control or provided by the customer.

"Flexibility and productivity, as well as its long service life and cost-effective operation are major characteristics of our DMR," says Richard Roughly, senior manager sales and marketing of Demag Cranes. "Consequently, the impressive modular rope hoist concept also offers sophisticated technical details."

The coupling between the motor, which weighs much less than previous models, and the gearbox absorbs sudden motor forces for a longer rope hoist service life.

The DMR gearbox, which requires 30 per cent less oil, provides for long maintenance intervals thanks to its efficient oil lubrication. Its enclosed design offers protection against external factors.



Image Credit: Demag

DMR Rope Hoist.

NEW CAT 24 MOTOR GRADER IMPROVES PERFORMANCE, LOWERS COSTS AND ADVANCES SAFE OPERATION

Building on the strong heritage of the M Series Motor Graders, the new Cat 24 motor grader delivers high performance construction and maintenance of mine roads to improve mining truck efficiency. The 24 motor grader is equipped with a 7.3-m wide moldboard and is application matched for medium to large mines running trucks over 180 tonnes payload. An innovative, modular design means components can be removed and installed quicker and easier, in some cases, up to 70 per cent faster when compared to the 24M. Standard Cat GRADE with Cross Slope improves operator productivity and haul road quality, which lowers truck tyre wear, decreases rolling resistance and reduces premature tyre failure.

The new motor grader features



The CAT 24 motor grader.

optimised weight balance and 15 per cent more low-end torque compared to the Cat 24M. These features improve traction and help maintain consistent ground speed, especially when carrying a large load on the moldboard, working on

grade, or turning under load. An 11 per cent increase in machine weight provides additional blade down pressure and tractive force to increase blading performance, and Consistent Power-to-the-Ground controls engine power levels to

offset cooling fan losses, allowing the motor grader to deliver optimum performance at all times.

The Cat C27 engine with ACERT technology delivers reliable performance and prolongs target rebuild life by 33 per cent over the C18 engine. The new 533-mm, 6-speed planetary transmission and improved rear axle bevel gear and final drive extend lower power train service life by up to 33 per cent, substantially lowering service costs.

The Cat 24 motor grader includes the latest technologies to protect the machine from operating or maintenance issues including engine underspeed/overspeed protection, transmission slip detect, articulation eStop, implements lockout and fluid monitoring.

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Barrick Gold and Randgold Resources agree multi-billion dollar deal

Canada's Barrick Gold Corporation has announced that it has reached an agreement on creating a share-for-share merger between Barrick and Randgold Resources Limited, in a major deal worth US\$18.3bn.

Barrick shareholders will own approximately 66.6 per cent while Randgold Shareholders will own approximately 33.4 per cent.

John L Thornton, executive chairman of Barrick, will retain the title of executive chairman of the New Barrick Group.

He said, "The combination of Barrick and Randgold will create a new champion for value creation in the gold mining industry, bringing together the world's largest collection of tier one gold assets, with a proven management team that has consistently delivered among the best shareholder returns in the gold sector over the past decade."

The merger is expected to close by the first quarter of 2019.

Mark Bristow, who will become president and chief executive officer of the New Barrick Group, said, "Our industry has been criticised for its short-term focus, undisciplined growth and poor returns on invested capital. The merged company will be very different. Its goal will be to deliver sector leading returns, and in order to achieve this, we will need to take a very critical view of our asset base and how we run our business, and be prepared to make tough decisions. By employing a strategy similar to the one that proved very successful at Randgold, but on a larger scale, the New Barrick Group will leverage some of the world's best mines and talent to create real value for all stakeholders."

Ownership of five of the world's top ten tier one gold assets include Cortez and Goldstrike in Nevada, north America, Kibali in the Democratic Republic of Congo (45 per cent), Loulo-Gounkoto in Mali, (80 per cent) and Pueblo Viejo in Dominican Republic (60 per cent).



The merger is expected to close by the first quarter of 2019.

Image Credit: Bullion Vault/Flickr

REAL-TIME BLAST BLOCK DATA REPORTING FROM BME

Getting real-time data from a blast block during drilling, charging and stemming operations is difficult with traditional manual reporting systems – but BME says it has changed that with its XPLOLOG system.

