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African Review

of BUSINESS and TECHNOLOGY

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Inset picture : Stephen Williams

Editor: Luke Barras-Hill
Email: luke.barras-hill@alaincharles.com

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

Group Editor: Georgia Lewis

Publisher: Nick Fordham

Publishing Director: Pallavi Pandey

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

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

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

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

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

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

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

Middle East Regional Office: Alain Charles Middle East FZ-LLC, Office 215, Loft No 2/A, PO Box 502207, Dubai Media City, UAE,
Tel: +971 4 448 9260, Fax: +971 4 448 9261

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

Subscriptions: circulation@alaincharles.com

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Editor's Note

Welcome to the October edition of *African Review of Business and Technology.* I'm delighted to take over the editorial reins at the market leading magazine for Africa's senior executives and leaders across government, business and industry.

The title celebrates its 52nd year of publication in 2016 and it comes at a time of evolution across sectors including construction, power, transport and technology.

In this issue, we hear from Afreximbank's Dr Hippolyte Fofack on the mechanisms for improving intra-African trade. Meanwhile, in our Business report on page 22, we focus on the dynamism of foreign direct investment flows into the continent with a look at new reported projects.

The continent's economies and democracies –many of which remain economically, institutionally and infrastructurally fragile due to, among other factors, the cyclical and perpetual shift in commodity pricing – are continually adapting to change.

As a result, *African Review* will continue to inform, predict and react, reporting objectively and dispassionately on trends and issues that matter to our discerning readership.

Watch out for some exciting developments in the coming months across print, digital and online and please reach out to me with your comments and suggestions via email and social media.

In the meantime, I look forward to meeting as many of you as possible as quickly as possible in the months ahead to forge what I believe will be mutually beneficial and long-lasting business relationships.

Luke Barras-Hill, *Editor*

Contents

Long-term fundamentals to power economic growth in Africa

McKinsey Global Institute's new report 'Lions on the move II: Realising the potential of Africa's economies', reveals that while Africa's overall growth has slowed, its long-term fundamentals are strong, creating potential for future economic growth.

> "Business spending in Africa is expected to grow from US$2.6tn in 2015 to US$3.5tn by 2025"

According to the report, growth in the 11 economies accounting for 60 per cent of African GDP, including the continent's major oil exporters – Egypt, Libya, and Tunisia, has slowed sharply. On the other hand, the remaining economies generating 40 per cent of African GDP have recorded an acceleration in their annual growth rate from 4.1 per cent in 2000–10 to 4.4 per cent in 2010–15.

The report notes that the overall outlook is positive, with the IMF projecting that Africa will be the world's second-fastest-growing region in the period to 2020.

Identifying opportunities for growth in African economies, the report states that Africa has potential to nearly double its manufacturing output from its current value of US$500bn to US$930bn in 2025. Three-quarters of this potential is expected to come from Africa-based companies catering to fast-growing demand within Africa, while growth in exports would contribute to the remaining one-quarter of the growth. Business spending is expected to grow from US$2.6tn in 2015 to US$3.5tn by 2025.

The report points out that accelerated industrialisation could lead to a proportional increase in productivity and the creation of between six million and 14 million stable jobs over the next 10 years.

One of the key fundamentals predicted to bolster Africa's economic growth is the continent's urbanisation rate, which is the fastest in the world. Africa will also have the biggest working-age population in the world of 1.1 billion by 2034, surpassing both China and India. The abundance of Africa's natural resource reserves, some of which are the largest in the world, is another factor that could underpin its economic growth, the report states.

EGYPT-SAUDI ARABIA INTERCONNECTION LINK PROJECT APPROVED

The Egyptian parliament has approved Egypt and Saudi Arabia's cooperation agreement, which will establish a national electric grid connection between the two nations. The agreement, which was signed between the heads of the two countries in Cairo in November 2015, will be financed by a loan from the Kuwaiti Fund for Arab Economic Development.

The three stations will be linked via aerial lines and naval cables in the Gulf of Aqaba (Photo: Aryut Tantisoontornchai/Shutterstock)

The project is aimed at boosting the electricity generating capacity of both countries. It will help them exchange energy in peak hours, to a maximum of 3,000MW, and help them export surpluses in electricity. According to the report, the two electricity grids will be interconnected via three stations - one in Badr, Egypt and the other two in the Saudi Arabian cities of Medina and Tabuk.

EGYPT SEEKS CHINESE INVESTMENTS IN NATIONAL DEVELOPMENT PROJECTS

Egypt is seeking further Chinese investments in its ongoing national development projects, while considering China as one of its most important strategic partners, said Egyptian investment minister Dalia Khorshid.

In an interview with the Chinese news agency Xinhua the minister said that Egypt is looking for more Chinese investments, particularly in the fields of energy, transport and infrastructure. She also pointed out Chinese interest in projects such as the Suez Canal Corridor Development, establishing a new administrative capital city, and reclaiming 1.5 acres of desert lands.

Egyptian President Abdel-Fattah el-Sisi recently attended the Group of 20 (G20) two-day summit in Hangzhou at the invitation of his Chinese counterpart Xi Jinping.

Khorshid noted that the summit served as a platform to promote investment opportunities in the country.

"It was also a great chance to present key reforms being conducted by Egypt to create a better investment climate and attract more foreign investments," Khorshid pointed out. To strengthen ties between the two nations, Egypt has established a special cabinet unit for Egyptian–Chinese relations and a committee with two Egyptian ministers of trade and investment, the Chinese minister of trade, and the head of China's National Development and Reform Commission.

Khorshid added, "The ministerial committee met in Beijing in July and agreed on a number of projects in energy, transport, housing and industry. Currently, around 1,260 companies operating in Egypt involve Chinese shareholders, with a total capital of about half a billion US dollars.

Bilateral trade volume between the nations reached US$12bn in 2015 and about US$5.7bn in the first half 2016.

BRIEFS

Algeria and Russia to boost energy cooperation

Algeria and Russia have given new impetus to their energy cooperation by speeding up the implementation of common projects, energy minister Noureddine Boutarfa said in Moscow following a meeting with his Russian counterpart Alexandre Novak.

"During our talks, we stressed the need to speed up the implementation of some projects. Russia expressed readiness to contribute to the development of Algeria's hydrocarbons program," Boutarfa said.

He noted that this cooperation will be implemented through partnerships and Russia may assist Algeria in tenders for building and services.

Russia has also expressed willingness to assist Algeria in training in the nuclear field.

'Green mosques' for a clean Morocco

The mosques will be fitted with photovoltaic systems (Photo: Foxbat/Shutterstock)

Morocco, the host country of the 22nd UN conference on climate change (COP22), has announced plans to fit its mosques with energy saving light bulbs, solar thermal water heaters and photovoltaic systems.

The initiative, which has been titled 'green mosques', is part of the North African strategy to encourage renewable energies. Six hundred "green mosques" are to be created in the country by March 2019 in a national consciousness-raising initiative that aims to speed the country's journey to clean energy.

Digital payments drive economic modernisation in Tanzania

Digital payments could boost tax revenue by nearly US$500mn each year and drive economic modernisation in Tanzania, a United Nations study has revealed.

The study, conducted by the United Nations-based Better Than Cash Alliance, provides findings about the large potential gains for governments, businesses and citizens through digitising payments.

The study illustrates that digitisation of tax payments has created greater transparency between the Tanzanian government and its people (Photo: Khalfan Mlulu/Better Than Cash Alliance)

The study says that by digitising the payments made to the government, Tanzania can empower its tourism sector by reducing economic leakage from cash payments, such as conservation park entry fees, by over 40 per cent, to support investment and employment.

The country has also successfully cut bureaucratic inefficiencies, including reducing import customs clearance times from nine days to less than one day. The study notes that by digitising tax payments, which provides electronic proof of payments and protects people against fraud, the country has also achieved increased transparency between citizens and governments.

Better Than Cash Alliance managing director Ruth Goodwin-Groen said, “Tanzania’s results in driving the shift from cash to digital payments are very impressive. The country has developed significant experience that has led it to achieve gains in revenue at double-digit rates, while also delivering social benefits for its citizens. Tanzania is building a firm foundation for strong and inclusive growth and we look forward to further progress.”

The study also provides important insights on how further expanding digitisation of payments can fast-track in Tanzania’s economic modernisation. Digitising value-added tax payments and supporting formalisation of businesses could increase tax revenue in Tanzania by at least US$477mn per year. This is significant given that Tanzania’s total GDP is around US$47bn and its tax/GDP ratio is only 12 per cent.

Other countries in the region have initiatives to digitize payments and, while many are in the early stages of their transition, the benefits are quickly being realised and becoming evident, the report said.

UGANDA SET TO OPEN ITS FIRST GOLD REFINERY

The Ugandan company African Gold Refinery Limited (AGRL) has announced plans to open the East African country’s first gold refinery by the end of this year to process raw gold produced mainly from the region.

The project is back by the Belgian gold refinery Tony Goetz NV. According to AGRL, the refinery cost US$20mn to set up and would begin with an output capacity of one tonne of pure gold per month.

Richard Kaijuka, chairman of AGRL, said his company had built a processing plant in Entebbe, about 45 km south of the capital Kampala. “The focus is regional, we are looking at gold from the entire region, from Tanzania, from DR Congo and other countries,” Kaijuka said.

Uganda’s mineral reserves are generally viewed as under exploited as although there are gold deposits, it has no big commercial mine involved in production. However, the country serves as a transit point for gold exports from the neighbouring DR Congo and Tanzania, which have large reserves.

MASTERCARD EYES ETHIOPIA’S US$3BN REMITTANCE INDUSTRY

MasterCard, eServGlobal and BICS have partnered with the Commercial Bank of Ethiopia (CBE) to launch a new remittance service, HomeSend, in Ethiopia.

HomeSend is a joint venture between Mastercard, eServGlobal and BICS that enables business-to-business cross-border and cross-network transfers.

Consumers can send money to and from mobile money accounts, payment cards, bank accounts or cash outlets, regardless of their location or that of the recipient. It is free for receivers, accessible to anyone with a mobile number, and empowers the sender to transfer funds at a low cost through the HomeSend secure network of money transfer operators and banks.

According to Mastercard, the new service will allow more than 100mn Ethiopians to send funds directly to any mobile number in the East African country.

The new service will be available before the end of the year (Photo: Valeri Potapova/Shutterstock)

Estimated to be a US$3.5bn industry in Ethiopia, remittance services provide citizens with access to a safe and convenient financial solution, bridging the gap for those previously excluded from the formal financial sector.

“We are committed to helping develop a more inclusive economy, and displacing cash in Ethiopia and across Africa. It’s through digital payment solutions such as HomeSend that we are financially empowering people who need it the most,” said Mastercard division president, sub-Saharan Africa, Daniel Monehin.

BRIEFS

Kenya receives US$10mn grants for energy sector

Kenya has received grants amounting to US$10mn for the energy sector from the US government. The agreements were signed in New York and witnessed by deputy president William Ruto, who stated that the United States Trade and Development Re-opening Agreement portfolio in Kenya is about to become the largest in the sub-region.

Ruto added that the agreements in the renewable energy sector resonate directly with President Barack Obama's legacy Power Africa initiative which, at full implementation, is expected to contribute immensely to the increase and diversification of power generation across the African continent. He said the Kenyan government was committed to providing affordable and competitive electricity across the entire country within very strict time deadlines.

Mozambique and Angola sign business networks MoU

Mozambique has signed a MoU with Angola aimed at developing business networks, with a focus on oil, natural gas, logistics and agribusiness industries.

The document was signed by Angola Industrial Association (AIA) deputy president Eliseu Gaspar, and the Confederation of Economic Associations of Mozambique (CTA) head Rogério Manuel.

A press note from the Angola Chamber of Commerce and Industry (CCIA) stated that the MoU was signed in Maputo, Mozambique and is meant to consolidate the cooperation between the two countries. The deal will also promote and intensify the establishment of strong relations through the exchanges in technical-professional, economic and training areas.

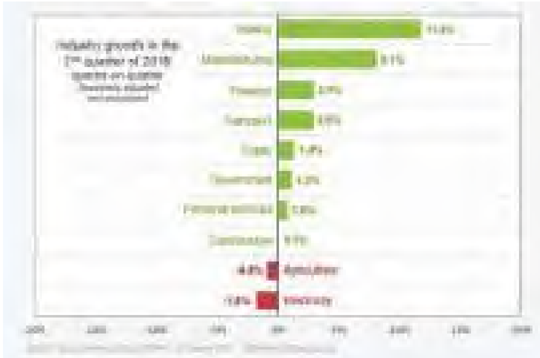
Mining and manufacturing buoys Q2 GDP rise in SA

Mining and manufacturing contributed over half of a *3.3% second quarter GDP rise in South Africa, according to research from Statistics South Africa.

The growth is the fastest quarter-on-quarter rise in economic activity since the fourth quarter of 2014.

An uplift in the production of motor vehicles helped manufacturing rise by 8.1%, the highest expansion since the fourth quarter of 2013.

This was corroborated by data from the expenditure side of the economy, which showed a marked rise in exports of passenger and goods-carrying vehicles.



Mining surged by 11.8% in the second quarter of 2016 (Photo: Gross Domestic Product, 2nd Quarter 2016, Statistics South Africa)

"With respect to manufacturing, growth was also reported from the petroleum, chemical and food and beverage industries," Michael Manamela, Statistics South Africa chief director, national accounts told African Review.

After contracting by 18.1% in the first quarter of 2016, the mining sector recovered strongly in the second quarter, rising by 11.8%, due to increased production in platinum and group metals (PGMs).

Agriculture posted its sixth consecutive quarter of economic decline, falling in real value terms from $5,594,084,520 in the fourth quarter of 2014 to $4,795,956,780** in the second quarter of 2016.

Electricity, gas and water also fell by 1.8%, as a result of subdued distribution in the country.

Distributed electricity was 2% lower in the first seven months of 2016 compared with the first seven months of 2015, according to the report.

Year-on-year GDP growth in the second quarter of 2016 was 0.6%, with real GDP increasing by 0.3% in the first six months of 2016 compared with the first six months of 2015.

**Growth rates quarter-on-quarter, seasonally adjusted and annualised*

***Constant 2010 prices, seasonally adjusted and annualised.*

HONOURING SMALL BUSINESSES IN SA

Entrepreneurs and small business owners will once again have the chance to scoop one of the highly coveted South African Business Awards when the event returns next month.

Now in its eighth year, the National Small Business Chamber (NSBC) run event recognises the tireless work and outstanding achievements of the small business community in South Africa.

The awards comprise four categories: National Small Business Champion, National Entrepreneur Champion, Woman in Business Champion, and Young Entrepreneur Champion.

Entries to the awards officially close on 7 October, with the winners announced on Thursday 10 November at a special gala event at Montecasino in Fourways.

Mike Anderson, founder and CEO of NSBC said, "More than ever before, small businesses have a critical role to play in job creation, poverty alleviation, service dellivery, and wealth creation."

HIMOINSA TO OPEN NEW SA SUBSIDIARY OFFICE

Himoinsa has announced it is to open a new commercial office in Port Elizabeth, South Africa in the fourth quarter of this year.

The new unit will cover the Zambia, Zimbabwe, Malawi, Botswana, Namibia, Lesotho, Swaziland and South Africa markets.

"Our objective is to be close to the market and to bring the needs of the local market to our factory in Europe," said Guillermo Elum, sales & marketing director for Himoinsa in EMEA (Europe, Middle East and Africa).

"That is how we guarantee our customers a made-to-measure product and rapid service."

A local management team will provide the business with local employees who hold significant experience in power generation in the region.

"Our objective is to be close to the market and to bring the needs of the local market to our factory in Europe," adds Elum.

Top quality products, equipment with a two-year warranty, and a 24/7 spare parts technical service from the company's factories in Europe will supply the South Africa market.

Himoinsa possesses a successful 35-year track record in South Africa, with nearly twenty distributors located on the continent.

The company says it has identified Africa as "an exciting market with excellent potential for growth, where the customer requirements are well suited to the Himoinsa product range and superior service".

The company explains that South Africa is one of the continent's leading importers of generator sets, importing $155 million worth of the equipment in 2015, according to sources.

This positions the country as the leading source of demand in the electricity generation markets, followed by Algeria, Egypt, Nigeria and Libya.

BRIEFS

Multotec says its often difficult to determine the extent of wear on linings (Photo: Multotec)

Multotec focuses on wear solution

South African ceramic tile manufacturer Multotec Wear Linings has launched a new product to monitor wear on chute linings.

The Multotec Green Dot Tile boasts an integrated wear indicator, allowing easier visual condition monitoring for customers.

Mark Jarrett, national sales manager of Multotec Wear Linings said, "The Green Dot Tile features a two-tone insert in the centre of the tile and as the tile wears down so does this insert."

Kwatani and Derrick Corporation have joined forces (Photo: Kwatani)

Kwatani and Derrick Corporation promote mining best practice

South African supplier Kwatani has partnered with Derrick Corporation to represent the latter's range of engineered fine screening solutions in selected mining regions.

The collaboration positions Kwatani as a single source for state-of-the-art screening solutions for all commodities.

Kim Schoepflin, managing director of Kwatani, says the company's product development aligns well with Derrick Corporation's R&D philosophy.

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Zambia
SARO AGRO Industries Ltd., amin@saroagri.co.zm

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Head Office: Laxmanrao Kirloskar Road, Khadki, Pune - 411 003, India, Tel: +91 20 66084424,
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Kenya Office: Kirloskar Kenya Ltd. Tel: +254 20 6536632, Email: rspatil@kirloskar.co.ke,
South Africa Office: Joburg Industrial Trading SA (PTY) Ltd. Tel: +27 (0) 115536900, Email: kirsons@kirloskar.co.za

IFC and DFID partner to improve electricity access in Nigeria

World Bank Group member IFC and the United Kingdom's Department for International Development (DFID) have partnered to improve access to electricity for small and medium enterprises in Nigeria.

The partnership aims to facilitate the deployment of off-grid and embedded solar systems in commercial and industrial sectors of the country.

The ultimate goal is to help corporates and SMEs to have better and more reliable access to electricity, utilising the country's abundant solar resources.

The partnership is expected to help develop business solutions for the emerging solar market, especially solar PV technology investments (Photo: Gencho Petkov/Shutterstock)

Through this partnership, IFC's Off-Grid and Embedded Solar Market Development and Finance Program and DFID's Solar Nigeria Program are launching a new project in Nigeria for solar market development and finance. One of its major components will be to provide technical support to local financial institutions.

DFID Nigeria head of office Ben Mellor said, "The UK Government is committed to helping increase investment in off-grid energy and accelerating the delivery of solar energy systems that will help improve access to energy for more businesses. As access to energy is one of the most critical business needs in Africa and particularly Nigeria, the UK's Department for International Development is determined to assist in bringing solar technology financing solutions to smaller businesses and corporates and we are working with IFC to help implement these solutions."

IFC country manager for Nigeria Eme Essien Lore said, "The solar market has the potential for quick wins in bringing access to electricity for more businesses as it takes less time to install. It also enables production of electricity at the point of need, which eliminates transmission losses to a great extent. We are working with DFID to accelerate access to electricity for more businesses and help contribute to economic growth in the country."

The initiative is being launched at a workshop that will share market study findings, present the key components of the program implementation phase, and collect feedback from stakeholders.

AFDB PROMISES SENEGAL US$1.4BN IN FUNDING

The African Development Bank (AfDB) recently adopted the Country Strategy Paper for Senegal for the next five years (2016-2020), under which it has pledged US$1.4bn in funding that includes US$48.4mn in budget support for 2016.

Other possibilities include funding through Africa50, Africa Growing Together Fund and other Trust Funds.

The strategy is said to be aligned with the Emerging Senegal Plan (PSE), the country's development strategy for 2014-2035, and its Priority Action Plan 2014-2018. It is also in line with the AfDB's ten year strategy, which lays stress on inclusive and green growth while also focusing on what they call the 'High 5s' – light up and power, feed, industrialise, integrate and improve the quality of life for the people of Africa. The programme will support the promotion and modernisation of towns and the strategic implementation, monitoring and assessment of the PSE.

As a part of the pledge, the bank has also approved the US$48.4mn aimed at helping the Senegalese authorities in implementing the PSE, especially the programme to assist local development reform in support of the Emergency Community Development Programme.

WORLD BANK SUPPORT FOR SÃO TOMÉ AND PRÍNCIPE

The World Bank and the government of São Tomé and Príncipe (GoSTP) recently launched the country's Financial Sector Development Implementation Plan (FSDIP) for the period 2017-2019.