By allowing on-site personnel on the block to enter major parameters electronically using a mobile hand-held device, XPLOLOG gives managers the power to improve the quality of blast preparation – leading to better blasting results and more profitable mining.

According to Dr Rakhi Pathak, product manager at BME, the main advantage is that information about each hole can be easily captured on the device and will upload to a centralised database as soon as a data network is available.

"This ensures quick and seamless integration of data, removing the time lag and reducing the chances of data-related errors in the capturing phase," said Pathak. "Decisions can then be made timeously about any issues picked up in the data – before the blast is detonated."

The user can upload their survey and blast designs to the central XPLOLOG database, and these can, in turn, be downloaded onto all the hand-held devices out in the field. The database also automatically synchronises all data coming in from the blast blocks.

"Our system is designed to be very simple to operate – both to upload and download data – as well as for the whole mine to gain a holistic picture of exactly what is happening on the blast blocks," she said. "The most important part of the system is that it presents all the data on a dashboard for management decision-making."

A mine blaster can use the system to closely monitor the activity and performance of the various teams responsible for drilling, charging and stemming – which can help to control the utilisation of major resources."

CONSISTENCY CALL FOR SUSTAINABLE REPORTS

Mining companies including Anglo American Platinum (Amplats) need to disclose the impact of their activities more consistently than they currently do in their sustainable development reports (SDR), according to Bench Marks Foundation.

Speaking at the launch of its latest study in its Policy Gap series, "Critical Analysis of Amplats Sustainable Development Reporting (SDR) from 2003 to 2015", executive director of Bench Marks, John Capel, said that the report had highlighted many shortcomings in Amplats' sustainable development reporting.

However, he hoped that the report would be seen as a "positive contribution" to assist Amplats and other mining companies to develop an ever-deepening and broadening understanding of sustainability "so that, in the end, all stakeholders, including communities and their dependents, will benefit from the extraction of our natural resources."

► BRIEFS



Image Credit: Kal Tire

Kal Tire's gravity assist system receives top honours at Electra Mining.

Kal Tire wins top award

Kal Tire's gravity assist system (GAS) has received top honours in the category of international mechanical and technology innovation at Electra Mining Africa in Johannesburg from 10-14 September. This is the first year Electra Mining Africa is launching these awards to recognise new technology and innovations coming from both within South Africa and internationally.

Kal Tire focuses on developing solutions to improve safety and create less time in tyre bays.

SA cabinet approves mining charter



Image Credit: Government/ZA

The South African government has approved the latest mining charter.

The South African government has approved the latest version of the mining charter, detailing requirements for black ownership levels, according to local reports.

"The mining charter was deliberated upon and indeed cabinet has approved the mining charter," said communications minister, Nomvula Mokonyane.

There could still be legal challenges to the mining charter if companies disagree with the contents.

Aury Africa offers value-added screening service for quarrying sector

Innovative screening solutions provider Aury Africa can advise quarry operators on the correct screen size to maximise operational efficiency.

The manufacturer produces a complete range of high-quality vibrating screens for the coal and minerals-processing industries. Banana vibrating screens are available in single- and double-deck configuration, from 1.8 m x 4.8 m up to 4.8 m wide and 8.5 m long.

Horizontal vibrating screens are available in single- and double-deck configuration, from 1.2 m x 2.4 m up to 4.3 m wide and 8.5 m long. High-frequency vibrating screens are available from 0.9 m x 1.8 m up to 2.4 m x 3.7 m.

Image Credit: Aury Africa



Image Credit: Aury Africa

Circular motion vibrating screens are available in single- and double-deck configuration, from 1.8 m x 3 m up to 3 m x 6.1 m. Flip flop vibrating screens are available in single-, double- or triple-deck configuration, from 1.5 m wide up to 12 m long.

Aury Africa is also able to supply a range of exciters to fit most OEM screen types. Consumable products available include intertank/interstage cylinder screens for classification, sieve bends and static panels for separation, and centrifuge baskets.

"The fact that we can access technical expertise from our international group is a major advantage for our customers, as we have extensive experience coupled with expertise, due to having worked with vibrating equipment in the mining industry for many years," Aury Africa director Sydney Parkhouse said. Another major benefit for local quarry customers is that Aury Africa can provide bespoke solutions, in addition to having a standard equipment range.