The plan is a sequenced roadmap of policy reforms and actions designed to develop the financial sector and enhance its contribution to the country's economic growth and poverty reduction.

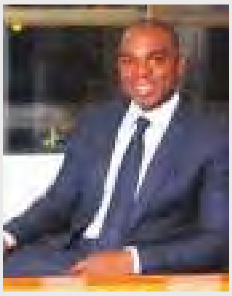
The strategy is intended to strengthen supervision of the financial sector in order to enhance soundness and stability of the system; increase financial inclusion by supporting the delivery of affordable financial services to a larger segment of the population; and upgrade critical financial infrastructure – particularly payment systems, credit reporting, and collateral registries for secured transactions to allow for a broader range of financial services.

"The ultimate goal (of FSDIP) is to increase the contribution of the financial sector to the reduction of poverty and promotion of shared prosperity in São Tomé and Príncipe," says World Bank country manager for São Tomé and Príncipe, Clara de Sousa.

The FSDIP is organised around four themes, which were discussed with the GoSTP, Central Bank (BCSTP), private sector stakeholders, civil society and international development partners, including the World Bank.

The objective of these themes is to broaden and make affordable the financial services available to individuals and firms, particularly micro, small and medium-sized enterprises (MSMEs) and low-income households.

BRIEFS



Zandre Campos, CEO, ABO Capital

Angola Capital announces rebrand

Angola Capital Investments (ACI), a leading international investment firm headquartered in Angola, has changed the title of its company to ABO Capital.

"ABO Capital is about seizing the many opportunities present throughout Africa" said CEO Zandre Campos. "We will continue to improve the economies and bring business to these countries. We also look forward to working in more emerging markets throughout the globe."

West Africa seeks funding for transport projects

At a recent meeting of the Economic Community of West African States (ECOWAS) in Abuja, Nigeria, the presidency of the regional organisation and a delegation from the China Development Bank (CDB) reviewed the main joint projects of West African countries. The president of ECOWAS, Marcel de Souza, drew attention to the fact that only 12 per cent of the trade in West Africa is between the neighbouring countries as a result of the lack of transport links, and called for support from CDB for roadway projects and initiatives in the energy sector and rice production, the stable food of the region's countries. Zeng Liqing, head of CDB delegation also expressed interest in strengthening cooperation in the region, citing the bank's previous efforts in financing 43 African countries' infrastructure, mining and energy sectors, among others.

Upcoming Events Calender 2016

OCTOBER

31 - 1 November

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Dubai, UAE
www.tmt.knect365.com

31 - 4 November

AFRICA OIL WEEK
Cape Town, South Africa
www.globalpacificpartners.com

NOVEMBER

1-2

IPAD RWANDA ENERGY INFRASTRUCTURE FORUM
Kigali, Rwanda
www.ipad-rwanda.com

2-3

AFRICAN REAL ESTATE & INFRASTRUCTURE SUMMIT
Cape Town, South Africa
www.african-real-estate-summit.com

2-4

AFRICA RENEWABLE ENERGY FORUM (AREF)
Marrakech, Morocco
www.africa-renewable-energy-forum.com

2-4

THE BIG 5 CONSTRUCT EAST AFRICA
Nairobi, Kenya
www.thebig5constructeastafrica.com

7-9

EAST AFRICA FESTIVAL OF ENERGY
Dar es Salaam, Tanzania
www.energynet.co.uk

8-11

WATER AFRICA AND WEST AFRICA BUILDING AND CONSTRUCTION
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FOODAGRO AFRICA
Nairobi, kenya
www.expogr.com

14-18

AFRICA COM
Cape Town, South Africa
www.tmt.knect365.com

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EAST AFRICA OIL & GAS SUMMIT (EAOGS)
Nairobi, Kenya
www.eaogs.com

17-18

16TH INTERMODAL AFRICA 2016
Mombasa, Kenya
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23-25

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VOLVO CONSTRUCTION EQUIPMENT UNVEILS AUTONOMOUS PROTOTYPE

The Volvo L120E wheel loader (Image source: Volvo CE)

Volvo Construction Equipment provided customers and members of the press with a sneak peak of its prototype autonomous wheel loader and articulated hauler at the Xploration Forum, which took place in Eskilstuna, Sweden between 9-14 September 2016.

The prototype wheel loader filled the prototype articulated hauler – before transferring its load to its destination and repeating the cycle. Testing of the machined revealed that the autonomous wheel loader could reach the equivalent of 70 per cent of that of a skilled operator's productivity levels when loading and unloading. This was not just for demonstration as the machine has also been used in a project for a Volvo Construction Equipment customer at an asphalt plant in Sweden.

"The demonstration machines were programmed to work together and carry out a specific set of actions on a pre-defined route," explained Jenny Elfsberg, director of emerging technologies at Volvo Construction Equipment.

TURNING WASTE MATERIAL INTO ELECTRICITY

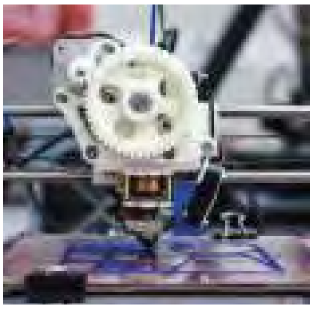
When even waste material can be used to produce energy, it's a win-win situation all round; waste from harvesting will be able to be used to produce electricity.

Across Africa, countries are committed to scaling up renewable energy production to meet their growing energy needs. However, this will require bold thinking and innovation to deliver affordable and reliable power solutions that can be rapidly deployed.

Africa's first grid-connected anaerobic digester plant on Gorge Farm in Kenya was developed by Tropical Power and is operated by independent power producer Biojoule. The Gorge Farm Energy Park, launched in August 2015, uses organic waste and sunshine to produce renewable power, both of which are plentiful on the 800ha vegetable farm.

Currently only 23 per cent of Kenya's population have access to electricity, says The World Bank, yet access to energy is a key imperative for economic development.

3D PRINTING ON FOCUS AT ELECTRA MINING AFRICA



3D printing technology is used for rapid prototyping, functional prototyping, bridge tooling and production manufacturing (Image Source: Fotolia)

Electra Mining Africa 2016, the mining, industrial, electrical and power trade show held in Johannesburg from 12-16 September, showcased innovations in 3D printing and its application in the mining industry.

3D printing technology is used for rapid prototyping, functional prototyping, bridge tooling and production manufacturing.

Use of technology is proposed to stem the decline of productivity in the mining industry and improve efficiencies. With 3D printing (3DP) at the forefront of technological development, its use in the mining industry needs to be considered.

3D printing equipment company, Rapid 3D, discussed their real world engineering experiences using 3D Printing and looked at applications in the mining industry at the show.

KODAL EXPANDS EXPLORATION AREA IN MALI

Mines in Mali expand as Kodal's exploration efforts increase (Image source: Iamgold)

Mineral exploration company Kodal has signed an agreement to explore and acquire the Kolassokoro concession in Mali to boost lithium mineralisation.

Kodal has increased its exposure to the high-demand lithium market through the agreement to explore and acquire Kolassokora, a concession in southern Mali that is prospective for lithium mineralisation.

The concession is immediately adjacent to the recently acquired Madina project, giving Kodal 500 sq km of landholding with defined high-grade lithium targets

AGGREKO BRINGS 100MW OF ADDGAS-GENERATED POWER TO BENIN

Aggreko won the bid to supply Benin with 100MW of power for one year to help its rapidly growing industrial sector.

The one-year contract will support the country's national grid with energy generated from ADDGAS – an add-on technology, which substitutes a significant portion of diesel fuel with natural gas.

With an annual GDP growth of nearly six per cent and a rapidly expanding industrial sector, power demands across Benin are increasing exponentially. In its role as the national power utility and system operator in Benin, Société Béninoise d'Energie Electrique (SBEE) is working to bring high quality electricity to the country's 10mn inhabitants by increasing generation capacity and further developing transmission and distribution networks.

20MN CITIZENS TO BENEFIT FROM IDENTITY CARDS

Benin has experienced a surge in power demands (Image source: RNW.org)

An estimated 20mn citizens are set to benefit from comprehensive identity cards. Gemalto's eID card will help Cameroon's fraud crisis and will lead the world in secure civil documentation. Gemalto, a provider of digital security services, is supporting the General Delegation for National Security in Cameroon (GDNS), in tackling fraud and document counterfeiting with the deployment of Sealys Color in PC for polycarbonate eID cards, a first in Africa.

This innovative approach consists in laser engraving high resolution colour photos into the durable Sealys card body to provide Cameroon with the benefits of irrefutable proof of identity for its 20mn citizens.

Gemalto also contributes to the country's comprehensive identity modernisation programme with its Coesys enrollment solution, its personalisation platform implementing colour laser engraving technology and eID verification terminals.

"If you localise construction, money does not flow out of the country but circulates locally and creates jobs. Nuclear energy must help bootstrap our economy"

PHUMZILE TSHELANE
CEO, Necsa

"African central banks should have operational independence to pursue monetary policy goals and transparency"

MITSUHIRO FURUSAWA
deputy managing director, International Monetary Fund

""Today, connectivity on demand is the lifeblood of any airline, ensuring the smooth and rapid exchange of information needed to support effective operations no matter where in the world an airline operates, the size of their operation or their business model. We have used our global experience and presence to provide Kenya Airways with the latest communication solution that is able to cater to their own specific requirements"

HANI EL-ASSAAD
president, Middle East, India & Africa, Sita

"The country's liberalised economy and well developed legal framework set Zambia apart from its neighbours. The holding of [the ZamReal Property] forum in Zambia goes to underscore its attractiveness as an investment destination of choice in sub-Saharan Africa"

MPANGWE MUTWALE
commercial property finance specialist, First National Bank, Zambia

"Following the herd is not what Oakbay is about and we do things slightly differently. We seek to disrupt industries and this makes us unpopular among the establishment"

NAZEEM HOWA
chief executive of Oakbay Investments

"Solar power in Nigeria has significant long-term potential, and we want to take part in the development of this new market. This investment is the culmination of an extensive review during which the Nova Scotia Power project stood out thanks to its exceptional fundamentals."

RAYMOND CARLSEN
CEO, Scatec Solar

"The complexities and challenges facing Africa's oil and gas industry have become daunting. As uncertain regulatory frameworks, taxation requirements and corruption continue to rank at the top of the industry's challenges in Africa, it also high time that governments make significant changes"

CHRIS BREDENHANN
Oil & Gas Advisory Leader, PWC Africa

"It's not so much about ethical questions but delivering on services so investors, entrepreneurs and businesses can continue invest in public institutions to sustain growth"

GEORGES DESVAUX
managing partner at McKinsey and Company.

"I had lunch in Nairobi with Joseph Mucheru, the Kenyan Cabinet Secretary of Information and Communications. We talked about internet access and his ambitious plans for connecting everyone in Kenya"

MARK ZUCKERBERG
CEO, Facebook

"Together, we will help Ghana move towards low emissions and low carbon investments, build Ghana's resiliency to climate change, and safeguard Ghana's environment for the long term"

ROBERT P. JACKSON
US Ambassador to Ghana

"Cloud adoption in Africa is growing at a rapid pace as organisations now realise that cloud offers them speed, value and better ROI"

JANUSZ NAKLICKI
Vice President of Russia, Africa and Central Europe, Oracle

Building intra-African trade by improving payments

Dr Hippolyte Fofack, chief economist and director for research at Afreximbank, on developing the continent's commercial finance systems

It might be thought that Africa's interests are best served by exporting internationally to the rest of the world and earning valuable currency, but more progressive thinking sees intra-African trade as an equally, or possibly an even more vital, aspiration. Despite the proliferation of regional economic communities in the continent, Africa has been primarily trading with the outside world since the turn of the 20th century, with the pattern of African exports and their destination continuing to be strongly influenced by the continent's historical links with the outside world.

However, in the last decade there has been a clear shift from these traditional partners to the emerging countries of China, India and Brazil. Even that trend in international trade, which has been extensively reported, has been slowly adding to Africa's existing challenges. This has led to an increased urgency in developing intra-Africa trade, led by the African Export-Import Bank (Afreximbank), the continent's most important financial institution in this regard.

This was explained by Dr Fofack, chief economist and director for research at Afreximbank, who reported to *African Review* that the bank has made this a strategic priority, recognising that the continent's internal trade is extremely low compared to the performance and penetration of the internal trade of other regions of the world. He said, "The European Union has 67 per cent inter-regional trade, and Asia 52 per cent, while Africa's is only 14 per cent of total African trade. Yet we have ample empirical evidence showing that by boosting intra-African trade or intra-African regional trade, we would reduce Africa's exposure to adverse global shocks. Intra-Africa trading would actually act as an absorber of global shocks."

Dr Hippolyte Fofack, chief economist and director for research, Afreximbank

Enterprises and economy

There is another huge benefit to greater intra-African trade as the continent's internal trading is mainly in manufacturing goods, while its external trade is mainly in commodities. Consequently, more intra-African trade would stimulate the development and the growth of Africa's manufacturing base. Fofack said, "This would enhance Africa's integration into the global economy and leverage its comparative economic advantages."

Fofack remarked, "We see the emphasis on intra-African trade financing as a key component of achieving the intra-African trade objectives. The key constraint to African trade in general is trade finance. The lack of trade finance has emerged as a significant non-tariff barrier to trade, especially in developing countries."

According to Fofack, the continent's small and medium-sized enterprises (SMEs) will face the greatest hurdles in accessing affordable trade financing. He said, "It is known that over 50 per cent of trade finance applications by SMEs are systematically rejected in developing countries, against just seven per cent for multinational companies. The rate of rejection in Africa itself is probably even higher. SMEs are at the bottom when it comes to trade finance."

Strategies for small firms

This is an unacceptable situation, and one that the Afreximbank is determined to rectify. The bank has devised a number of solutions, recognising that SMEs are the drivers of economic development.

What Afreximbank has done is develop a network of trade finance intermediaries, essentially correspondent banks within the continent that can handle the requests of smaller companies of up to US$2mn. At the same time, Afreximbank can directly support much larger corporations. Fofack said, "That has worked very well for us. Essentially, what we are doing is sharing the risk with other banks."

Fofack observes opportunities arising in the future, as a result of many international banks withdrawing from the continent. He seems to believe that it is a trend that will continue, but he is guarded about the prospects for Africa's indigenous banks to occupy the space that the multinationals will leave in their wake.

He stressed that multinational financial corporations are chiefly involved with Africa's export trade, not with intra-African trade, that "many large multi-national financial corporations are exiting the African trade space as a result of the demands of stringent Basel III regulations".

He also hopes that African financial institutions can be galvanised into a response by exercising their balance sheets and mobilising requisite finance.

He observed, "It is a real challenge and, because the financial institutions which are exiting did so without any warning to the continent, the adjustment process will not be easy. In the short term, there will be some cost within the trade finance area, but in the medium to long run we should see more of our own financial institutions increasingly exploring options for domestic and inter-African trade." ■

Stephen Williams

Tapping into Africa's unbanked

Barry Mansfield looks at unfamiliar obstacles faced by large institutions and startups alike as they seek to build roads into the African mobile banking sector

Traditional banking in Africa has failed – only 20 per cent of the continent's 1.2bn people currently operates a bank account or benefits from formal financial services. That reveals an incredible opportunity for companies looking to bank the unbanked, but successful entry will not come without a few hurdles. A market viewed as difficult, unchartered territory is fertile ground for innovative mobile and web-based upstarts looking to fill the gap.

Lenders in Africa face a distinct set of challenges, which large banks have struggled to understand. Instead, the solution has arrived in the form of Cape Town-based Jumo, which has partnered with mobile operators in Kenya, Tanzania and Zambia. They have a mission to gain access to data on how people use their phones. Its algorithms analyse a person's smartphone usage – the level of their spending on airtime, or how they operate their mobile money wallet – to establish a "Jumo score", which rates their creditworthiness. Users can then apply for loans from conventional lenders via Jumo and have the cash sent directly to their phone.

According to Andrew Watkins-Ball, Jumo's chief executive, a US$20 loan that can be secured without collateral in the middle of the night in an isolated village can mean the difference between transporting a sick person to hospital and the patient foregoing medical care altogether. Smartphone adoption is still very low in poorer regions, he says, meaning the technology has to work equally well on simple phones, or on older second-hand models.

Youthful aspiration

In the Global Attitudes Survey released by Pew Research Centre, younger generations across Africa are shown to be jumping at the opportunity to engage online. In Tanzania, those aged between 18 and 34 are 17 per cent more connected to the internet than their parents. This shoots up to an impressive 31 per cent in Nigeria and Kenya. Pew's research indicates that the connected youth are active on social media on a daily basis.

Closely tailored price comparison websites are helping Africans to make more informed purchasing decisions. According to Dewald Nolte, VP Business at Entersekt, this trend marks a considerable shift in how youngsters select products and interact with brands. It is obvious, he says, that banks must take heed and transform the way they engage with the younger generation accordingly.

Taking away the fear factor

Making use of technology that appears exceptionally simple to the user takes away the fear factor. When it comes to authentication, banks need to safeguard customers against the phishing threat and other digital fraud vectors, without the expensive and cumbersome use of one-time passwords. These may give the façade of robust security, but they are less effective and overly complicated, particularly for those accessing services on their phones. Removing complexities at the very outset of the transaction resonates with both the older and younger generations.

Nolte also believes that simplicity is the key to driving uptake of online banking in Africa. Having to read extensive warnings or instructions puts off many customers. Many will simply click through to the end of an instalment or process without actually being fully aware of the details – or this may again increase their mistrust of the service. Moreover, when an organisation uses text-heavy instructions, abandonment rates shoot up. When communicating instructions, the "keep it simple" rule stands out.

Companies need to understand that markets work differently. What may have worked in Botswana, may not be applicable to the Kenyan consumer. Mobile users engage with technology, language and their fellow citizens in vastly different ways from one market to the next – and that can encompass the tiniest details, including generational quirks. That is why banks need to adjust their user engagement. Working with partners who boast a long track record in a particular region enables a bank to extrapolate from those experiences, saving time and helping to avoid costly mishaps.

Innovate for the future

There are fears in the industry about African banks becoming simple transaction pipes. Nolte believes this eventuality can be avoided by extending maximum value to the customer – mainly via straightforward, intuitive user authentication, complete with excellent security, which should help to build trust with customers. That trust should enable banks to open up their channels and bolt on new services, leverage their merchant network and on-sell products – effectively making the transition to an aggregated merchant platform. Banks should then be well-placed to capitalise on a captive customer base and realise much larger economies of scale. ■

TOP SECURITY

By the end of this year, London-based bank Standard Chartered will launch biometric technology to customers in eight African nations so they can use fingerprints to access their mobile money – a process known as touch login – in place of usernames and passwords. This roll-out is projected to eventually reach five million people in Africa, Asia and the Middle East. The bank claims it will be a first in most markets with the biggest deployment of fingerprint biometric technology by any international bank.

Pending regulatory approval, touch login will launch by the end of 2016 in Botswana, Ghana, Kenya, Nigeria, Tanzania, Uganda, Zambia and Zimbabwe. It is already operational in Singapore, United Arab Emirates and India. It is also due to launch in China, Hong Kong, Malaysia and Pakistan. Fingerprint login was already made available in South Africa from May 2015 as an option for its mobile banking apps. The Payment Association of South Africa developed a standard for biometric interoperability in partnership with MasterCard and Visa.

Orange expands mobile financial services in Senegal, Mali, Côte d'Ivoire and Guinea

Telecommunications giant Orange has received electronic money establishment licenses (EME) in Senegal, Mali, Cote d'Ivoire and Guinea, strengthening its position as a major player in the African mobile financial services sector.

The winning of licenses comes during a period of significant growth in the mobile money services market within the Economic Community of West African States (ECOWAS), and against the backdrop of the Central Bank of West African States (BCEAO) publishing an update of the regulatory framework in relation to these services.

An Orange Money customer makes a transaction in Côte d'Ivoire (Photo: Orange)

The changes encourage telecommunications operators to obtain an EME license in order to conduct their mobile money operations within a broader framework of responsibility.

The EMEs obtained by Orange have been licensed by the central bank of each territory and are autonomous subsidaries controlled by the local telecom operator. They ensure the issuance, management and distribution of electronic money for Orange Money, and manage the compliance policy, with the EME effectively taking over this role from Orange's partner banks, which previously carried out this responsibility. Additionally, the EME coordinates requests to the central banks for the launch of new functionalities and monitors overall activity. This gives Orange greater autonomy and agility, making financial services an integral part of Orange's African operations. Orange has also set up CECOM, a dedicated organisation to provide risk management for the business scope of the EMEs.

"The licenses received from the central banks, together with our investment in the CECOM are testimony to our commitment to this diversification, which will benefit our customers who use Orange Money services several million times each day," said Marc rennard, deputy chief executive officer in charge of customer experience and mobile financial services. Orange expects to generate more than 200 million ($225 million) by 2018.

TECH AND MEDIA LEADERS MEET IN LAGOS

Leading strategy and investment heads from technology and telecom companies met in Lagos in September to discuss strategies for investment and regional growth at TMT Finance Africa. Google, Uber, Intel, Africa Internet Group, Vodacom, Airtel, Nokia and Etisalat were among the companies represented.

Leading investment banks were also present at the event, including Standard Bank, Citi, IFC, Barclays, Africa Finance Corporation, Access Bank and FNB, as well as private equity firms such as Convergence Partners, African Capital Alliance, ECP and Carlyle.

"Nigeria is fast becoming one of the most innovative and dynamic places in the world for technology and mobile connectivity," said Ben Nice, director, TMT Finance Africa in Lagos. However, he added that many companies still face challenges, such as a lack of adequate access to financing and he hopes events such as this one will help "get the dialogue going between the genuine decision-makers".

AFRICAN TRADE DEAL WITH EUROPEAN PARLIAMENT

The European Parliament has approved an agreement that grants duty-free access to the EU for products from Botswana, Lesotho, Mozambique, Namibia, and Swaziland, as well as improved market access for South Africa. Members of the European Parliament (MEPs) approved the deal by 417 votes to 216, with 66 abstentions.

The Economic Partnership Agreement (EPA) with the six member states of the South African Development Community (SADC) ensures immediate duty and quota-free access to their exports to the EU market. It also creates new regional opportunities through more flexible use of rules of origin.

Over 10 years, the African countries will liberalise 86 per cent of their trade with the EU, apart from Mozambique, which will liberalise 74 per cent with the exception of agricultural and fishery products.

At this stage, the EPA only covers trade and development cooperation but it leaves the door open for services, investment, intellectual property and public procurement. To mitigate possible negative impacts on the SADC countries, safeguards were added to the deal.

Safeguards include the EU undertaking not to subsidise its agricultural exports to these countries, and a list of trade-related areas that could benefit from EU development cooperation funding, although no money has been pledged at this stage.

In a July resolution, international trade MEPs advocated strengthening the monitoring of the EPA to ensure its benefits for the people of the SADC countries are maximised.

The deal will come into force once it is approved formally by the European Council and the text is ratified by the national parliaments of the six African states.The deal also replaces previous interim agreements based on unilateral trade preferences and complies with World Trade Organisation rules.

BRIEFS

Japan and Nigeria presidents meet

(Muhammadu Buhari, president of Nigeria (Photo: Chatham House/Flickr)

During a visit to Nairobi for the sixth Tokyo International Conference on African Development (TICAD), Shinzo-Abe, prime minister of Japan met with Muhammadu Buhari (oictured left), president of Nigeria. During the meeting, President Buhari expressed expectations towards investment by Japanese businesses and high level technology. Prime Minister Abe welcomed President Buhari's attendance at TICAD and indicated a willingness to cooperate with investment in Nigeria.

Nigerian money transfer boost

Ismail Ahmed, CEO, WorldRemit (Photo: WorldRemit)

The Central Bank of Nigeria has approved 11 international money transfer operators, thus restoring mony transfers to Nigeria.
Ismail Ahmed, founder and CEO of WorldRemit, one of the 11 operators, has commended the decision. He says it helps to build an "enabling environment and level playing field for international money transfer services to Nigeria" and praises the increased competition that has been created as a result.

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Foreign investment in global financial markets

The commercial connections between financiers, enterprises and emerging economies

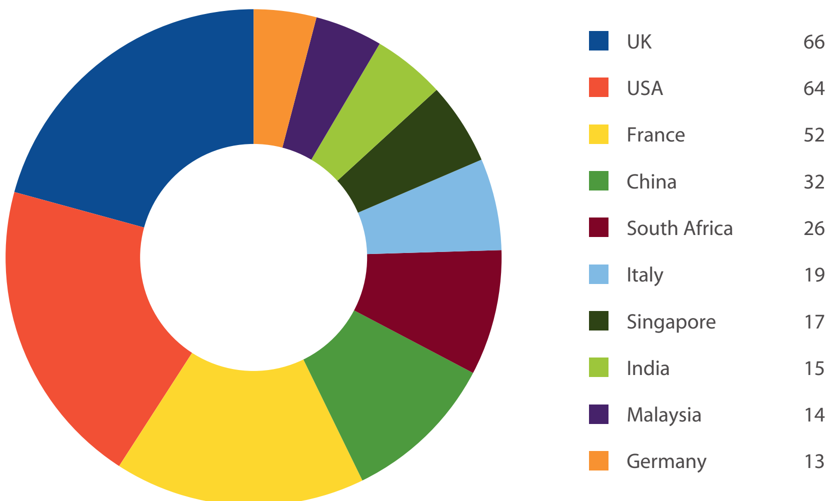
Inward foreign direct investment (FDI) flows to Africa during 2015 were estimated at between US$54-57.5bn, with some variance between sub-regions. According to The African Development Bank (AfDB), FDI in East Africa amounted to US$8.9bn since 2010; West Africa (US$9.7bn); Southern Africa (US$12.9bn); and Central Africa (US$5.4bn). The leading 2015 FDI destinations based on United Nations Conference on Trade and Development (UNCTAD) data were Angola (US$8.7bn); Mozambique (US$3.7bn); Ghana (US$3.2bn); Nigeria (US$3.1bn); Ethiopia (US$2.2bn); South Africa (US$1.8bn); Sudan (US$1.7bn); Congo, DRC (US$1.6bn); Zambia (US$1.6bn); Tanzania (US$1.5bn); Congo (US$1.4bn); and Kenya (US$1.4bn); respectively.

While advanced countries, notably the UK, the US and France, are important FDI providers, emerging economies, led by China, India, South Africa, United Arab Emirates (UAE) and Qatar are becoming a vital source too. Middle Eastern companies have invested an estimated US$100bn over the past decade.

Key sectors attracting FDIs are extractives, infrastructure (including real estate and construction), and consumer goods. However information and communications technology (ICT) has seen the highest proportion of new project start-ups. There is a trend towards services, manufacturing and special economic zones (SEZs), which can underpin the structural transformation of Africa. Electronic equipment, automotive and agribusiness comprise large chucks of manufacturing investments. Services-related FDI stock has also increased considerably in the past decade.

Multinational enterprises (MNEs) invest largely on the grounds of 'market-seeking' and 'efficiency-seeking' reasons (see footnote). For example, Ethiopia last year received US$2.2bn from Bangladeshi, Chinese and Turkish textile producers because of its privileged market access to North America and the European Union (EU) under the African Growth and Opportunity Act (AGOA) and Economic Partnership Agreements (footnote).

Top-10 Holders of FDI Stock in Africa (US$bn, 2014)



Source: UNCTAD database

Increasingly diverse flows

Major commodity-exporting economies no longer attract the bulk of FDI, but several countries without significant resources are receiving sizeable inflows. Last year, the FDI-to-GDP ratio for non-resource rich countries stood at 4.4 per cent, compared to 2.5 per cent for resource-rich countries, according to UNCTAD figures. Kenya is becoming an East African business hub for manufacturing, intra-regional transport, services and ICT. Ethiopia's FDI is mainly in labour-intensive sectors. The 32 projects launched in 2015 had generated one-fifth of new jobs from FDI across Africa.

The 'Herfindahl-Hirschman' index, a measure of market concentration, indicates a shift to ICT, services, and manufacturing in Africa. The index dropped from 0.43 in 2003 to 0.14 in 2015. This trend is also confirmed by data on announced greenfield projects in 2015 from fDi intelligence, division of the Financial Times Group, which revealed that services and manufacturing comprised over half of the total value of African-based projects. New investments are flowing into

Table1: Top 10 FDI Recipients in Sub-Saharan Africa 2010-14, US$ millions

COUNTRY	Inward FDI*	% of SSA Total	FDI Stock/ 2105	% of SSA Total
Nigeria	35,507	14.4	89,735	17.2
South Africa	28,281	11.5	124,940	24.0
Mozambique	24,994	10.1	28,768	5.5
Ghana	18,832	7.6	26,397	5.1
Congo	15,162	6.1	23,496	4.5
Congo, DRC	13,553	5.5	19,982	3.8
Zambia	10,835	4.4	16,544	3.2
Sudan	10,785	4.3	24,412	4.7
Angola	10,603	4.3	9,623	1.8
Tanzania	10,510	4.2	18,453	3.5
Grand Total	**179,062**	**246,546**	**382,350**	**520,569**

Source: UNCTAD, World Investment Report, 2016

** FDI represents net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in a foreign country. It comprises equity capital, reinvestment of earnings, other long-term capital and short-term capital as shown in the balance of payments*

FDI stock represents the value of the share of affiliate enterprise at book value or historical cost, reflecting prices at the time when the investment was made and reserves (including retained profits) attributable to the parent firm, plus net debt of affiliate to parent company

consumer-market oriented industries, chiefly telecom, retailing, food and financial services, driven by low wages, abundant natural resources and fiscal incentives provided by SEZs.

With rapid urbanisation, major African cities are becoming future hubs of investment (both domestic and foreign). Economic output and spending power in cities such as Cape Town, Johannesburg, Lagos, Luanda and Nairobi, among others, should surge in the coming decades. This, in turn, requires an improved business climate, infrastructure/ logistics services and availability of skilled workers.

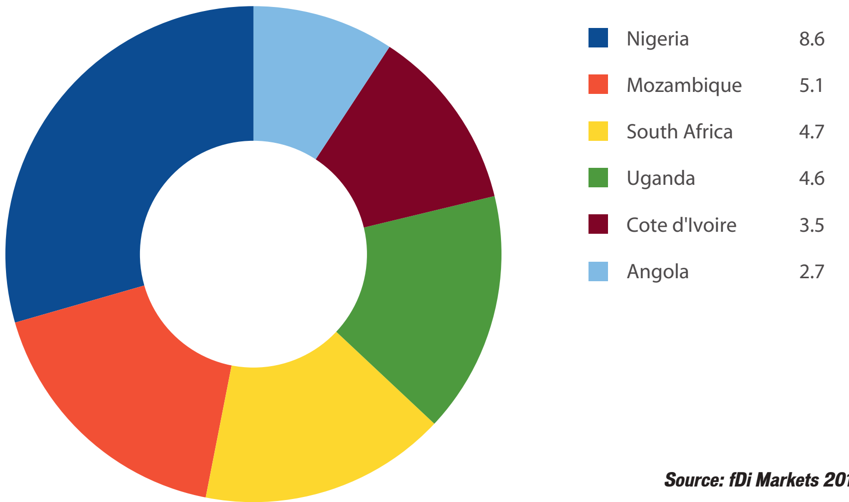
New reported FDI projects

- Puma Energy (Singapore) opened one of the world's biggest Conventional Buoy Mooring (CBM) systems in Luanda Bay (Angola);
- Major carmakers announced greenfield capex into the African auto-industry totalling US$3.1bn in 2015. They included Ford and Honda in Nigeria; Toyota in Kenya; BMW and Volkswagen in South Africa;
- The world's two biggest beer producers (Heineken and Diageo) invested US$345mn and US$344mn, respectively, in Ethiopia;
- French telecom operator Orange bought Democratic Republic of the Congo's Millicom International Cellular's operations (Tigo DRC) for US$160mn;
- Canada-based mining company Semafo is spending US$120mn to build a gold mine in Burkina Faso;
- Singapore's agribusiness giant Olam acquired one of Nigeria's largest millers, BUA Group, for US$275mn

Prospects

Overall, Africa's perceived attractiveness has fallen over the past year. However, those already familiar with the continent remain relatively bullish.

Planned Capital Expenditures in Selected African Countries by Foreign Companies (US$bn, 2015)



Source: fDi Markets 2016

Notwithstanding the bleak global and regional outlook, the International Monetary Fund (IMF) predicts 19 sub-Saharan African countries achieving real GDP growth of over 5 per cent during 2016-17.

Additionally, FDI inflows are expected to reach US$60-66bn this year, coupled with some privatisation of state-owned assets and proactive FDI legislation in the region.

The rise in FDI inflows will mostly occur in public utilities, transport and construction, followed by automotive industry and light manufacturing, such as food/beverages – reflecting growing consumer markets. Both Kenya and Tanzania now permit full foreign ownership of listed companies and Ethiopia has slowly liberalised its manufacturing and retail sectors. In sum, as competition for external risk capital heats up, the African countries need to improve their FDI regimes and increase infrastructure spending, especially on power-generation and transport networks to become more appealing to MNCs.

Table2: Announced Greenfield FDI Projects by Industry 2014-15, US$ millions

Sector/Industry	Africa as Destination		Africa as Investor	
	2014	2015	2014	2015
Primary	**21,974**	**15,841**	**48**	**285**
Mining, Quarrying and Petroleum	21,974	15,841	48	285
Manufacturing	**29,270**	**18,819**	**3,929**	**2,581**
Food, Beverages and Tobacco	2,099	2,623	1,214	64
Coke, Oil Products, and Nuclear Fuel	11,845	4,053	22	29
Chemicals and Chemical Products	6,705	2,698	120	700
Vehicles and other Transport Equipment	2,050	3,069	15	22
Services	**37,890**	**36,687**	**9,541**	**9,682**
Electricity, Gas and Water	10,648	15,523	125	2,139
Construction	9,229	8,353	462	2,595
Transport, Storage and Communications	6,341	5,309	2,305	1,295
Business Services	6,177	3,926	4,950	2,471
TOTAL	89,134	71,348	13,517	12,548

Source: UNCTAD, World Investment Report, 2016.

Major destinations for number of Greenfield products, 2014-15: South Africa (176); Kenya (64); Nigeria (34); Mauritius (24).

Footnote:

There are three types of FDI: Firstly, 'MARKET-SEEKING' that involves replication of production facilities in the host country, targeted to serve local and regional markets.

The main criteria are market size, medium-term growth prospects, import tariffs and transport costs. Secondly, 'ASSET-SEEKING' (which is usually export-oriented) and involves relocating production facilities to the host country.

Factor-cost such as availability of cheap labour and key raw materials [not available] in the home country are important considerations, particularly in the manufacturing industry. The output is mainly exported to the investor's home market or other regions, hence asset-seeking or export-oriented FDI is unaffected by the host country's market size.

Thirdly, 'EFFICIENCY-SEEKING', which aims to achieve greater economies of scale and scope, where investors are influenced largely by geographical proximity to their home country, thereby minimising transportation costs.

Economic Partnership Agreements (EPA) are 'development-focused' trade agreements negotiated between the African, Caribbean and African (ACP) countries/regions and the EU.

These partnerships are reciprocal, but asymmetric trade agreements, where the EU, as one regional block provides full duty-free and quota-free market access to EPA countries and/or regions and where ACP countries/regions, commit to open at least 75% of their markets to the EU. ■

Moin Siddiqi, economist

Experiencing innovation in Nairobi

Solutions on show in East Africa that make healthcare more personalised and more connected, empowering practitioners and patients

Around the globe, disruption, innovation, and the rapid pace of technological development is reshaping consumer experience, as well as the operating environment for organisations of all sizes and within every industry. The healthcare industry is no exception. Today, technological and business innovation is empowering companies and healthcare professionals to deliver medication, treatment and more effective care to patients quickly and more efficiently. This results in better care that is accessible to many more people than ever before. This is vitally important at Philips, which strives to deliver personal and meaningful innovation that has a positive impact on people's lives.

The Philips Live! Innovation Experience 2016 provided a glimpse into the future of healthcare. Attendees were taken on an experiential tour through an immersive setting, highlighting solutions that enable people to live a healthier life, innovations that make care highly personalised and more widely available to those who need it, and ways in which connected care empowers healthcare practitioners and patients – especially in cardiology care.

Cardiology care was a key theme at the event; cardiovascular disease is the number one cause of death globally, accounting for 17.3 million deaths per year, and is expected to grow to more than 23.6 million by 2031. Yet, most cardiovascular diseases can be prevented by changing behaviours and eliminating risk factors. The event showcased innovations that can help clinicians treat cardiovascular disease by speeding detection, diagnosis and treatment, driving more effective recovery and home care, and encouraging prevention and healthy living.

Digital technologies are empowering people to take more control of their health and lead healthier lives. Data and connected solutions help deliver the relevant information at the right time – enabling healthcare professionals to make first-time right decisions, achieve better outcomes at lower costs, and facilitate care models that put patients at the centre of care.

Thanks to advances in imaging and monitoring technologies, combined with rapid development in digital health data and cloud computing, Philips is leading the transformation of the healthcare industry and creating highly integrated, personalised care with better outcomes at lower costs.

As part of the experiential setting at the event attendees were able to see several solutions centred on improving healthcare delivery under three themes: Reinventing Cardiology, Access to Care and Personalisation of health. ■

The EPIQ Ultrasound (Photo: Philips)

Leading from the front in Nigerian ICT

An advocate for change in Nigeria's emerging ICT industry, SystemSpecs has won high praise for its role in Nigeria's flagship Treasury Single Account policy

The Nigerian Central Bank (Photo: /Flickr)

Nigeria is in the global financial spotlight for news other than misappropriation of funds or high-wire scams. Slowly but surely, the administration of President Muhammadu Buhari is ushering in a new era of accountability and transparency in the country with the adoption of a Treasury Single Account (TSA) policy. It has already been praised for returning trillions of naira into the country's public purse within a short space of time.

Policy

The TSA is a consolidation of the Nigerian government's revenue into a single account managed by its central bank, as opposed to the previous system where its ministries, departments and agencies (MDAs) operated 17,000 accounts that made little or no remittance to the national treasury.

Observers believe the policy was long overdue. Several African countries had already identified the importance of such a strategy and incorporated it into their fiscal systems to build transparency. In 2005, Rwanda adopted a zero-balance drawing system that requires its ministries and budget agencies' accounts are held in the National Bank of Kenya. In 2013, Uganda adopted a similar policy to address the dormancy of over 2,000 accounts operated by its ministries. Tanzania and Kenya did not need much push to implement a similar system, ensuring more efficient budget formulation and expenditure management.

At the start of his administration, President Buhari said that he was greeted with an empty treasury that prevented him from executing key projects to help Nigeria move forward. To address this, he took some time selecting a cabinet and drawing up a national budget, a process that cost him some loyalist supporters sold on the 'change' mantra of his administration. But the dynamics may be changing for the better. Recently, Nigeria's

Minister of Information and Culture Lai Mohammed said the implementation of the TSA had helped promote the Buhari administration's fight against corruption and saved Nigeria from imminent financial collapse.

Earlier, the country's finance minister Kemi Adeosun made the same assertion at a workshop with accountants in Abuja. She emphasised that the TSA had provided the government financial information on the revenues of agencies it funds, reducing revenue suppression. "This information is being used to drive our programme to enforce compliance with the Fiscal Responsibility Act and ensure that revenue generating agencies generate expected surpluses and remit to the federal purse," Adeosun said.

High praise

One year on, the radical policy shift is still being celebrated. But observers say its implementation may not have seen the light of day without indigenous ICT company SystemSpecs. Banker-turned-ICT-entrepreneur John Obaro founded SystemSpecs in 1992 to provide e-payment solutions for the Nigerian and other African markets. The company's flagship software, Remita, which now powers the TSA, aggregates multiple bank accounts, giving customers the ability to perform a full and complete suite of e-transactions. By the first quarter of 2016, the software had helped the Nigerian government take full control of over N3 trillion (US$9.52mn) of its cash assets. The country's minister of communications Adebayo Shittu said as much in a recent press conference. During a courtesy call on SystemSpecs last year, he argued that revenues would have increased more dramatically if Remita had been introduced to the Nigerian federal government earlier.

The SystemSpecs chain. (Photo: SystemSpecs)

Awards

It is a boost also for Nigeria's ICT industry generally, as it appreciates the work of SystemSpecs and its integral role in the flagship TSA project. Its Remita software was adjudged the 'Best Software of the Year' and 'Most Efficient e-Revenue Service' at the Nigerian Telecoms Awards and CBN CardExpo Africa Awards 2016, respectively. Internationally, the story is the same. In April this year, SystemSpecs was conferred the Leadership in Technology award by the Africa Forum Scotland to recognise its promotion of excellence, best practice and innovation, especially in relation to its pioneering Remita software. The award was multi-pronged, since Obaro was also named a fellow of the Centre for African Policy, Development and Research, Scotland for his efforts at improving ICT.