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Manganese test programme gets underway in Togo

The mining site in northern Togo.

Image Credit: Keras Resources

Russell Lamming, CEO of Keras Resources, talks to *African Review* about how its bulk sampling testwork programme in Nayega, Togo, could help to transform the local economy.

Keras Resources has kicked off its US\$1.5mn bulk sampling testwork programme at the Nayega Manganese Project in northern Togo.

At the beginning of September open pit mining commenced on the 10,000 tonne bulk sampling testwork programme using excavators, front-end loaders and haul trucks, which were supplied by Carriere Mine Travaux Public (CMT), Keras's mining and logistics contractor.

The deposit covers 2.2km by 500m and averages 3.3m thick.

"With mineralisation at surface, no overburden and an effective zero strip ratio, it is a relatively low-cost mining process," Russell Lamming, CEO of Keras Resources, told *African Review*.

"We are very pleased with how phase one of the bulk sampling programme in Togo is progressing, which is effectively ahead of

schedule with regards to the mobilisation of CMT and all its equipment. We would be able to progress even quicker if we weren't constructing our own processing plant."

“ We have budgeted just over US\$4/dmtu or US\$150 per tonne to produce manganese ore ”

RUSSELL LAMMING CEO OF KERAS RESOURCES

Keras Resources awarded Johannesburg-based engineering house Appropriate Process Technologies the contract to fabricate the 20 tonne per hour scrubber plant which is expected to be commissioned at the beginning of November.

The run-of-mine ore will be

screened before being processed through the scrubber plant, with the product transported to Port Lomé for shipping. CMT will be responsible for transporting the product from Nayega to the Lomé

"We've had very constructive conversations with the Togolese Ministry of Mines and other regulatory bodies, which culminated in this bulk sample. This is a critical step towards commercial mining."

Keras Resources is waiting to see if the government will award it with an exploitation permit in order to proceed towards commercial production.

Lamming explains, "Currently we are not a commercial venture. However, as we are operating and managing the bulk sample, we are being paid a management fee and all of our costs including our overheads are paid for, which is very important for an exploration company. This means we haven't had to go to shareholders to look for money to cover our general running costs. We have budgeted just over US\$4/dmtu or US\$150 per tonne, including capex and infrastructure,

bulk handling quay in mid-January.

Metallurgical furnace testwork of the 10,000 tonnes of ore will be carried out by a major manganese alloy producer to assess the quality of the ore in its smelting facilities.

Keras Resources is confident the low-capex bulk sampling operation will produce high value manganese.



Image Credit: Keras Resources

Left to right: Bulk material mined using excavators and manganese orebody.

to produce the bulk sample manganese ore and get it to FOB status. We plan to produce a 35 per cent manganese ore which, if we were a commercial operation, would currently sell for around US\$200 per tonne. Those are decent margins and that's one of the reasons why we want to develop this project in Togo."

The Togo government will have a 10 per cent free-carry on the award of the Exploitation Permit, and Lamming stressed the importance of involving the local community in the project.

"The project will impact the local economy and add value to the country as a whole. We are already employing people from the local community to be involved in the bulk sample programme and we will look to increase their involvement when we are awarded the exploitation permit to progress into commercial production. In



Mining equipment supplied by Carriere Mine Travaux Public included Caterpillar 773D dump trucks.

Image Credit: Keras Resources

addition, there are various ancillary initiatives that we are looking at, that will add value to the community. We believe strongly that the local region should benefit from the project and we will make sure we make an impact within the Nayega community."

Manganese is used for the preparation of alloys such as steel, aluminium, batteries and fertilisers.

Keras Resources, which is an AIM-listed mineral resource company, also has a 36 per cent shareholding in Calidus Resources, which is exploring and developing the

Warrawoona Gold Project in Western Australia. The project currently has a JORC resource of 10.5Mt @ 2.11g/t Au for 712,000 ounces, and in August Calidus discovered a new gold strike extending over 1,000m. ■

By Samantha Payne



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Impoverished Djibouti has nothing to show for its wealth



Economists warn that Djibouti's debt is close to its GDP, but President Ismail Omar Guelleh has shown no sign of slowing down his affluent lifestyle.