Innovation

But SystemSpecs is keen to keep innovating and leading from the front. This includes moves to advance the country's emerging ICT industry. The company's managing director, who recently made the list of Nigeria's top 50 tech titans, is also a crusader for a refocus on Nigeria's ICT industry in light of dwindling oil prices on the international market that threaten to undermine the economy.

Nigeria's ICT industry is still growing and holds tremendous potential. As of 2015, the contribution of the sector to the country's gross domestic product (GDP) was nearing 11 per cent, fuelled by the deregulation of its telecommunications industry. But analysts insist there is a lot of room for improvement. They argue that Nigeria can potentially overtake South Africa as the continent's largest ICT market given more investment. For now, that may seem to be a dream, considering that Nigeria did not make the World Economic Forum's (WEF) list of African countries that integrate ICT in their socio-economic development, unlike Mauritius, South Africa, Seychelles, Morocco, Rwanda and several others.

> "Information is being used to drive our programme to enforce compliance with the Fiscal Responsibility Act and ensure that revenue generating agencies generate expected surpluses and remit to the federal purse"
>
> **KEMI ADEOSUN, NIGERIAN FINANCE MINISTER**

Journey

As far as Obaro is concerned, the journey to Eldorado is still a long one, but it is achievable. Like his peers, he projects that Nigeria can potentially influence the global software technology landscape and reap huge benefits if the government makes efforts to exploit the latent opportunities in ICT. On a number of occasions, he has advised that the government further encourages industry growth by investing in indigenous software and ceasing to embark on foreign trade missions without including Nigerian software entrepreneurs or products.

The future

In a recent interview, he decried the brain drain that has seen virile tech talents leave the country's shores to pitch their tents in search of more encouragement and recognition elsewhere. He firmly believes now is the time for Nigeria to take advantage of untapped opportunities in software technology to grow its economy. Obaro and the SystemSpecs team intend to lead that ICT charge right from the front. ■

Tailoring packaging to improve transportation

How advanced technologies for refrigerated food distribution are serving under-sourced regions

Long life milk is democratising nutrition for many Africans because it has qualities beneficial to transportation and storage. It also hurdles a major continental challenge: electricity supply.

Fridges, from those used on vehicles to transport chilled products to those in retail outlets and finally people's homes, need some form of electricity. Unfortunately, according to The World Bank, the total installed electricity generating capacity in 48 sub-Saharan African countries is roughly the equivalent of Spain. Frighteningly, as much as a quarter of that meagre supply is offline at any given time, due to poor maintenance and ageing infrastructure. Regardless, one in five sub-Saharan Africans simply do not have access to electricity and less than 40 per cent of African countries will achieve universal access to electricity by 2050.

Milk and dairy products are nutrient dense. They provide high quality protein and micronutrients in an easily absorbed form that can benefit both nutritionally vulnerable people and healthy people. Milk is an ideal source of protein and calcium, and also contains a range of essential vitamins and minerals.

Long life milk has qualities beneficial to transportation and storage (Photo: Shutterstock/Rsinha)

Key ingredients for advanced packaging

Long life milk is the same quality as pure milk, produced by a different process. Ultra-high temperature (UHT) is the process that leads to long life milk. It is one of the key ingredients to producing fresh milk that lasts so long – without any preservatives. UHT milk is subjected to special thermal treatment, which destroys germs and preserves vitamins and nutrients. In the absence of bacteria activity and with the pre-sterilisation of the packaging, the milk becomes less perishable: through ultra-pasteurisation, the validity period of milk is prolonged without adding preservatives. The temperatures to which it is heated lie beyond the boiling point (135-150° C) but the boiling time is very short: 2-4 seconds. This very short stage of heating and cooling destroys bacteria and micro organisms and ensures the preservation of vitamins and proteins. This is unlike normal milk boiling, which doesn't destroy all germs and bacteria but instead destroys its nutritional value.

Coupled to the advanced packaging, milk remains as fresh when opened as the day it was packaged. The carton packaging, which contains six critical layers, locks in the freshness and nutrition of the product and guards against the sun's rays and bugs in the air around us. The layers consist of paper, the main component, which provides strength and stiffness; a small amount of polyethylene that makes the package liquid-tight and provides a barrier against microorganisms; and aluminium foil that keeps air, light and off-flavours or odours out, all of which have the ability to cause liquid foods to spoil.

That's why, if you keep the lid on a long life pack, it can be kept unrefrigerated for at least six months.

Whether it be low availability for formal distribution channels in certain locations, poor infrastructure, low income, or a non-milk drinking culture, Africans do not consume nearly the quantities of milk and milk products as Europeans.

Milk's penetration in South Africa across all Living Standards Measurement (LSM) segments is on average 90 per cent. But the volume of consumption is quite different between the LSM segments. Consumption is around 20 litres per household a year for LSM segments 1 to 4, and much higher at around 100 litres a year per household for LSM segments nine to 10.

Safe in cities and rural regions

Growing UHT volumes indicate that fresh, ambient milk is important to many Africans as a source of nutrition and whole foods. Simultaneously, health and convenience are appealing factors to the growing, urbanising middle class of Africans supporting growth of on-the-go portion pack flavoured milks. According to Nielsen, in 2015 long life milk represented 54.7 per cent of the total volume of liquid milk in South Africa, following a growth trend in the past two years. Besides its convenience for transportation and storage, the variety of sizes of containers also contributes to the availability of milk across informal trade, such as spaza shops. Today, long life makes it possible to access nutritious, good quality and safe milk in cities and rural areas. The convenience of ambient storage helps families to never run out of milk in the busy life of big cities.

All types of milk will continue to have an important role for consumers and retailers, but long life makes it possible for nutrition to reach far and beyond, and that's described into Tetra Pak's vision of making food safe and available everywhere and to everyone, in all African countries. ■

Gisele Gurgel, marketing director, Tetra Pak South Africa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New Stralis model a landmark for long haul

Italian commercial truck manufacturer Iveco looks to new frontiers with gas-powered truck model

Iveco is hailing a major step forward for natural gas-powered trucks with the launch of its new Stralis model, claimed to be the first of its kind to be specially designed for long haul operations and “the most sustainable transport truck ever”.

The vehicle was originally launched on 15 June at the company’s plant on the eastern outskirts of Spanish capital Madrid, where the vehicles will be built. Capable of running on condensed or liquid natural gas (LNG), or a blend of the two, the new Stralis features a revamped engine, the Cursor 9 Natural Power Euro VI. The company says this will deliver 400 BHP and 1,700 Nm torque, matching the performance of diesel equivalents and 17 per cent better than its best gas competitor.

Upgrades to previous motors include reprofiled intake ports to increase fuel economy, modifications to injectors and rail to give greater fuel injection pressure, and a new three-way catalyst to reduce noise and consumption. It also has a 12-speed automated HiTronix gearbox, a first for a natural gas-powered truck, which will improve driving comfort as well as consumption. This will help give the new Stralis trucks a maximum range of up to 1,500 km for the LNG-only version, with the added advantage of offering clean and quiet operating when it comes to driving through and delivering in urban areas. The driver sits in a Hi-Way cab, first used on its predecessor, the Stralis Hi-Way, which was launched in 2012 and chosen as “International Truck of the Year” in 2013.

Brand president Pierre Lahutte says Iveco had been a pioneer of natural gas use since 1991, and now has more than 15,000 vehicles,

The new Stralis from Iveco was launched in June at an event in Madrid (Photo: Iveco)

including vans and buses, operating in Europe.

“The new Stralis NP (Natural Power) builds on Iveco’s extensive experience. It is the first long haul gas truck that offers an alternative to diesel and the most sustainable long distance transport truck ever,” Lahutte notes. With a complete redesign of the driveline, the new Stralis should achieve fuel savings of up to 11 per cent on top of a 5.6 per cent saving on overall operating costs (TOC), he adds.

“Iveco is taking gas trucks out of the niche market dimension and into that of a volume market,” added Lahutte. “This is the most fuel-efficient and reliable truck the market has ever seen. It is the only gas vehicle that provides a real alternative to diesel.” Among the vehicle’s features are an integrated hydraulic retarder, a hill-holder and Adaptive Cruise Control (ACC) as standard. It comes fitted with Michelin X Line Energy Tyres, the first to receive a European Union regulatory Triple A rating for rolling resistance. This will enable customers to “opt for the market’s first heavy truck tyre range to earn an A rating for rolling resistance on every axle”, says Iveco. In addition, the long haul 480XP and 570XP versions incorporate the Smart EGR system, which harnesses a small amount of exhaust gas to allow an earlier start of injection and further help in reducing fuel consumption. ■

> “Iveco is taking gas trucks out of the niche market dimension and into that of a volume market”
>
> **IVECO PRESIDENT PIERRE LAHUTTE**


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Rigs like this in offshore Nigeria could be inhabited by robots in the future (Photo: Shell/Flickr)

Shell launches robot for hazardous environments

Sensabot, the first resident mobile robot certified to work in difficult and hostile industrial facilities, has been launched by Shell

Shell will send semi-autonomous Rover vehicles to a desert island in Kazakhstan's Kashagan development, which lies in the Caspian Sea, a site known for high levels of a poisonous gas called hydrogen sulfide.

The Sensabot is equipped with sensors, cameras and wireless communications that enable the company to remotely control the infrastructure with an operator who handles the robot from a safe place. These robots could be utilised in the future on the rigs off the coast of Nigeria that Shell operate.

According to the company, Sensabot is the culmination of seven years of work with leading robotics experts from across the world, including Carnegie Mellon University in the USA, the UK's Soil Machine Dynamics (SMD) and Improvia in the Netherlands.

"Sensabot enables colleagues to do their jobs at a safe distance, while also lowering the costs of day-to-day operations," said Alisa Choong, executive VP responsible for digital technologies at Shell.

The robot will work in remote or unmanned oil and gas facilities and is designed to operate for six months without requiring maintenance. Operators will be able to use Sensabot as their eyes and ears on the ground to check equipment and respond to alerts faster, while gathering accurate real-time data.

To enable a smooth integration of Sensabot into operating assets, the robot comes with an innovative rapid-deployment container and powerful private 4G-LTE system that could provide connectivity to up to 5000 devices including industrial smartphones, tablets, people and material-tracking and condition monitoring equipment. In industrial locations, the 4G LTE is cheaper and provides greater reliable coverage than other types of industrial wireless networks.

While the Sensabot platform is currently equipped for surveillance of oil and gas facilities, different manipulator arms enable it to be adapted for use by emergency services, or for maintenance purposes.

> "Sensabot enables colleagues to do their jobs at a safe distance, while also lowering the costs of day-to-day operations"
>
> **ALISA CHOONG, EXECUTIVE VP FOR DIGITAL TECHNOLOGIES, SHELL**

Adam Serblowski, robotic engineer Shell programme, sees the robot as 'an extension of the human worker' rather than a substitute.

Inspection robots play an important part in the oil and gas industry by performing the invaluable role of inspection, monitoring, and surveillance of complex structures in oil and gas, thereby averting any disasters that may occur otherwise.

The report added that the increase in offshore drilling activity is one of the major drivers in the global inspection robots market in the oil and gas industry. There is increased interest in extracting oil and gas from offshore to ensure supply to meet increasing worldwide demand, especially due to the continued depletion of onshore resources. Offshore oil and gas explorations represent an untapped, yet expensive, and inaccessible supply of valuable resources. ■


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Iconic genset power brands

Ganesh Iyer, power generation global director for Cat and FG Wilson, says the group's proud history is driving the brand forward into the future

Ganesh Iyer and Ann Brown, managing director of FG Wilson (Photo: FG Wilson)

Ganesh Iyer is a man on a mission. Since early 2015, he has held the reins of one of Caterpillar's most significant power generation teams. His reach covers Cat-branded generator sets up to 750 kVA and the entire FG Wilson range from 7 – 2,500 kVA. It is a task that animates him hugely and has his undivided attention.

What makes the task especially interesting is that it embraces two of the genset industry's most iconic brands, which together boast an enviable global presence.

Caterpillar has been in the business since 1939, the first engine manufacturer to provide a complete factory-produced generator set. Today, Cat generators lead the way globally in quality, durability and world-class support.

The FG Wilson brand was founded in 1966 and was acquired by Caterpillar in 1999. Iyer is candid about what attracted Caterpillar to FG Wilson. “It was the modern factories, the distribution channel, the ability to reach new customers and most important of all, the entrepreneurial spirit within the brand.”

Alongside the premium Cat brand generator set range, FG Wilson allowed Caterpillar to reach a wider group of customers. Having a brand like FG Wilson inside the stable was something of a learning experience for Caterpillar as well. While the group now owns many 'non-yellow' brands, in the late 90s much of this was new to the organisation.

“At first, little changed for the FG Wilson brand," Iyer says. "Then gradually over time, we tried to make things more efficient, with common products, common processes and the ultimate goal was a common marketing team between the Cat and FG Wilson brands.”

> “We're writing another chapter of a great brand. It's like a business school case study coming to life”
>
> GANESH IYER, GLOBAL DIRECTOR OF CAT AND FG WILSON

Time for change

However, it might have seemed efficient but it was also diluting the essence that made the FG Wilson brand unique. Slowly, FG Wilson was losing its voice, inside and outside the organisation.

Six months ago, Iyer changed all that. “One thing that is abundantly clear to me is that the FG Wilson brand is critical to our future success. It was time to step back, really think about our customers, set out where we want to take our business, and how we can grow while serving customers even better.”

The first step was the appointment of a new FG Wilson managing director, Ann Brown, a grounded professional with 17 years' experience in the industry and an operations background. She is now surrounded by an experienced team, many of whom started their careers at FG Wilson and were instrumental in driving its growth.

Iyer sees that reaffirmation of FG Wilson brand values as key. The market for generator sets is a crowded and unforgiving place, he says. "The basic technology in a generator set hasn't really changed for a long time; we have a 70-year-old Cat generator set on display at our Larne visitor centre in the UK which wouldn't look out of place at a customer site today. Engines have become more efficient and customers can work remotely with generator sets, but really, the basic core product is the same. This means it's relatively easy for new generator set packagers to enter the market with similar products, so it's a mature and very crowded market."

What is much more difficult, says Iyer, is to build up distribution networks and be capable of supporting generator sets effectively and consistently on site. "People who buy generator sets aren't buying the metal," says Iyer. "They're buying guaranteed power, and with that comes a responsibility that you will honour the trust customers give when they buy."

Global reach

With 600,000 generator sets installed since 1990 alone, FG Wilson does not take any chances with customer trust. Every new product is put through rigorous testing and validation at the US$26mn Larne engineering centre. This site also houses Europe's largest fully automated hemi-anechoic chamber, providing state-of-the-art acoustic research and testing capabilities. And every product is released with a full suite of parts at the brand's main aftermarket facility, which stocks 11,500 product lines and ships three million parts a year.

This focus on service is a huge priority for Iyer. "Few of us now tolerate loss of power; talk to any young person who has lost their wifi or data connection. Today we all expect more from what we buy, and customers who own generator sets expect the same level of service as they get when they buy a consumer product. And this is where FG Wilson is really investing time and resources."

Supporting customers is a global network of over 400 dealers with over 700 touch points, all of them painstakingly recruited and trained. Many have been in partnership with FG Wilson for two or three decades.

"What makes the FG Wilson distribution network really special is that their main, or usually sole, focus is on our generator sets – this is what they do, so they are complete specialists. They understand the business and customers better than anyone."

> "Few of us now tolerate loss of power; talk to any young person who has lost their wifi or data connection"
>
> **GANESH IYER, GLOBAL DIRECTOR OF CAT AND FG WILSON**

That expertise can reach into extremely complex projects. In the early days, FG Wilson built up its name designing, building and commissioning mini power stations in the Middle East, often in the most inhospitable operating environments. That tradition continues today. In some European and Middle Eastern cities, it's possible to look across the skyline and tick off large landmark buildings that rely on an FG Wilson generator set for standby power. Developing this custom business for large generator sets is important to Iyer. "We believe this is something which FG Wilson does extremely well. We've a long track record of experience within our organisation and within the dealer network, world class facilities, and very importantly, the innovation and product development from custom projects can work its way through to our more standard ranges."

The future is very obviously where Iyer's mind is. Yet he's very conscious of the heritage of FG Wilson. He says, "In May, we marked 50 years of FG Wilson with an event at our Larne facility among longstanding employees and representatives of the Wilson family. The warmth and goodwill at that event is something I will never forget. This is a great and historic brand with a 50-year history, and it's our job to preserve and grow it for the future."

Iyer says the benefits of the changes are already being felt across the organisation. "We're writing another chapter of a great brand," he says. "It's like a business school case study coming to life." ■

One of 600,000 FG Wilson's generators installed since 1990 (Photo: FG Wilson)

Ganesh Iyer (Photo: FG Wilson)

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FG WILSON

Tracto-Technik pioneers trenchless cable installation with Grundomat moles

Tracto-Technik sees benefits of its new trenchless technology for the underground installation of pipes and cables

Grundomat on display (Photo: tunnels and infrastructure)

German manufacturer Tracto-Technik first pioneered the Grundomat hammer in the early 1970s and from then on it has been synonymous with trenchless technologies. Today the applications are wide ranging, from laying new piping for infrastructure to replacing old or outdated piping.

The 'moling technology' is widely-used in civil engineering and the benefits are clear, technical, economical and ecological. There is no disruption to valuable surfaces, while excavation and re-instatement work costs are virtually omitted. There are no conflicts with residents or traffic disruption, reduced construction times, noise, CO2 pollution, and a cost saving of up to 50 per cent against open trenching.

These advantages have been shown when installing power or telecommunication services, particularly if there is a need to cross many busy roads.

The pneumatically driven Grundomat 'moles' work their way through the ground displacing the spoil into the surrounding soil. That way a channel is produced into which sleeveless short or long pipes made of plastic (PE, PVC or PE-X) up to 160mm OD or cables can be pulled into. Depending on the type of soil, up to 30 metres in length can either be pulled in successively or later on. A compressor with six to seven bar operating pressure is required for these types of operations. Exact alignment of the machine towards the target is necessary for high target precision.

> "The 'Moling technology' is widely used in civil engineering and the benefits are clear, technical, economical and ecological"
>
> **TRACTO -TECHNIK**

The mole can be used for establishing short crossings or property service connections. Pipes and/or cables can be installed in any displaceable soil. To do so, the mole is placed on a starting cradle and launched from inside a pit. Using a telescopic sight, aim is taken and the height and sides of the machine are adjusted accordingly. The mole is moved forward by a piston driven with compressed air (normal jobsite compressor) with external friction on the outer machine casing required for the forward movement.

> Advantages of the Grundomat include installation of pipes and cables up to 30 metres in length without the need for trenches and minimal set up times
>
> **TRACTO-TECHNIK**

If this is missing e.g., in soft or loose soils, external static pushing support can be added.

Precise target accuracy as well as exact alignment and adjustment of the Grundomat mole are guaranteed by the proven 2-stroke principle. The piston initially strikes the multi-cutter cone which advances in order to produce the bore hole and to destroy any possible obstacles. The second strike impacts the casing which is pulled in with the pipes attached. Peak resistance and casing friction are separated and alternately easier to overcome. This makes the Grundomat work dead on target even in stony grounds.

Advantages of the Grundomat include installation of pipes and cables up to 30 metres in length without the need for trenches, minimal set up times, low air consumption for easy work-side air supply, and premium quality with low wear and tear. ■

Grundomat at work (Photo: zdjęcia z budowy)

Cityscape of Kampala, Uganda (Photo: Sarine Arslanian/ Shutterstock)

Uganda's urban water coverage needs rapid expansion

Good financial performances have allowed some early expansions, but how far have they gone? Geoffrey Muleme reports

The state-run National Water and Sewerage Corporation (NWSC) says some of its key challenges relate to the need for rapid expansion in urban water coverage to reach 100 percent by 2018 as its strives to provide clean, safe piped water to millions of Ugandans.

In accordance with the urban water sector reform agenda and the government's vision, the Corporation plans to expand its mandate to ensure accelerated service delivery in major urban centres. This is in the context of a successful five-year strategic direction implemented during the 2013/14 financial year.

The Corporation, which is wholly owned by the government, says it stands out as a model utility in the African region. It notes that it presently produces about 100 million cubic metres of water per annum from 51 water treatment facilities distributed through 9,300 kilometres of water mains. The number of new water connections average 30,000 annually with over 450,000 accounts, of which 99.9 per cent are metered.

"As a result of improvements in financial performance, the Corporation has been able to sustain a corporate surplus after depreciation over the last ten years and this has enabled the replacement and expansion of the production facilities, network extensions and intensifications, and installation of new connections" it says, while reviewing its operational performance.

It has also been able to fund minor capital investments and meet all the co-funding obligations for major capital investments using internally generated funds. "In order to ensure billing accuracy, all new accounts are effectively metered, and currently, the water body is rolling out pre-paid meters as a means of enhancing efficiency of billing government institutions."

The NWSC, which currently has a presence in 172 towns up from 27 in 2013, recently commissioned a 1,000,000 litre capacity water reservoir expected to cater and bring relief to about 500,000 people on the outskirts of the capital, Kampala

The water supply system, part of the wider Kanyanya water sub-system, involved the laying of a transmission and distribution mains, upgrading of the existing booster, and installation of the one million litre reservoir tanks.

The minister of Water and Environment, Sam Cheptoris ,who officiated at the launch, praised NWSC saying," I get pleased whenever I see a parastatal body performing well. Water is a human right and the Corporation should continue expanding its services every corner of Uganda."

The head of NWSC, engineer Silver Mugisha, says an increase in the number of towns that the Corporation operates in coincides with a rise in the number of Ugandans it serves, increasing from four million to seven million. This represents over 80 percent of the entire urban population.

The official says their main focus is service delivery, although he admits some problems still persist, citing customer complaints of dry taps in some parts of the country and the poor performance on sewerage coverage.

According to the 2016/17 Background to the Budget publication of the Ministry of Finance, access to safe and clean water stood at 72.8 percent in urban areas in financial 2014/15 and the sector's target for urban water supply access in financial year 2016/17 is 100 per cent.

"In financial year 2016/17, the government aims to provide access to safe water facilities for an additional 800,000 people, establish seven town water projects, seven water supply systems in central Uganda and rehabilitate water supply systems," it states, adding that government has set the ambitious target to attain full coverage of safe piped water access by 2040.

The NWSC says it is currently implementing a number of performance improvement plans aimed at improving water delivery to all its areas of operations. It notes that the corporate plan is a guide for continued improvement in the provision of water and sewer services, with the overall theme of continuous improvement for sustainable and equitable service delivery.

The plan is espoused by four Strategic Priority Areas (SPAs) that were adopted as the pillars for the period 2015-2018. These SPAs are smart systems, business continuity and infrastructure growth, financial growth and sustainability, customer and stakeholder delight and productivity and capacity development."

The Corporation says these are further supported by strategic goals to capture the key focus areas.

These include improved service coverage, water production and supply reliability, business growth, asset management efficiency, water waste quality and customer satisfaction. ■


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SA project meets potable water demand

South Africa's Minister of Water and Sanitation (DWS) Nomvula Mokonyane has announced the launch of the Sterkspruit Water Treatment Works in the Eastern Cape province of South Africa.

The water treatment works, located in Sterkspruit close to the Lesotho border, have benefitted from upgraded and additional infrastructure designed to increase capacity and meet the growing demand for potable water sources.

The project is set to benefit citiziens from Joe Gqabi District Municipality.

Minister Mokonyane, alongside executive mayors from Joe Gqabi District and Senqu Municipalities will unveil a plaque and embark on a tour of the Sterkspruit Water Treatment Works, before addressing the community.


Minister of Water and Sanitation (DWS) Nomvula Mokonyane

A total of US$9 million has been spent upgrading the works, which have been delivered in a phased rollout beginning in 2012.

Work on the project was completed towards the end of 2015, in which a total of 130 jobs were created during the refurbishment and construction programme.

Funding was derived from the Municipal Infrastructure Grant (MWIG) and the Department of Water and Sanitation.

"The treatment works have been there for a while, but due to the age, development of the area and the influx of of people it didn't house capacity," Water and Sanitation departmental spokesperson Sputnik Ratau told *African Review*.

The idea behind upgrading the water treatment works is linked to expanding its capacity to treat greater volumes of water.

This was achieved, Ratau continued, by building new infrastructure, but construction was also designed to respond to the need of expanding the water supply to other communities.

"Water demand increases all the time, part of the refurbishment was to look at demand going forward, not just catering for now," he added. ■

South African energy leaders agree on the need for financial innovation

Four leaders in the South African energy sector have stated that financial innovation is a major priority for advancing clean energy in the country.

The issue was discussed at the Leaderex 2016 conference, held in Johannesburg, where it was emphasised that financial investment is particularly critical because the technical innovations are already in place.


A solar mini-grid located in remote Masurura, northern Tanzania (Photo: Power Africa/Flickr)

"Regulators providing concrete direction around net metering and feed-in tarrifs will assist the growth of the rooftop solar market in South Africa," said Charl Alheit, CIO, Solar Africa. "But in the meantime, financiers need to start thinking differently and more creatively to accelerate the inevitable growth of the market."

Jose Luis Bobe, representing GreenMax Sustainability, talked about achieving a 'win for all stakeholders', citing utilities in Spain and Germany where investing in effective photovoltaic solutions has not damaged the revenues of municipalities.

Examples of innovative energy investment from across Africa were held up as positive examples, such as off-grids and mini-grids in Tanzania and Cameroon. Additionally, it was noted that in Tanzania, packages are sold that include television sets, radios and refrigerators along with energy packages.

In the case of South Africa, Alheit says the country has suffered because of the cost of the grid: "In the last few years we've seen big escalations in the cost of grid power which, coupled with the decline in the cost of solar systems, has made rooftop solar much more viable." Moefi Moroeng, representing electricity wholesale trading for NERSA, South Africa, addressed the conference on the role of legislation: "The smaller scale energy projects are those known as the 'embedded generation', but licensing regulations still need to be determined."

Ryan Beech, head of Pankhurst Smart Grid, says that Parkhurst would like to go as far as creating their own infrastructure, which is an indication of how far legislation will have to extend.

"There will be many solutions available to customers over the next three to five years, which will solve the high upfront cost dilemma ensuring exciting growth in the sector," said Alheit.

NUCLEAR INDUSTRY BODY WELCOMES PROPOSALS

The Nuclear Industry Association of South Africa (NIASA) issued a statement welcoming the request for proposals for the country's nuclear procurement programme. The statement stressed that while NIASA supported calls for transparency, local content and the development of skills should be considered as founding principles when vendors are selected. NIASA said the official request and the response of vendors would be the first indication of the true costs of nuclear development. South Africa's plans to develop its nuclear power sector have caused debate on whether the country can afford nuclear energy, how much it needs to procure, and what timeframes will be involved. South Africa's energy minister, Tina Joemat-Pettersson had previously announced that the request for proposals would be issued at the end of September, but refused to release documents on the government's procurement plans because they are privileged and subject to the subjudice rule in relation to court proceedings with environmental groups.

GHANA WORKS WITH US AND FRANCE ON POWER

Ghana's power sector is set to benefit from collaborations with the US and France.

The US Agency for International Development (USAID) and the Ministry of Power launched the Integrated Resource and Resilience (IRRP) project in Accra in September. USAID and the ministry will work with the Ghanaian government to improve power sector planning, developing a comprehensive power sector master plan. Major stakeholders in the project include the Volta River Authority, Bui Power Authority, Grid Company of Ghana, Electricity Company of Ghana, Northern Electrivity Distribution Company, Public Utilities Regulatory Commission and the Millennium Development Authority.

US ambassador to Ghana, Robert Jackson, said the project will promote "cleaner, more efficient and more cost-effective energy" to help Ghana move towards low emissions and low carbon investments, build resilience against climage change, and protect the environment in the long term.

Meanwhile, François Pujolas, ambassador of France to Ghana, addressed the West Africa Clean Energy Environment Conference in September on the subject of the COP 21 agreement, which was signed in Paris in December 2015. The agreement aims to keep the global average temperature increase to below 2ºC. Ambassador Pujolas commended Ghana for being one of the first countries to ratify the Paris agreement and for its initiatives in solar rooftop installations and solar power stations in remote communities.

The Africa Renewable Energy Initiative aims to increase the continent's renewable energy capacity by an additional 10 GW by 2020 and to reach 300 GW by 2030. This has been fully endorsed by the African Union and France, with a bilateral commitment of 2 bn euros between 2016 and 2020.

BRIEFS


Rural Senegal could benefit from this initiative (Photo: Unamid)

Energy access for West Africa

A multi-energy plant for irrigation, fish farming and agricultural transformation is being trialed in the eight member states of the West African Economic and Monetary Union (Benin, Burkina Faso, Guinea Bissau, Côte d'Ivoire, Mali, Niger, Senegal and Togo). In partnership with Schneider Electric and the African Biofuel and Renewable Energy Company, a renewable energy hub will be created to assist all eight states to better exploit their renewable energy potential.


Africa needs energy investment to lower pollution (Photo: warrenski/Flickr)

IEA advice on energy spending

A new report by the International Energy Agency (IEA) advises that a small increase in energy investment could halve early deaths from air pollution by 2040. The report found that emissions are rising in Africa as expected growth in energy demand is greater than policy efforts in relation to air quality. It recommended that countries put in place a package of clean air policies for the energy sector with a cost-effective mix of emissions controls, regulation, monitoring and enforcement.

Are these power lines going to recieve their electricity from a different source? (Photo: Wxin/Shutterstock)

Are gensets the answer to Africa's power problem?

Africa is at tipping point. Millions face power shortages due to unreliabilty. Could gensets be the answer to these African energy prayers? Nicholas Newman reports

Africa is a big market for gensets, according to Price Waterhouse Coopers. It expects expenditure to increase by around 10 per cent per year in sub-Saharan Africa. The current global diesel generator market is expected to rise from US$14.7bn in 2016 to US$17.6bn by 2020, representing a compound annual growth rate of 4.5 per cent.

The market for purchases of gensets in Africa is especially good in markets experiencing unreliable power supplies. Alex Marshall, group marketing & compliance manager Clarke Energy says this is due to "very unreliable grids, disproportionately high costs and lack of widespread access to renewable power." Take Nigeria where power cuts are frequent. It is not helped that the county's power sector produces just 4,000MW for a population of 150mn. In contrast, South Africa generates 40,000MW for 50mn, reports the International Energy Agency (IEA). It is not surprising Nigeria suffers regular power cuts, as demand is overwhelming supply, when it is available.

Why Africa needs to invest in gensets

Overall, 625mn people are without power in sub-Saharan Africa equating to 68 per cent of the population, according to the IEA. Across Africa, only four in 10 Africans enjoy a reasonably reliable power supply. While about two-thirds of Africans live in areas with access to an electric grid, in some countries seven in 10 citizens – and as many as nine in 10 in rural areas – do not. Actual household connections to the grid are somewhat lower (60 per cent on average), and equally variable across countries, reports Afrobarometer Dispatch No. 75, March 2016.

> "Very unreliable grids, disproportionately high costs and lack of widespread access to renewable power"
>
> **ALEX MARSHALL, GROUP MARKETING AND COMPLIANCE MANAGER, CLARKE ENERGY**

Across Africa only 66 per cent of the continent's residents have access to some form of electricity supply, however unreliable it is. Six in 10 Africans (60 per cent) are physically connected to an electric grid, with the number low in areas including Burundi (11 per cent), Malawi (12 per cent), and Burkina Faso (14 per cent), compared to South Africa (95 per cent) and Mauritius (100 per cent), reports Afrobarometer (see corresponding tables). One of the main issues facing many African power consumers both big and small is the issue of reliability. For instance, in Africa's leading economy Nigeria, nearly 96 per cent of people have access to the power grid, but only 18 per cent work at least half the time. Elsewhere, reliability is varied. For instance in Kenya and Ethiopia it is 77 per cent, compared with Zimbabwe (30 per cent) and Zambia (58 per cent). Afrobarometer reports in its survey that only four in 10 Africans (41 per cent) say their government is performing "fairly well" or "very well" in ensuring power.

At present, only 13 per cent of the world's population lives in Africa, but consume just 4 per cent of global energy demand, reported CNN in April. According to The World Bank, the 48 countries that make up sub-Saharan Africa generate roughly the same amount of power as Spain, whose total output in 2014 was 268.4,000 GWh, reports Eurostat 2016. In contrast, the 28 countries that make up Europe produced 3,021 GWh.

Figure 1: How many Africans are connected to an electric grid? Do those connections work? Source: Afrobarometer

The market for gensets

There are several reasons why Africa needs to invest in gensets. For users, they can be a quick-fix solution, able to generate stable power and address insufficient power on the continent. It does not help "that there is the problem with relatively high electricity costs, poor distribution and transmission networks," says Marshall. For a start, they are relatively cheap, easy to install and expand. Many of the world's major genset makers hire out their own equipment, such as Britain's Aggreko, US-owned Caterpillar and UK's Cummins Power Systems. Such companies provide industrial-sized generating capacity for customers all over Africa, which are available to hire out in a range of sizes and purposes such as providing primary power for remote mines and emergency power for hospitals.

For the residential market and small business, there are a whole range of types of gensets available including single-phase petrol generators, three-phase petrol generators, single-phase air cooled diesel Generators, single-phase water cooled diesel generators and three-phase diesel generators. Among the leading brands in this sector are Japanese Yanmar and Yamaha, and US-owned Briggs & Stratton.

supply fluctuations with the local power grid.

Gensets are a useful way of providing additional power supplies at peak times. South Africa's Eskom, which has been experiencing a tight market for its power network, used Aggreko's services to ensure that there was sufficient power to keep the lights on during the 2010 FIFA World Cup in the country. Gensets provide a reliable source of power for industrial users, especially in markets where hydropower supplies are weak due to lengthy droughts.

> "Gensets provide a reliable source of power for industrial users, especially in markets where hydropower supplies are weak due to lengthy droughts"

For instance, in the industrial market, Aggreko rents out units ranging from 20 kVA to 2100 kVA generating capacity, which come in usually portable container sized units, which are assembled at the site. Recently Aggreko provided 20 MW of power to the remote Bisha Mining Share Company gold mine in Eritrea. Elsewhere on the continent, the company made available standby power to the South African national call centre of national business taxi service Good Fellas in Port Elizabeth, which has been facing ongoing power outages and

In addition, for many large power users having your own source of power generation enables such businesses to manage cost better, especially as major state-owned power companies begin to increase power tariffs. As a result, Marshall observes, "Such self generation of power is hugely popular for industrial facilities across Africa, especially since genset-based captive power plants provide business operators control and understanding about their own power supplies."

For instance, Clarke Energy has installed on behalf of its client,

Bakhresa Foods' Azam Flour Mill, GE's Gas Engines CHP Plant in Tanzania, using gas from the country's recently developed pipelines. "It should provide a highly reliable, cost-effective solution for Bakhresa's new CHP plant and support the growth of Tanzania's industrial base," says Oluwatoyin Abegunde, sub-Sahara Africa regional leader for GE's Distributed Power business.

American market research company Navigant says that in the short term, countries with strong economic and/or population growth rates that also increasingly suffer blackouts – such as Nigeria and South Africa – will continue to drive diesel genset sales.

East African Market For Genset Imports

	Import $ millions in 2014	Estimates of Import $ millions in 2018	Population millions in 2014	Power supply reliability rate in 2014
Kenya	134.7	168.5	44.35	77%
Uganda	44.5	65.4	37.59	36%
Tanzania	145.0	220.1	49.25	54%
Sources: Frost & Sullivan, Afrobarometer				

Table 1 (Source: Frost & Sullivan and Afrobarometer)

New market trends

There are a number of new trends appearing in the market. Growing economic development is already spurring growth in demand for electricity throughout the continent. However, increasing investment in wind and sun power, for "the sale of natural gas-fuelled peaking stations is increasing in order to help balance the fluctuations in intermittent renewables such as wind and solar", says Marshall.

In addition, there are an increase in direct sales of engines operating on renewable gases – i.e. biogas, landfill gas, sewage gas and syngas. For example, Clarke Energy has installed at Tropical Power's biogas plant to produce 2.6MW of power from agricultural materials for local usage.

However, in an effort to reduce fuel consumption and greenhouse gases companies like Cummins Africa power solutions are offering more efficient and environmentally friendly products like the QSK95 gensets series. It is designed to operate on diesel, but can be converted to gas.

Another market innovation is the development of gas-fuelled distributed generation. It means centralised power networks are being replaced by decentralised energy production. Here power is produced close to the site of use, thus reducing losses associated with transmission and improves energy efficiency.

Moreover, the market is facing an increase by industrial users in trigeneration. Here, such units generate heat and power; the waste heat can be used to generate steam in a drier. It can also be converted to cooling though an absorption chiller – a valuable driver for air conditioning or refrigeration systems. Examples of trigeneration units in use include Diageo's Guinness Ogba brewery in Lagos, Nigeria.

The discovery and development of new gas fields in several countries, such as Uganda, Kenya, Tanzania, Ethiopia and Mozambique, is likely to increase the use of gensets, as gensets users will be able to use cheaper natural gas rather than expensive diesel. In addition, countries like South Africa are moving ahead with plans for imports of LNG, which should have a similar impact on the market. See Table 1.

> "Africa is tired of being in the dark"
>
> DR AKINWUMI ADESINA, PRESIDENT, AFRICAN DEVELOPMENT BANK

Types of gensets

"Genset are machines that generate power for users, they can be fuelled by a choice of fuels including oil, petrol, diesel, biogas, and fill gas, sewage gas and syngas," remarks Marshall. Gensets can be grouped into one of three different types depending on their style of operation: continuous, prime, or standby.

Continuous and prime power generators are very similar as they act as the main source of power. They are designed to operate continuously or for extended periods. For instance such a unit as at the Tronox Namakwa Sands Furnace Gas CHP Plant facility consists of eight of GE's JMS620GS-SL Jenbacher gas engines and is the second largest furnace gas-fuelled power plant in South Africa as supplied by Clarke Energy. It is used to offset the power drawn from the Eksom national electrical grid, thus providing a saving on Tronox Mineral Sands' electricity consumption.

The main difference between the two is that continuous power generator sets are designed to operate continually with a consistent load, while prime generators are designed to operate for long durations at variable load.

The alternative type of generator is the standby or emergency, which is designed to run only in a backup situation when there is a power outage on the main utility grid or the main source of power. Such examples of such units available for home users on the market are units such as Honda EU 2000i or the powerful Ryobi 2 300-Watt petrol generator, which should be sufficiently powerful enough.

As for prices of gensets they can vary in price from as little as R1,000 (US$68) for small basic home generator, which requires around ten litres of fuel and can power household appliances for a few hours. Though there are more serious ones, such as the 161kg Kipor 8 500 Watt petrol monster. Then there are ones costing many millions of Rand, for instance frozen food wholesaler in Sandton, Johannesburg, Wynberg Chickens has purchased one to ensure it keeps its freezers ice cold.

Gensets are used for a variety of tasks. For example, home users can ensure they do not miss their favourite TV programmes, especially if they have purchased an expensive television.

Technologies issues

When buying gensets, safety is an important issue. It is important that units are not indoors, as the exhaust fumes are poisonous, just like a car exhaust. In addition, although the generator may be waterproof, it usually has a regular plug socket (rather than a weatherproof one) on

Gensets in textile factories like this may be a more common sight across the continent (Photo: Rehan Qureshi/shutterstock)

the front, which will shock you or short if used when wet. In addition, its important to secure the fuel. For instance, petrol is flammable, so only use containers specifically designed to store your fuel to prevent leaks. Also, store it in a safe and well-ventilated location.

Another issue is the need to ensure your unit has an inverter if you do not want your expensive electronic gadgets to fry. In an inverter generator, the engine, which is likely to fluctuate in output dramatically and damage sensitive electronics, produces the AC power. The output is pushed through a rectifier and turned into DC energy. Then it is passed through a second circuit, which evens out the load and turns it into a nice steady stream of power. It is then passed through an inverter, which turns it back into AC electricity suitable for the home user.

> "The sale of natural gas fuelled peaking stations is increasing in order to help balance the fluctuations in intermittent renewables such as wind and solar"
>
> **ALEX MARSHALL, GROUP MARKETING AND COMPLIANCE MANAGER, CLARKE ENERGY**

Challenges

Ultimately, the market has huge potential. There are however short term challenges including the problems of a lack of knowledge by both policy makers and decision makers about the issues and implications of various technologies available. In addition, there is a shortage of bankable projects to muster. Internal political problems in government are also delaying vital decisions being made. In addition to "the shortage of foreign exchange reserves, as in Nigeria and the low value of the Rand in South Africa", observes Marshall. There are also problems in obtaining approvals for new gas distribution networks and access to new gas fields in Africa.