With vast amounts of aid flowing into government coffers and its strategic position boasting one of the busiest shipping lanes, Djibouti ought to be among the wealthiest countries in the African continent.

However, the irony is that the tiny country situated in the eastern coast of Africa is among the poorest, characterised by a crippling sewage crisis that has led to an eruption of water-borne diseases such as cholera and typhoid.

Children are bearing the brunt of the crisis emanating from shocking levels of poor sanitation in the country of about one million people.

In rural areas, three out of four people have no access to toilets and relieve themselves in the bush.

In the city of Djibouti, home to half the country's population, a quarter of the population does not have any access to toilet facilities.

With the Horn of Africa a dry zone and with only 20 centimetres or less than 10 inches of rain a year, water is at premium in Djibouti.

Villages often rely on one or two wells, many of which are now contaminated with bacteria linked to human waste.

The 26,300 refugees from Eritrea, Ethiopia, Somalia and Yemen, have added to the problem.

However, Radwan Bahdon, the government's director of sanitation, said the situation was under control.

A new sanitation plant funded by the EU is functioning, he added.

"Until 2014, wastewater was discharged into the sea without treatment," said Bahdon.

Officials blame the administration of President Ismail Omar Guelleh, who has been in office since 1999 after succeeding his uncle, Hassan Gouled Aptidon, who ruled since the country gained its independence from France in 1977.

Guelleh, whose government is accused of human rights violations, retained power with 90 per cent of the vote in February this year.

Vast amounts of aid have flowed into the treasury over the years but the country has little, if anything, to show for it.

Critics accuse Guelleh and his family as well as closest advisors of having significant clout in the economy.

Despite the grinding poverty afflicting the majority, Guelleh recently flew to China in a presidential jet.

Economists warn that Djibouti's debt is close to its entire GDP, but Guelleh has shown no sign of slowing down his affluent lifestyle.

"In Djibouti, we are confronted by a family

dynasty built on the suffering of almost one million of our people," opposition leader, Daher Farah, said of the impoverished country.

Despite its tiny size as the eighth-smallest country in Africa, at 23,200 km², it is influential.

It has the USA's only permanent military base in Africa, Camp Lemonnier, not far from the presidential palace.

France has its largest unit of the Foreign Legion in Djibouti.

Last year, China opened its first overseas military base in Djibouti.

Regarding trade, Djibouti is situated along one of the world's busiest shipping lanes. It is the only route between the Indian Ocean and the Suez Canal, an entry point between Africa, India and the Middle East.

The government earns millions from passing ships. However, earlier this year, Guelleh signed a decree stripping Dubai firm, DP World, of its 50-year contract to manage the container port.

When a London Court of Arbitration ruled in favour of DP World, the government issued a statement it would not recognise the verdict.

The defiant move raised fears that Guelleh would take similar action to take back Camp Lemonnier.

Source: CAJ News Africa

Advertiser's Index

Aksa Jenerator Sanayi AS	11	Kirby Building Systems Kuwait SAK	33
CAGS Management Services DMCC	68	Konecranes (Pty) Ltd	59
Caterpillar Inc - Energy	45	Linz Electric S.p.A.	47
Caterpillar SARL	57	MB S.p.A.	63
CIFA S.p.A.	55	Metalgalante S.p.A.	61
Clarke Energy Ltd	49	Mytilineos S.A.	67
Deep Sea Electronics PLC	39	Nuba Screening Media S.L. (SIM 2018)	65
DMG World Media (Dubai) Ltd (The Big 5 2018)	51	Oak Plaza Accra	17
Eko Hotel and Suites	53	Orange	23
Elsewedy Electric	35	Societe Internationale des Moteurs Baudouin	9
F G Wilson	7	Sollatek (UK) Ltd	43
GCNET (Ghana Community Network Services Ltd)	27	Standard Bank (Stanbic)	21
Himoinsa	Cover wrap	Tranos Contracting Limited	2
IIR Exhibitions (Electricx 2018)	29	Volvo Construction Equipment AB	5, 15
Inmesol SL	13	Volvo Penta, AB (VPEN)	37
Iveco SPA	31	Zest WEG Group Africa	41

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