Moreover, health and safety and environmental, operational and regulatory regulations throughout the continent are catching up with what is expected in Europe or North America. For instance, in South Africa the Western Cape government enforces maximum permitted noise levels in urban areas under the country's Noise Control Regulations 2013. Meanwhile, gensets connected to the mains can only be done so with the written consent of Eskom's director. In many cases, African countries are in a state of catch up when it comes to regulations.

Conclusion

"Africa is tired of being in the dark," African Development Bank president Dr. Akinwumi Adesina said after launching the New Deal on Energy for Africa (The Nerve Africa, 2016). What is clear is that gensets are part of the solution to solving Africa's power problem. ■

Wind farms like this may be the lifeblood of sub-Saharan Africa in the near future (Photo: Eksom)

Generation wind power

Across most of sub-Saharan Africa electricity grid supplies are typically unreliable, especially diesel power and generators. This means more and more emphasis is being placed on renewable energy sources such as wind power. Tim Guest reports

There is huge potential for wind power generation to make a big impact to the provision of electricity supplies across Africa, particularly when it comes to supplying often unconnected rural regions. Wind farms are now appearing (though still at a low rate) in many parts of this continent, which many experts suggest has the highest potential of any region in the world to benefit from wind power generation. South Africa, with its Renewable Energy Independent Power Producer Procurement Programme, is leading the field with successes such as Eskom's Sere Wind Farm, though other countries in northern and eastern Africa are working towards a future where wind provides a significant percentage of their country's demands. Many in the industry see a major opportunity for Africa, to leap directly from an almost 'no-power-generation-infrastructure' scenario in many unconnected regions, to a reliance on renewables. This would cut out the need to use fossil fuels at all, thereby avoiding the use of older technologies and the problems much of the rest of the coal-fired/fossil-fuel world is having to deal with today.

In May 2013, Siemens was awarded an onshore wind power order for the Sere wind power plant on the west coast of South Africa. It was a flagship project for the customer Eskom, the country's national electricity utility and one of the largest such utility companies in the world. That project saw the rollout and installation of some 46 type SWT-2.3-108 wind turbines, each with an output of 2.3 M. Each turbine tower stands at heights of 115m; the diameter of the rotor blades is 108m and the overall high output of the farm has been approximately 100MW regularly since full operational output levels were reached. Initial operations began at lower levels in the first half of 2014.

At the time, Felix Ferlemann, CEO of the Wind Power Division in Siemens Energy, said that this was the first large wind project for Eskom and fell in line with the country's Independent Power Producer Procurement Programme. He also stressed Siemen's pedigree in the country having already delivered the Jeffrey's Bay onshore wind power plant with a total capacity of 138 MW for Mainstream Renewable Power Limited with other investment stakeholders. Since then, Sere has been handed over by Siemens to Eskom and is now under their full operational control.

Located close to the town of Koekenaap and falling within the Matzikama Municipality in the Western Cape, the Sere Wind Farm has been contributing to Eskom's on-going effort to ensure continuity of supply to its customers, as well as supporting its goals to engage in clean, sustainable electric power generation over the long term. The utility stated that the project is 'premised on the need for diversifying Eskom's energy mix and implementing technologies that will contribute to clean energy production'.

In April last year, Eskom announced that the Sere Wind Farm had achieved its full commercial operational capacity of 100 MW at the end of the previous month

Eskom's chiefeExecutive Brian Molefe, said at the time, "Sere is Eskom's first large-scale renewable energy project and forms part of our commitment to renewable energy and reducing our carbon footprint." He added that by adding its 100 MW to the national power grid, Sere would contribute to saving nearly 'six million tons of greenhouse gas emissions over its 20 years of expected operating life, with an average annual energy production of about 298 000 MWh, or enough to supply about 124, 000 standard homes.

He said at the time that all 46 wind turbines had been erected and energised and the construction of the new Skaapvlei sub-station and a 44 km, 132kV distribution line had also been completed.

A spokesperson spoke to *African Review* about Sere's latest progress and said the company has maintained the same installed capacity with improved plant availability and energy sent out year-to-date, compared to the last year.

Staff have grown and become more skilled and experienced in the maintenance and operation of the turbines.

The Eskom spokesperson said, "The project has been a complete success having been completed on time and within budget, with actual availability and capacity factors exceeding those estimated in the original business case."

They concluded that the farm 'has generated more than 450 GWh since going into commercial operation, as outlined above, and that it continues to feed into the national grid via the distribution network'. ■

Compact generator range packs a punch

Cummins Generator Technologies (CGT) has launched its new 250 to 450 kVA segment generator range, the S4, designed to be more powerful and compact than the earlier HC4 model

CGT has set out to replace its complete range of generators under the 'S' nomenclature in the next two years, while keeping its iconic STAMFORD (S) and AvK brands. Each range will be more powerful and compact than the range it replaces. The first Range S0/S1 was launched this year at Middle East Electricity for the 7.5 to 62.5 kVA range. The S range, when fully launched, will cover from the S0 at 7.5kVA to the S8 with an output in excess of 4,000kVA.

The commercial drive to comprehensively update the ranges for CGT is clear – to stay competitive in the over supplied market of generators. To do this, CGT aims to offer better power densities for a better price per kVA output. The products have also been revamped to stay one step ahead of the counterfeiters and copiers, which CGT estimates costs the industry US$100mn, and possibly much more to the end users when counterfeit generators or parts fail causing operational downtime and worse. As poorly manufactured generators suffer a drop in power output, counterfeit generators often struggle to maintain the same power output compared to the unit it is a copy of.

Alastair McQueen, director of product development at Cummins Generator Technologies

> "The power output of the S4 range is 12 per cent higher than the previous HC4 Stamford model for only an addtional 30mm of length

Counterfeit prevention

The S4, with its enhanced thermal management, will be hard for counterfeiters to copy in such a compact size. The redesign focused around better use of space, improved impregnation of insulation during manufacturing to protect the windings and better airflow to maintain temperature under the trademark CoreCooling. The result is a more compact generator that with 8 per cent more power density than its predecessor. The advantage of this design is that it would allow genset manufacturers to introduce the new S series models into their existing production lines without changing their canopy design and utilitise the increasing power that newer engine models produce. The power output of the S4 range is 12 per cent higher than the previous HC4 STAMFORD model for only an additonal 30mm of length.

To drive the value of the new model for the genset assemblers, the new design has variable brackets to allow the unit to sit on mountings made for CGT's competitors and match their different output shaft heights. This minimises the need to redesign the existing genset product line for customers to use the S4. To reduce assembly costs, the S range is designed to be fitted to an engine in half the time of the existing model. All CGT generators go through a strict testing regime. The the S4 range has been put through 1,500 operating hours and 1,500 thermal cycles and has been tested in harsh client environments.

The S5 range, will be unveiled on to the market at Power-Gen USA in December and the S6 at Middle East Electricity February 2017. ■

The S4 design uses better thermal management to deliver greater power density.

'The Big 5' opens in Kenya

With the aim of catering to the expanding construction sector of the region, the inaugural edition of Big 5 Construct East Africa 2016 is set to bring over 200 exhibitors to Nairobi in November

Big 5 will give special emphasis to education and knowledge transfer through, seminars and workshops

The Big 5 is organised by DMG events and is claimed to be the largest of construction industry events spanning the Middle East, India, South East Asia and Africa.

The show will be the official exhibition of Kenya's first National Construction Week and will be co-located with the Annual Construction Research Conference and Exhibition (ACoRCE), the National Construction Week's official conference. According to the organisers, the National Construction Week will open a brand new chapter in the development of the East African construction industry. The theme for this year shall focus on 'Nurturing the Transformation of Local Construction Industry on Materials and Technologies for Global Best Practice'.

The Big 5 Construct East Africa 2016 is endorsed by the National Construction Authority (NCA) and Kenya Investment Authority (KenInvest). The show is also supported by local government bodies and prominent associations including the Ministry of Transport, Infrastructure, the Housing & Urban development, Ministry of Lands & Physical Planning, the Institute of Clerks of Works, the National Commission of Science, Technology and Innovation, the Town and Country Planners Association of Kenya (TCPAK), the Architectural Association of Kenya (AAK), the Institution of Engineers of Kenya (IEK), the Institute of Quantity Surveyors of Kenya (IQSK), the Jomo Kenyatta University of Architecture and Technology, and the Kenya Institute of Public Policy Research and Analysis.

Commenting on the event, National Construction Authority (NCA) executive director Daniel O Manduku said, "The time and resources invested in this partnership between the NCA and The Big 5 Construct East Africa will propel the Annual Construction Research Conference and Exhibition to greater heights, becoming the reference point in construction matters in the country."

The event in November is expected to be the central meeting place for global manufacturers and decision-makers to network and do business in Kenya and the broader East African region. Manduku added, "The NCA is glad to have on board a world renowned exhibitions partner like The Big 5 Construct East Africa, which will bring to the local industry a wealth of knowledge and experience in construction materials and technologies."

The Big 5 Construct East Africa 2016 will feature country pavilions of construction heavyweights such as Turkey, Italy, Germany and Greece, bringing together international innovative solutions to the local industry.

> "We believe that The Big 5 Construct Africa will be the perfect gateway to explore the opportunities offered by the local market, and an excellent platform to promote our new products and services in Africa"
>
> **NATIONAL PAINTS EXPORT SALES REPRESENTATIVE ALI AMIN ISMAIL**

Ali Amin Ismail, export sales representative at National Paints, which will be participating in the show, commented, "We believe that The Big 5 Construct Africa will be the perfect gateway to explore the opportunities offered by the local market, and an excellent platform to promote our new products and services in Africa."

The Big 5 will place special emphasis on certified education through conferences, seminars and workshops to support continued professional development among audiences. The show will feature "How to trade in Kenya seminar", a free-to-attend class where experienced professionals will speak on the do's and don'ts of setting up and operating successfully in Kenya. Moreover, participants will be able to attend for free 15+ CPD certified workshops delivered by industry specialists, sharing cutting-edge insights based on real world experience. ■

Timber processing falls foul of illegal logging

A number of governments in the sub-Sahara region backed by 'green groups' and aid agencies are calling for a renaissance in Africa's timber sector, as Nnamdi Anyadike reports

At the dawn of the colonial era, vast tracts of sub-Saharan Africa lay under a dense carpet of tropical forest stretching from West Africa below the Savannah belt, Gabon and Congo on the Atlantic coast through to the continent's deep interior. However, a combination of illegal logging and unsustainable farming practices has decimated much of the region's ancient hardwood forest cover. Today, The International Tropical Timber Organization (ITTO) estimates that African countries source less than 10 per cent of the US$4bn worth of timber and timber products that they import each year, from within the African continent. But now a number of governments in the region, backed by multilateral and bilateral aid agencies and supported by 'green' groups, are calling for a renaissance in Africa's timber sector. They argue that a sustainable timber processing industry could help transform sub-Saharan Africa's economy by cutting its dependence on other subsoil natural resources like crude oil and minerals, not to mention by reducing its dependence on foreign timber imports. To achieve this end, a number of key multilateral and bilateral initiatives are underway. The Fund for the Green Economy in Central Africa (FEVAC), launched two years ago and backed by the European Union (EU), aims to make sustainable forestry and timber industries a key part of a shift towards a greener African economy. The goal is for the timber industry to eventually comprise 3-8 per cent of the GDP of the Economic Community of Central African States (ECCAS). Last year, the government of Japan provided US$1.4mn to fund the initial twelve month first phase of a three-year ITTO project to stimulate intra-African timber trade and sustainable forest management. It focuses on three pilot countries that include Côte d'Ivoire, Cameroon and another country in the Congo Basin. By the time that the project is completed in 2018 the aim, through workshops and training, is to have a greatly enhanced timber and timber processing industry in Central Africa.

The key focus running through all these various initiatives is to shift the lumber sector away from its emphasis on logging and towards a more value added processing industry. In the case of Gabon, where 85 per cent of the land area is still under tropical forest cover, the move towards processing is a legal imperative. Spurred on by the failure to achieve its ten-year target set in 2001 to achieve a 75 per cent processing of its felled timber by 2011, the government in 2010 implemented a ban on raw timber exports. The government then created in partnership with Singapore's Olam International, an economic hub outside the capital city Libreville known as the Nkok Special Zone, to facilitate the industrialisation of the timber industry. The hub occupies an area of 1,126 hectares and now employs over 7,000 people. On the eve of the export ban, Gabon had 48 operating sawmill facilities, nine peeling units and three plywood plants with a potential annual processing capacity of about 1.7mn cubic metres of logs. Since then, the timber capacity has expanded and the country now produces 2.2mn cubic metres of logs; 679,000 cubic metres of sawn wood; 270,000 cubic metres of veneer; and 95,000 cubic metres of plywood. Gabon Wood Industries (GWI), which was established in 2012, is expected to open its second saw mill in Mouila this year with a production of 36,000 cubic metres per year. This plant will join the 36,000 cubic metres per year Mouila1 that is already in production and doubles GWI's output.

In November 2013, Société Nationale des Bois du Gabon (SNGB) opened its third plywood factory at an investment of CFA34bn (Euro 51mn). The International Monetary Fund (IMF) projects the country's total timber exports will rise to Euro 485.1mn by 2017, up from Euro 296.3mn in 2013. And KPMG forecasts that exports of processed timber will claim a growing share of the country's total exports, climbing from 3.49 per cent in 2012 to 4.1 per cent in 2014 with the potential to rise above 5 per cent by 2017.

But the government appears to be defeated in its key aim of curbing the export of unprocessed timber. Indeed, Marc Ona Essangui, a local environmental activist claims, "The industrialisation of the wood sector has increased the illegal exploitation of wood. For example, today even though a law regarding forestry is being reviewed, we continue to see the exploitation of rare wood such as Kevazingo. We are currently experiencing levels of illegal logging that we have never seen before." The Kevazingo tree can take about 500 years to grow to its full height of 40 metres.

There are also real concerns that the Chinese government is playing a destabilising role with regards to Africa's attempts to increase the level of domestic timber processing. In a recent report Chatham house estimates that half of all the trade in illegal wood-based products is now destined for China, which is the largest consumer as well as a major processing hub. Greenpeace Africa research comes to similar conclusions with regards to the global market for timber from the Congo basin. Raw wood is comparatively easier to acquire than processed timber, as illegally harvested logs are more easily smuggled out of country than processed wood.

The bigger problem for Africa's processed timber industry though is that Beijing sees the importation of raw logs as an effective 'social policy' instrument. Some Chinese companies like Sunry Gabon and Hua Jia, did opt to vertically integrate their Gabonese activities in the wake of the ban. Sunry Gabon, part of China's COFCO group, now performs in-house processing while harvesting logs for sale to local processors. And Hua Jia Timber logs and processes Gabonese timber primarily for export to the Chinese furniture market via its parent company, Yi Hua Timber.

But many others relocated to less well regulated African countries in order to source raw timber to feed their domestic processing industries. Greenpeace Africa estimates that around 100 Chinese companies are now importing timber from the six Congo Basin countries. The Chinese government is well aware of the potential dangers inherent in the job losses that are occurring as a result of urbanisation, demographic shifts, and increased agricultural efficiencies. Wood processing, especially wood furniture production which is labour intensive, creates an estimated 12 to 15mn Chinese jobs per year. So Chinese wood processing companies have been given incentives in the form of cheap loans and tax breaks to remain open, even if they are inefficient and unprofitable.

To combat this, Africa will need to create a common vision on timber processing and trade. ITTO is trying to foster a regional approach to the many challenges facing the sector, including harmonised trade policies. But to date success has been painfully slow. ■

Carrying the right parts

One of the biggest challenges facing industrial and manufacturing facilities is equipment maintenance and the potential issues that can arise when a piece of vital equipment goes down. For most of these facilities, cranes are a critical component of their operations, so downtime and low productivity are not acceptable.

Most maintenance managers understand the importance of having the right part for their crane at the right time. When an unplanned failure occurs, it often becomes a race against time to identify and replace the part.

For Konecranes in South Africa it doesn't matter who made your crane. Konecranes offers genuine spare parts as well as replacement parts for all makes and models. Konecranes can usually source original equipment manufacturer parts not only for their own equipment but for all makes and models of hoists and cranes. As an alternative to OEM parts, equivalent parts are functionally similar replacements manufactured by Konecranes or sourced from suppliers other than the original manufacturer. Drawing on extensive experience with more than 450,000 pieces of equipment under service agreement, Konecranes guides customers in selecting a spare parts inventory, while keeping tens of thousands of parts in stock across 13 distribution centres globally.

Konecranes can offer authentic spare parts and replacements for all types of crane

Konecranes has established a parts distribution centre in Johannesburg, South Africa, which services sub-Saharan Africa. The centre provides full support to customers with fast turnaround times for queries and orders. The Southern African Parts Distribution centre has high availability of parts in stock, which has resulted in a significant increase in optimised delivery punctuality.

Celeste Viljoen, distribution centre operations manager commented, "Our team aims to offer a turnaround time, wherever possible, of within 24hrs, depending on the request." ■

African cities to attract investors at African Real Estate Summit

Kigali, Uganda is one of the cities invited to the summit (Photo: Hansueli Krapf/commons)

Kigali, Lusaka and Dar es Salaam are open for business and are showcasing their future land and development plans at the African Real Estate Summit in Cape Town from 2-3 November 2016.

The African Real Estate & Infrastructure Summit will gather the full spectrum of the continent's real estate sector and will assist African cities and governments to secure international investment for commercial real estate development and further progression on infrastructure projects that will contribute to Urban Development Plans (UDPs).

The opening keynote at the African Real Estate Summit will be titled "Developing the Future of African Cities" in which the speech will focus on the fact that Africa's population of roughly 1.1bn is expected to double by 2050.

Keynote speakers include Jean Pierre Elong Mbassi, secretary general UCLG-A, Morocco; Nana Kwame Bediako, president, founder and CEO, Petronia, Ghana; Lekwalo Mosienyane, director, Mosienyane and Partners Int. and president, Business Botswana, Botswana.

"We passionately believe that Africa is a continent of opportunity," Jean-Pierre Elong Mbassi, secretary general of the United Cities and Local Governments of Africa (UCLG) stated.

"With improving economies, rising populations, rapid rates of urbanisation and burgeoning middle classes, some African cities are expected to grow between 70-100 per cent in the next 15 years." Mr Jean-Pierre Elong Mbassi continued.

The summit will provide an invaluable opportunity for investors, developers, landowners and the cities themselves to conduct business, sign contracts and develop the future cities of Africa. Alongside the Urban Development Plan City Showcase sessions, the two-day high-level conference will also offer private companies case studies and practical guidance on how to do business in new markets.

The African Real Estate & Infrastructure Summit is organised by Spintelligent, leading Cape Town-based trade exhibition and conference organiser, and the African office of Clarion Events Ltd, based in the UK.

MOTHEO TRANSFORMED INTO CONSTRUCTION GROUP

Motheo's civils division specialises in road construction and earthworks, but has also established a formidable concrete division, focusing on all forms of structural concrete work. Archie Rutherford, former CEO and director of Ruthcon Civil Contractors is heading up the new civils division. "The vision of Motheo is to build a truly empowered, all-encompassing, black-owned construction company. We do not want to focus only on housing. Over the next five to seven years we want to develop into a diversified construction group, covering civils, building and housing," Rutherford comments. "We are up and running on the civils side," he confirms. Projects recently tendered include the Clanwilliam Dam construction project, the Nooitgedacht Wastewater Treatment Plant and various construction contracts for South32 in the mining industry. Rutherford also reveals that, in addition to its traditional housing focus, Motheo will be diversifying into commercial building projects in order to extend its scope even further.

PROPERTY STARTUP TO BOOST AFRICAN DEVELOPMENT

Newly launched commercial property company Rosh Pinah Properties has announced an exclusive partnership agreement with the Southern African Development Agency (SADEA), backed by European funding institutions, and ResourceCo, to promote investment opportunities within Southern Africa.

Rosh Pinah founders Patricia Potgieter and Rene Styber have extensive experience in identifying prime commercial properties for rent or sale to potential clients and investors – particularly in the retail space. Potgieter, for example, was instrumental in the sale and development of the Nelson Mandela Square, in Sandton.

Commenting on the relationship with Rosh Pinah Properties and ResourceCo, SADEA CEO Chris Micha Landmann says, "Our core philosophy is to partner with regional experts who can leverage investment opportunities for us. We believe both ResourceCo and Rosh Pinah Properties are such partners."

"ResourceCo has a track record in Southern Africa in all property aspects as well as project managing large developments, and we welcome the synergies that we believe will come from this association," says ResourceCo Chairman Dr Konstant Bruinette.

"South Africa has more retail developments per capita in the world and the sector is the fourth largest contributor to our GDP," Potgieter says.

"We find SA-based property funds, developers and investors are looking to Africa, and even Eastern Europe, to grow, and we need to capitalise on this trend," says Styber."So we need to be where the business is, and SADEA to a large extent unlocks this for us," she added.

BRIEFS

Saudi and South Africa lead power construction

Lion's Head, Cape Town (Photo: Flickr/David Stanley)

Timetric report that the value of power generation construction projects pipeline in the Middle East and Africa stands at US$275.5bn and US$167.4bn respectively. Neil Martin at Timetric comments: "Although the countries in the Middle East and Africa are beginning to invest in renewable fuel, with countries such as Nigeria leading in solar energy and Kenya with geothermal, nuclear power generation remains a significant part of the strategy for Saudi Arabia, and South Africa."

South Africa ahead in green projects

South Africa is a leader in green building (Photo: Joachim Huber/ Wiki Commons)

There is very little doubt that South Africa is set to become a leader in the green building movement. A recent report published by World Green Building Trends indicated that South Africa has emerged as a leader in green building in 2016. This is largely through private sector led investments where the early adopters have come to terms with the economics of green design in the country's rapidly changing energy landscape.

Showcase for new construction technology and projects

The fourth CIBEX East Africa conference will expose regional industry experts to exciting developments from this fast-growing region.

The East African economy is generally the fastest growing economy in the sub-Saharan Africa region, and with this growth comes exciting new projects. Investment in construction, energy and infrastructure is strong, and the ever-increasing middle income population is helping to fuel this growth.

Abundant natural resources and recent mineral, oil and gas discoveries, as well as an investor-friendly environment also contribute to the attractiveness of the region.

From 15-17 February 2017, the fourth CIBEX East Africa conference will take place in Nairobi at the Kenyatta International Convention Centre.

With expected growth in infrastructure for the region standing at around 10 per cent per annum, there has never been a better time to investigate investment opportunities, new technologies and current projects. Additionally, international experts will be on hand at the event to share their know-how, with global promotion for the event from IMAG, a subsidiary of Messe München.

At a local level, CIBEX East Africa is supported by leading industry associations including the National Construction Authority and the Kenyan Federation of Master Builders.

CIBEX East Africa organisers are keen to attract to the event exporters who want to make their mark in this booming market, as well as local dealers who are keen to widen the scope of their business with international partners. The aim for the event to provide a global networking platform for the whole construction and infrastructure industry in East Africa.

The 2016 event was a tremendous success with 51 exhibition participants from Austria, Denmark, Germany, Finland, France, Italy, Kenya, Madagascar, Poland, Switzerland and UAE showcasing products and innovations to the East African construction industry.

A spokesperson for SIMBA Corporations, which was an exhibitor at the event, commented on CIBEX East Africa 2016: "We had great satisfaction with our stand and its strategic location. We got promising business leads, amazing views and many requests from serious customers – this was more than our expectation." ■

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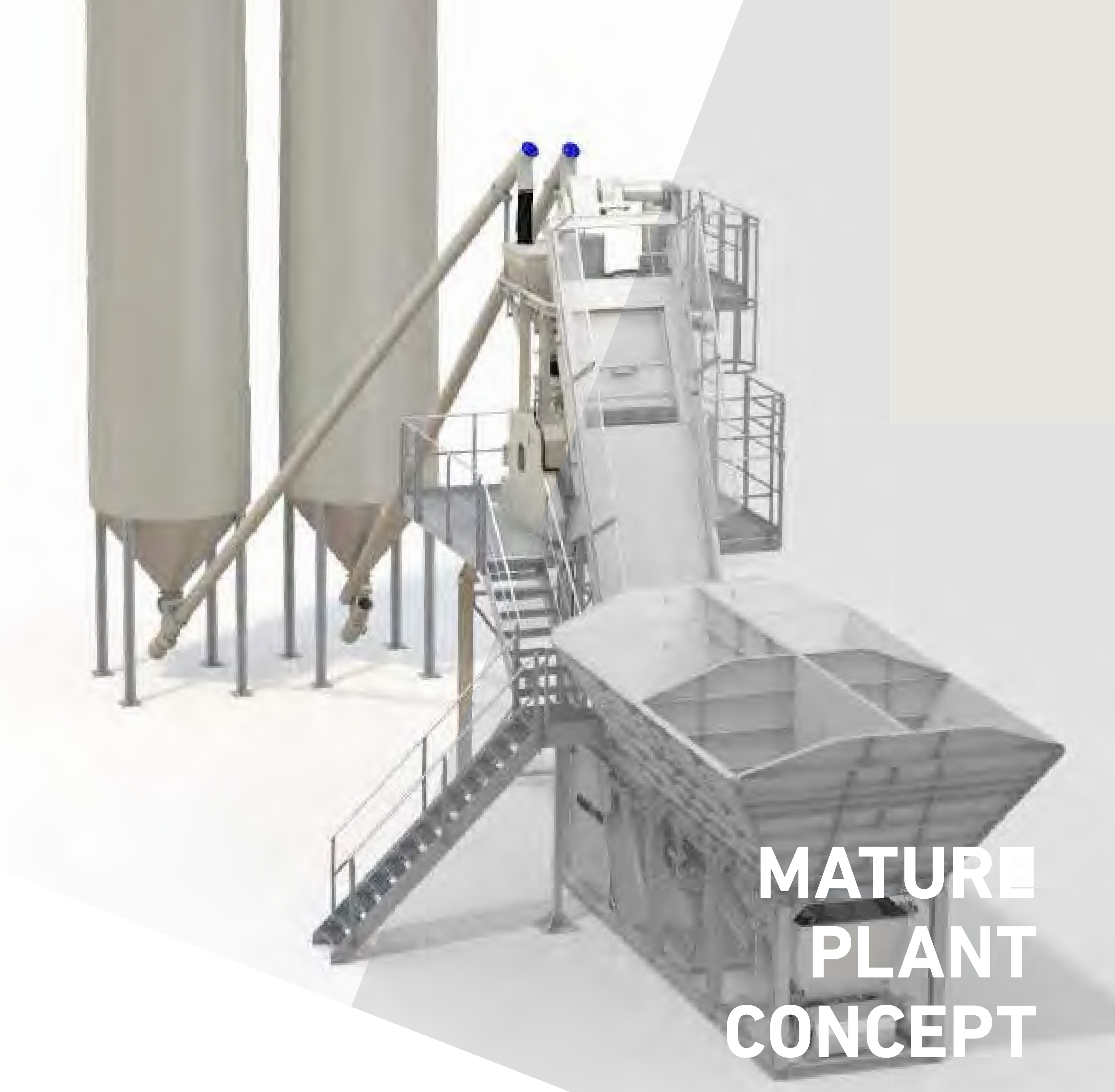

MATURE PLANT CONCEPT

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Fast installation times and unproblematic relocation as well as favourable transport dimensions for were the main targets of the engineers developing the new plant concept. Result is the new CBT plant, that is extremely fast in set up times due to its folding mechanisms and compact plant design.

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AMMANN

Concrete roads help drive Africa's cement sector

Roads can be less expensive to build, easier to maintain and more robust - with less need for restructuring, patching or surface sealing. Nnamdi Anyadike reports

Cement roads to build Africa's success (Photo: 玄史生 / Wiki Commons)

Demand for cement in the sub-Saharan Africa region is continuing to expand. Investment in new plants to cater for this demand is being led by Dangote Cement, a subsidiary of Dangote Industries Ltd (DIL), and its rival Lafarge Africa Plc. Dangote Cement is increasing its annual production across sub-Sahara by a whopping 22mn tonnes, from 40mn tonnes to a forecast 62mn tonnes. Factories include the US$450mn 2.5mn tonnes per year (tpy) cement plant in Ethiopia, which can be doubled in the short term; a US$452mn 3mn tpy cement plant in Tanzania;
and a US$300mn 1.5mn tpy plant in Kenya.

Lafarge plans to double its 8.5mn tpy of installed sub-Saharan capacity to 17mn tpy by 2020. Speaking at the company's end-June Annual General Meeting (AGM) in Lagos, Mobolaji Balogun, chairman of Lafarge Africa, declared, "The 2016 federal government budget indicates a significant increase in the spending on infrastructure and capital projects…With the on-going 2.5mn tpy expansion project in Calabar, which is expected to be commissioned before year-end, and plans for Ashaka, our cement production capacity in Nigeria is on the increase." Last year, Lafarge ReadyMix Nigeria reported a 29.3 per cent growth in its turnover over the prior year.

Both companies are looking to cash in on the swathe of infrastructure projects announced in this year's Nigerian budget, including the construction of new rail and road links. Aliko Dangote, president and chief executive of Dangote Group, estimates the country loses US$1billion annually to the poor condition of its asphalt roads. And his lobbying of both the federal and state governments – in whose jurisdictions well over 95 per cent of roads are built with asphalt – to turn towards concrete in their current road construction programmes has met with some success. Abuja has now awarded Dangote Cement a tax waiver as an incentive to build roads out of concrete. It is favouring the use of concrete because about 80 per cent of the materials used for asphalt road construction are imported.

Speaking at the commissioning and handing over, in June 2016, of the 26km Itori-Ibeshe Road that was constructed with concrete supplied by AG Dangote Limited Ashif Juma, managing director, said, "Concrete roads today are less expensive, easy to maintain and last longer than asphalt roads…concrete lasts longer, without any need for restructuring, patching or surface sealing."

DIL has formed a joint venture with Brazilian contractor Andrade Gutierrez to provide the necessary expertise. The two partners will engage in the construction of a number of concrete roads in Nigeria, some of which will be new roads and some reconstructions of existing routes. Aside from the Itori and Ibese road to the north of Lagos, other concrete road projects include a new road between Obajana and Kabba in Kogi State, central Nigeria and the Ajora–Apapa urban motorway in central Lagos.

Although concrete is recognised as being a more durable road building material than asphalt, the higher capital costs associated with it meant that it had hitherto seldom been used in sub-Saharan Africa. In May, Dangote Cement slashed the price of its cement in Tanzania by up to 20 per cent, a move that could boost demand for concrete projects across the region. Concrete road building, in the form of concrete block paving (CBP), is already taking off; by 2020, Zambia's urban road network will have undergone an extensive CBP revamp.

Pave Zambia, a project to upgrade 2,000km of urban roads in 10 provinces using CBP, is being implemented by Zambia's Roads Development Agency (RDA) at a cost of US$307mn. The RDA says the CBP is the cheapest technology for Zambia in achieving a better urban road network in the short-term, with an average road construction cost of US$137,000-271,000 per km, compared to US$634,000-906,000 per km for bituminous surface roads. The rehabilitation and maintenance of Zambia's 67,671km of gazetted roads, starting from 2012 to the end of 2016, has required a budget of US$4.5bn.

> "Within the next 18 months, we hope to complete the Ijora-Wharf Road in Lagos and bring succour to Lagosians"
>
> **ASHIF JUMA, AG DANGOTE LIMITED MANAGING DIRECTOR**

Meanwhile, South Africa's Concrete Manufacturing Association (CMA) has long campaigned for more use of CBP in road improvement on the grounds it is both cheap to construct and maintain as well as providing greater visual appeal.

On CMA's website, technical director Taco Voogt says that the CBP option can contribute to road safety by reducing the phenomenon of aquaplaning during rainy seasons. "The 2-3mm water sheet often found on asphalt roads during heavy downpours is virtually non-existent, especially when the pavers are bevelled. Permeable paving installations, which are specifically designed to soak up stormwater, are even more effective dispersing surface water and can be installed on sections of road where channels are likely to form," he claims.

There are other advantages with regards to road quality, road repair and the laying of utility pipes. The CBP texture offers better braking and road marking, unlike painted surfaces which require regular maintenance. The laying of utility cables is also easier than with asphalt. In the case of the latter, utility companies shoulder the cost of reconstructing the roads once they have dug up the surface to lay them. But in the case of CBP, individual blocks can be lifted and replaced with no visible sign of disturbance.

Sub-Saharan Africa's concrete infrastructure clearly has far to go before it catches up with the rest of the world, a fact reflected in the region's low per capita cement consumption. According to Ecobank Research, cement consumption averages just 187kg in Ghana, 126kg in Nigeria, 80kg in Kenya and 61kg in Ethiopia per capita compared with the world average of 513kg. However, the innovative use of concrete in road building – once governments are persuaded of its benefits – could provide the industry with a massive new opportunity to expand across the continent. ■

3Q Mahuma Concrete first entered this market through the supply of about 50 000 m3 of the material for the Mall of Africa development.

3Q Mahuma's association with Chryso Admixtures

For many enterprising concrete producers access to a supply of these important sophisticated construction chemicals has been a cornerstone of their success. This has certainly been the case for 3Q Mahuma Concrete which over the past 10 years has positioned itself as a reputable supplier of advanced concrete mixes to the South African construction industry. From the outset, the company's management established close ties with essential supply chain partners. It is this strategy that has allowed 3Q Mahuma Concrete to effectively compete against the many readymix producers in the country and, just as importantly, enabled the company to supply the onerous needs of contractors executing complex concrete designs.

A partner that continues to play a significant role in 3Q Concrete Mahuma Concrete's rapid growth is leading local construction chemicals specialist, Chryso Southern Africa.

"Not only has Chryso remained our main supplier of quality admixtures over the years, but the company plays a crucial role in transferring essential admixture applications knowledge and this, in turn, allows us to enhance the properties of concrete," Martin Kruger, sales and marketing manager of 3Q Mahuma Concrete, says. Batching a concrete product is just one leg of a successful readymix concrete business. "It is just as important to be able to supply the output at a competitive price and this is often where access to quality admixtures can make the difference," Kruger says.

As an example he cites the use of water reducing plasticisers. According to Kruger, the first Chryso product to be used extensively by 3Q Mahuma Concrete was Chryso Omega 136, a new generation water reducing admixture. The company then changed to Chryso Omega 174, a new generation water reducing plasticiser with further cost benefits.

3Q Mahuma has used Chryso products for a development in Sandton, Johannesburg (photo: Flickr/South African Tourism)

Both these Chryso admixtures enable us to significantly reduce both our water and cement use in the batching operations," Kruger says.

Ongoing extensive research and development undertaken by the admixture producer has seen it launch even more effective water reducing agents to the market, enabling enterprising readymix producers, such as 3Q Mahuma Concrete, to reduce operating costs even further.

Kruger says that the concrete producer also relies heavily on the well-known Chryso Optima 100 solution that not only provides quick strength abilities, but also the necessary retardation properties to deliver fresh concrete in heavily congested traffic, or over long distances to very remote construction sites.

However, it is the specific approach taken by Chryso Southern Africa that has ensured it remains 3Q Mahuma Concrete's preferred admixture supplier over the years.

"Our strength is based upon being a solutions driven supplier of readymix concrete, and Chryso Southern Africa's in-depth applications understanding and accessibility when it comes to providing technical input and support on admixture and construction chemicals has allowed us to maintain our edge in the South African construction industry," says Kruger.

By sharing extensive knowledge on extenders, retarders and accelerants, for example, Chryso Southern Africa has enabled 3Q Concrete Mahuma to supply complex concrete mix designs for a host of projects that range from large shaftsinking programmes for mines through to complex slide forming silo builds.

3Q Mahuma Concrete has also relied heavily upon construction chemicals from Chryso Southern Africa for many of its self-compacting concrete mix designs. Use of self-compacting concrete has become more popular because modern building requirements include heavy reinforcing which prohibits effective pouring and vibration of the concrete.

Just as important is the role that Chryso Southern Africa has played in helping the


3Q Mahuma has partnered with Chryso Admixtures (photo: electra)

concrete producer diversify its product offering. An example is the supply of mortar to prominent property development programmes.

3Q Mahuma Concrete first entered this market through the supply of about 50,000m3 of the material for the Mall of Africa development. This was over and above approximately 500,000m3 of readymix concrete supplied by the company to this development.

Extensive use was made of Chryso Stab which enables 3Q Mahuma Concrete to produce a “light and fluffy” mortar.

“It also retards setting times by as much as a day. This allows us to deliver mortar to the site in the evening, ready for the wet trades to commence using them in the morning on the following day. This ability helped keep the project on track, and certainly placed us in a very good light with the professional team working on the project,” Kruger says.

A similar quality product and service was supplied to other milestone projects including Times Square in Sandton and Menlyn Maine in Tshwane in Gauteng, while the company is gradually expanding this offering to other strategic growth areas of the country, including Brits, Steelpoort and Middelburg.

It is a given that onerous modern day construction projects rely heavily on admixtures. However, it is more than just securing a ready supply of these strategic materials. ■


Batching a concrete product is one part of a successful readymix concrete business, says 3Q Mahuma Concrete

"The Big 5" to open in Kenya in November 2016

Over 200 exhibitors will attend The Big 5 Construct East Africa 2016 at the Kenyatta International Conference Centre in Nairobi, from 2 - 4 November 2016

Announced by the Kenyan Government in April 2016, Kenya's first National Construction Week will open a new chapter in the development and progression of the East African construction industry.

From 2 - 4 November 2016, the Kenyatta International Conference Centre (KICC) in Nairobi will host The Big 5 Construct East Africa 2016 exhibition. Alongside this, the National Construction Authority's Second Annual Construction Research Conference and Exhibition (ACoRCE 2016) will run simultaneously.

Supported by the National Construction Authority (NCA) and Kenya Investment Authority (KenInvest), The Big 5 Construct East Africa 2016 event will bring over 200 companies and their products to Nairobi, along with more than three decades of experience in the organisation of successful exhibitions around the globe.

Organised by DMG Events, the Big 5 is the largest, most influential and renowned portfolio of construction industry events spanning the Middle East, India, South East Asia amd Africa. DMG also bring a network of more than 300,000 suppliers and buyers of construction products from more than 120 countries. Because of this, the Big 5 focuses on the specific needs of the construction industries of the countries where it takes place, enjoying support from both national and international institutions. The Big 5 Construct East Africa 2016 is sure to be no exception.

The show is also supported, beyond the NCA and KenInvest, by local government bodies and prominent associations. This includes the Ministry of Transport, Infrastructure, Housing and Urban Development, Ministry of Lands and Physical Planning, the Institute of Clerks of Works, the National Commission of Science, Technology and Innovation and the Town and Country Planners Association of Kenya (TCPAK), including many more.

Kenyatta International Conference Centre Square in Nairobi (Photo: Daryona/Commons)

According to Daniel O. Manduku, executive director of the National Construction Authority, "The time and resources invested in this partnership between the NCA and The Big 5 Construct East Africa will propel the Annual Construction Research Conference and Exhibition to greater heights, becoming the reference point in construction matters in the country".

> "The NCA is glad to have on board a world reowned exhibitions partner like The Big 5 Construct East Africa, which will bring to the local industry a wealth of knowledge and experience in construction materials and technologies"
>
> **DANIEL O. MANDUKU, EXECUTIVE DIRECTOR OF THE NATIONAL CONSTRUCTION AUTHORITY**

The event in November is expected to be the central meeting place for global manufacturers and decision-makers to network and do business in Kenya and the broader East African region. The Big 5 Construct East Africa 2016 will feature country pavilions of construction heavyweights such as Turkey, Italy, Germany and Greece, bringing together international, never-before-seen, innovative solutions to the local industry.

Focused on promoting the growth and development of the Kenyan construction industry, the Big 5 Construct East Africa 2016 and ACoRCE 2016 are unmissable events for construction professionals and serious buyers representing every facet of the industry. ■

Solid foundation for a continent under construction

If you want to describe the continent of Africa in one word, it is 'opportunities', says Dieseko Group

Towns evolve into small cities and formerly remote areas become more accessible as roads and bridges are built. This continent is under construction, and that means that chances and changes are every day's business.

It is because of these great developments that Dieseko Group is involved in this promising continent. More than 40 years ago Dieseko Group started engineering and building equipment for the foundation industry. Our brands International Construction Equipment (ICE), Piling & Vibro Equipment (PVE) and Woltman Piling & Drilling Rigs are internationally known for their service, reliability, robustness and high quality. Besides our equipment, we are proud of the long term relationship we have created with our customers worldwide.

The Dieseko Group hydraulic vibratory hammer is a foundation tool used for driving or removing steel sheet piles and tubes. A vibratory hammer is clamped on the steel profile and then vibration starts. The combination of vibration and weight of the vibratory hammer will drive the foundation element into the soil.

Basically there are two different types of vibratory hammers:

- Low frequency vibratory hammers with a fixed eccentric moment. Low frequency vibratory hammers are suitable for cohesive soils like clay and are produced under the ICE brand.
- High frequency vibratory hammers with a variable eccentric moment. High frequency hammers cause less vibrations in the surrounding area and are used in non-cohesive soil like sand. High frequency resonance free hammers are from the PVE brand.

A pile foundation is necessary when the load of a building is higher than the upper soil layer can bear. Piles are installed to avoid settlements which could result in damage and dangerous situations. Woltman Piling & Drilling Rigs engineers and produces compact size piling and drilling rigs designed for working in areas with limited access. The machines are equipped with a self-erecting leader, which considerably reduces the overall time of assembly.

Pile foundation crucial for tall builds (photo: Dieseko)

During the last decade we have invested substantial time and money in the African continent. We benefitted from meetings with local soil experts, construction companies and geotechnical professionals, which resulted in higher knowledge of the needs within the African continent. This thorough research and time investments resulted in a high quality dealer network. This means our clients profit from local support, from Egypt to South Africa. Our dealers are all professional companies with well-educated employees. They have profound knowledge of our foundation equipment and are available for local assistance 24/7.

The existing dealer network is represented in the following countries: Egypt, Nigeria, Mozambique, Angola and South Africa. We are currently looking to expand this network, in order to be more available for our customers. We truly believe in local support; as local professionals have the best knowledge on their own market.

In order to get in touch with potential dealers, we attend local events and fairs, like The Big 5 in Nairobi, Kenya.

Our foundation equipment has been used in various projects across the continent.

Waterpark in Zanzibar

The Bhakresa Group planned to establish a Water Park at Mtoni Marine Hotel at Zanzibar Island. The project has been commissioned to various expert companies in different stages. Our ICE 55NF vibratory hammer and V180 Vibroflot, both powered by our ICE 600 power pack, have been used to execute the driving of sheet piles and the ground improvement works of this large project.

New embankment in Egypt

Recently several machines have been sold in Egypt for a big project in Port Said.

One of these machines is the giant PVE 200M vibratory hammer which is being used to construct a new quay in Port Said, a crucial port in the north of Egypt. Because of the strategic location of the city, it is very important that the development of the new embankment is being executed in the right way and following a tight schedule. In the port, piles with a diameter of 2003 mm and a length of 2 x 35 metres have been driven. The project is expected to be finalised in 2017.

Rehabilitation of sheet pile wharf in South Africa

The wharf of East London suffered from a heavily corroded sheet pile structure, so a new structure was necessary. The new quay wall comprises an anchored combi-piled structure over a length of approximately 100 m. The new structure is being constructed approximately 1.1 m in front of the existing sheet piles. The space between the old and new quay walls is filled with commercially sourced crushed stone. Our customer Terra Strata Construction carried out the installation of the new sheet piles using the ICE 815C vibratory hammer and PVE 7NL hydraulic hammer, driven with the ICE 600RF power pack. ■

Steel specialists combine at NLMK Europe

NLMK Clabecq, NLMK Verona and NLMK DanSteel are to amalgamate the three specialists under the name: NLMK Europe - Plate. There is a considerable level of interaction between those three plants which has resulted in access to an even broader range of products and services. From medium to heavy plate, forged or hot rolled to ignots, you can rely on a complete range of steels in all dimensions and grades.

Clabecq specialises in thin plates. Their plant offers a renowned product, famous for its tight thickness tolerances, superior surface aspect and its flatness. This is due to years of expertise combined with unique production equipment, including a continuous finishing mill with four independent stands and the reversible quarto mill.

The plant at DanSteel is now under NLMK Europe (Photo: DanSteel)

With recent investments of more than US$530mn invested in European sites between 2007 and 2011, including a quench and tempering unit and an accelerated cooling system, NLMK Clabecq is an established key player in the niche market of line pipe, abrasion resistant steels up to 550 HB HB (Quard®) and steels with very high yield strength up to 1100 MPa (Quend®). Those special steels are available in thicknesses from three to 60 m, and they are renowned and appreciated by manufacturers from the construction and mining sectors.

NLMK Europe believe that niche products and competitive costs are not enough today. They believe the keys to success lie in creating learning organisations where the culture of continuous improvement and service excellence permeates in all parts of the company. Today, NLMK Europe use this ethos to keep building and progressing, delivery the best for the market and their clients. ■

Volvo CE's prototype autonomous wheel loader

Innovation runs strong at Volvo CE

Since 1832, Volvo Construction Equipment has revolutionised the construction industry with innovative ideas, driven by its passion to continuously improve

Innovation is at the core of Volvo Construction Equipment (Volvo CE), and has been since it was founded in 1832. The company wowed consumers with products such as steam engines, road rollers, and wheel loaders. But it was in 1966 that Volvo really cemented its place in construction, with the launch of the industry's first ever articulated hauler, the DR631.

Primary players in the construction market will most likely remember the day Volvo CE unveiled the DR631 articulated hauler, or 'Gravel Charlie' as it's commonly known. It's hard to believe this was only 50 years ago. The Volvo articulated hauler recently celebrated its 50th anniversary in Braås, Sweden, marking five decades of construction transportation, where the hauler journey was fondly remembered.

Telematics systems

The DR631 was just the beginning, paving the way for generation-after-generation of hauler innovation, helping Volvo consistently retain its market leading position in this product catergory. The introduction of systems, such as on-board weighing and CareTack some 40 years later, is just one example of Volvo's dedication to the segment. Working together, on-board weighing (OBW) provides operators with unprecedented insight into machine productivity. Using pressure sensors, the system monitors statistics like load weight and tons-transported-per-litre of fuel, and relays this information to software integrated into the machine's electronics. From there, it shows up in the operator's display and can be accessed via the Internet.

CareTrack is a telematics system that gives users access to a wide range of machine monitoring information, such as those acquired from OBW. Via a web portal, the system generates a wide range of reports including operational hours, fuel consumption and geographical location – it also sends SMS/email alerts.

In line with Volvo's core values, quality, safety and environmental care, the CareTrack portal can also reduce fuel costs, optimise machine and operator performance, as well as proactively manage service and maintenance to maximise uptime.

The two systems have been embedded into multiple machines, including a range of F-Series full-suspension articulated haulers – full-suspension articulated haulers were first launched in 2008. And in 2012, Volvo was awarded top innovator of the industry at the Intermat Innovation Awards for the F-Series OBW system. The award is presented to the most innovative equipment and technologies in the industry.

> "The A60H continues the tradition of delivering innovative technology, reliability, comfort, quality and safety - not to mention low cost of ownership - while also looking to the future

Most recently, intelligent systems such as OBW, CareTrack, MARTIS and Hill Assist (a dump support system), can be found on the A60H, the industry's largest ever 6x6 configuration articulated hauler. Unveiled this year at Bauma, the largest construction equipment exhibition in the world, the machine is designed for heavy hauling in severe off-road operations such as quarrying, open-cast mining and large earthmoving operations, and offers a viable alternative to rigid dump trucks, as well as a 40 per cent increase on Volvo's previous largest hauler, the A40. The A60H continues the tradition of delivering innovative technology, reliability, comfort, quality and safety – not to mention low cost of ownership – while also looking to the future.

Intelligent machines

So what does the future look like for Volvo CE? Each year the company invests in research and development to drive the evolution of its machinery. Although the technology may be years away from – or never even enter – production, it will undoubtedly influence the future of the construction industry.

The driver behind the new concepts is 'Triple Zero and 10x,' a challenge Volvo CE set itself in order to achieve higher efficiency. Not also forgetting the Volvo Group's aim to be the most desired and successful transport solution provider in the world. The challenge incorporates four key technology objectives: zero emissions, zero accidents, zero unplanned stops and 10x higher efficiency. This ambition has created a clear focus for Volvo CE and paved the way to creating a number of automated machine prototypes, concepts and intelligent systems, which stretch even the most innovative of minds.

At Bauma 2016, Volvo CE unveiled Volvo Co-Pilot, the award winning HMI (human machine interface) solution that enhances work efficiency to help bring higher quality outcomes in less time, with less effort.

Volvo Co-Pilot is for use on machines as diverse as excavators to pavers. It puts the user at the heart of the system and is the first step towards an integrated, holistic solution for worksite optimisation. Using a tablet computer interface, it delivers a new generation of intelligent integrated systems that make digging, loading, compacting and paving easier and better. The ingenious design of Volvo Co-Pilot derived from the GaiaX, a prototype concept compact excavator controlled by a tablet computer, launched in 2013. It was the first piece of machinery to use augmented reality for an industrial purpose.

Autonomous machines

Volvo CE believes that autonomous machines will increase safety in hazardous working environments and eliminate the possibility of accidents caused by human error. At this year's Xploration Forum, held in September in Eskilstuna, Sweden, Volvo CE impressed crowds with the demonstration of its prototype autonomous L120 wheel loader and A25 articulated hauler working together. The prototype wheel loader filled the prototype articulated hauler – before dumping its load and repeating the cycle. In a one-hour comparison it was found that the autonomous wheel loader could reach the equivalent of 70 per cent of that of a skilled operator's productivity levels when loading and unloading. This is not just theoretical; the machine has also done 'real work' for a Volvo CE customer at an asphalt plant in Sweden.

Although it's still early days for these autonomous machines, and there are no plans for industrialisation at this stage, this is a very promising start. However, at present, the prototype machines do not 'talk' to one another, and communication is a crucial element in avoiding collisions and facilitating an efficient flow of equipment. Once this solution is finalised, it could be applied to other products in the Volvo CE range, not just the L120 and A25.

Also showcased at the Xploration forum was the prototype electric hybrid wheel loader – known as the LX1. The Volvo Group defines electromobility as 'commercial vehicles and machines that can utilize an electrical motor to propel or to perform the main purpose of the machine'. A hybrid is classified as a machine that uses more than one power source and captures and reuses energy that would otherwise be wasted.

Energy efficiency is at the top of the company's agenda and the LX1 reinforces this, delivering up to a 50% improvement in fuel efficiency. The series hybrid incorporates a driveline consisting of electric drive motors mounted at the wheels, electric hydraulics, an energy storage system, a significantly smaller diesel engine and new machine architecture. It's this combination that enables the substantial gain in fuel efficiency - It's also capable of doing the work of a wheel loader that's one size larger.

The Electric Site

As part of Volvo CE's ambition to achieve 'zero emissions', the company is working on an electric site research project, which aims to transform the quarry and aggregates industry by delivering up to a 95% reduction in carbon emissions and up to a 25% reduction in total cost of ownership. The electric site solution involves developing new machines, work methods and site management systems including a new concept HX1 autonomous, battery-electric, load carrier, a hybrid wheel loader and a grid-connected excavator. New technology encompasses machine and fleet control systems and logistic solutions for electric machines in quarries.

The project will electrify a transport stage in a quarry – from excavation to primary crushing and transport to secondary crushing. By using electricity instead of diesel to power construction equipment in a quarry, Volvo CE can deliver significant reductions in fuel consumption, CO_2 emissions, environmental impact and cost-per-tonne. The electrification of construction equipment will produce cleaner, quieter and more efficient machines.

Volvo CE has teamed up with its customer Skanska Sweden, the Swedish Energy Agency and two Swedish universities – Linköping University and Mälardalen University – to collaborate on the SEK 203 million project. The electric site solution was unveiled to Volvo CE's customers, the international press, government representatives and academics at the Xploration Forum in Eskilstuna, Sweden.

The project started in October 2015 and is due to be completed in late 2018. Currently this work is just a research project, there are no plans for industrialization at this stage.

Connected and autonomous machines and hybrids and electric machines represent the future of the industry. Volvo CE is at the forefront of technological developments, driven by its passion for innovation and desire to fulfil its longstanding values. It is a very exciting time to be working within the construction industry, and Volvo CE has an undoubtably exciting path ahead.■

Volvo CE's concept HX1 autonomous, battery-electric, load carrier with the prototype LX1 hybrid wheel loader

Value-added service

Martin Knoetgen, president of Doosan Bobcat Inc in Europe, Middle East and Africa (EMEA) answers questions on recent developments at the company in the EMEA region

Can you explain the background to some of the decisions you have made in the last three years?

I joined Doosan Bobcat EMEA from the automotive industry in 2010 as vice president Operations EMEA, just as the construction equipment industry started to recover from the crisis in 2008/09. I became EMEA president for Doosan Bobcat in 2012.

When I arrived at the company I helped to implement changes to update our factories, especially our plant in Frameries where part of our excavator range for Europe was produced. By introducing the latest technology and manufacturing methods, we successfully increased productivity, as we prepared for what we believed would be a fast recovery in the construction equipment market in EMEA.

Unfortunately the perceived industry growth did not materialise as expected and today, six years later, the sales volumes in EMEA are still only 65 per cent of what they were at the end of 2007 in the heavy construction machinery sector and 75 per cent for the compact equipment market, respectively.

Despite the success we had in lowering costs and raising output at Frameries, the lower market demand for excavators in Europe meant that it was no longer cost efficient to carry on production at this site, and Frameries was closed in 2015.

Last year, Doosan sold its Montabert SAS subsidiary to Joy Global Inc. Could you explain the background to that divestiture?

The hydraulic breaker and drilling equipment ranges at Montabert did not offer good synergies with our core operations, so we decided to sell the business to Joy Global, where Montabert is an excellent fit with Joy's core business of designing, manufacturing, distributing and servicing high productivity equipment for the global mining industry. This evolution provides Montabert and its employees with the opportunity to work for a global mining equipment business that is active in all major mining regions in the world.

Could you explain your approach to the EMEA market?

To meet our aspirations, Doosan Bobcat has invested in new developments, infrastructure, manufacturing facilities and the growth of our people in EMEA.

The investment in the Bobcat telehandler plant at Pontchâteau in France has allowed us to significantly enlarge our telehandler product offering and improve product quality and efficiency.

But the changes have been even more profound at the Doosan Bobcat campus at Dobris in the Czech Republic, with the integration of every part of our operations and product development on one site, from engineering and design, sourcing, manufacturing, marketing, aftermarket, distribution and demonstrations to training for our EMEA dealers and customers.

Over the last decade, the compact equipment business in EMEA has been transformed from an importer model to a fully integrated manufacturer, exporting more locally produced machines than we are importing from North America or Korea. Because of these developments, 80 per cent of the compact product sold in the EMEA region is now made at Dobris.

Last year, I had the pleasure of officially inaugurating the new Innovation Centre at the Dobris campus. We are developing the Dobris Innovation Centre as a European Engineering Centre of

Martin Knoetgen, President of Doosan Bobcat Inc (Photo: Doosan Bobcat Inc)

Excellence, which will serve as an expert R&D centre for all Doosan engineering teams across EMEA and has taken responsibility for small loaders and compact excavators from 1-3 tonne. Our Innovation centre in Dobris is connected to two more centres in Bismarck (USA) and Inchon (Korea). We have also moved the European Parts Centre for the Doosan Heavy range of excavators, wheel loaders and articulated dump trucks in the last two years to Leipzig in German. The 6000 sq m Doosan European Parts Centre is housed in a large warehouse facility operated by Doosan's partner, DHL Supply Chain and provides 24-hour delivery of parts to Doosan dealers and customers door-to-door anywhere in Europe from a stock of over 43,000 parts.

In May 2016, Doosan Bobcat EMEA announced its intention to close its headquarters in Waterloo, Belgium. Could you explain the reasons for this?

This important strategic decision is a logical consequence of the footprint changes described above. The consolidation of the Doosan Bobcat EMEA Headquarter functions from the facility at Waterloo and the relocation of them to the main operational site in Dobris with its R&D, training and demonstration, production and logistical activities will provide the company with much higher effectiveness and generate even more synergies.

Finally, as well as Europe you are also responsible for Bobcat and Doosan Portable Power in the Middle East, Africa and Russia. Could you tell us more about the challenges in these markets and your plans going forward?

As well as the developments at Dobris, we have also instituted changes in our local operations in these markets. In 2015, for example, we opened a new Parts Distribution Centre (PDC) for Bobcat and Doosan Portable Power products in Dubai in the United Arab Emirates. The new PDC is a collaboration with Agility, a leading global logistics provider, which is hosting and managing the new facility at the Jebel Ali Free Zone in Dubai.

Designed to better serve our dealers and customers in MEA with better availability, shorter delivery times and lower logistical costs, the new Dubai PDC has made it possible for us to deliver parts to over 90 per cent of the region within 24 hours.

Whilst Middle East markets are suffering from the low oil price, the region is a very big market for us, and we will continue supporting our excellently performing partners there, where we enjoy an exceptional position with market shares of over 50 per cent for Bobcat loaders.

Russia has also been quite a difficult market recently, but there are signs of recovery, and we will enjoy success with our partners once market conditions improve. ■

Opportunities in Africa and beyond for Dressta

With growth in important, emerging African markets, improved production facilities and investment from China, Dressta is a truly outward-looking, international company, and its vice president is upbeat about the future

Dressta is making the most of Africa's growth markets, such as Ethiopia, Algeria, Kenya and South Africa. Howard Dale, vice president of Dressta, talks to *African Review* about the company's future.

African Review: Where are your main areas of operation in Africa?

Howard Dale: Dressta's largest region for sales overall is Africa and the Middle East. While traditional markets in Africa continue to be a major business focus we are seeing particular growth in Ethiopia, where we target our heavy-duty TD-25 crawler dozer into sugar applications or in Eritrea, where our TD-40 crawler dozers are preparing ground for a quarry. Our growth in this market has been stellar – we've been doubling growth in this area year-on-year for the past three years.

AR: How important is Africa to your company?

HD: In 2015, 40 per cent of Dressta's business was conducted in the Africa and Middle East region. Of this, Africa contributed about 70 per cent of that total. While key volumes are coming out of Ethiopia and Algeria, we're also enjoying strong sales into Kenya and South Africa. In South Africa we work with ELB Group, a strong company whose focus is in both construction and mining. While sales to the mining sector have slowed over the past couple of years in line with the global downturn, we've been able to rely on a reasonably strong roads and highways sector in that market.

AR: What are the main products that you are selling into Africa?

HD: One of our most successful and well suited models to the African market is the Dressta TD-25 Crawler Dozer. This model has found good success in two specific areas: mining, focused on iron ore and coal; and heavy infrastructure, particularly road and highway construction. With a powerful 246 kW engine, this model is ideal for ripping and grading in heavy duty operations and combines brute force with predictable and precise control. It is dependable and provides high levels of uptime in very hot climates across the sub-Saharan continent. Another sector in Africa that Dressta is also gaining strong enquiries from is the landfill and recycling sector. Our custom specification landfill crawler dozers feature large trash blades and low floatation and have proven highly successful in this market.

Howard Dale, vice president of Dressta, is positive about the future of the company, especially now that investment has come in from LiuGong

AR: Tell us about a flagship project.

HD: We supplied TD-25 units into Ethiopian sugar projects working with another major Polish supplier, Ursus Tractors. Our equipment is used to prepare the new sugar blocks, levelling the land and establishing proper fall to enhance the self-draining characteristics. This land clearing and levelling work forms an important foundation that opens the way for the plantation of the sugar to go ahead.

AR: Can you tell us more about your production facilities?

HD: We've made a number of changes to our production facilities to ensure our products are manufactured to the highest quality standards and delivered in a timely manner. One of the biggest developments has been the introduction of a SAP system in 2015. Dressta as a business is now fully SAP integrated covering purchasing, sales forecasting, inventory management and our parts business. We've also made changes to our production layout – transitioning from a build-for-stock model to a build-to-order model in line with the demands of the industry. This allows us to reduce delivery lead times and to place the right products with our dealers to meet customers' specific requirements. Overall, these changes have significantly improved our materials planning and enabled more accurate forecasting to ensure we can continue to improve our supply times.

AR: How has the LiuGong Machinery's investment helped you to access new markets and boost exports?

HD: As a subsidiary company of LiuGong Machinery, we've been able to significantly drive growth in the business. First and foremost, we've been able to improve Dressta parts supply times by leveraging the seven regional parts and distribution centres that LiuGong operates around the world. We now have locations in Singapore to serve Asia Pacific; in China for the home domestic market; in Brazil for Latin America; and the Netherlands for Europe. These facilities allow us to put parts and importantly, technical support services, closer to our customers and dealers. This is a key driver of customer satisfaction. Between LiuGong and Dressta there are a number of dealers who sell both brands. For example, our dealer in the United Kingdom, Construction Machinery & Plant Services, does an excellent job for both LiuGong and Dressta. Through this dealer we're able to serve their customers with an even broader range of excavators, wheel loaders and crawler dozers to suit demolition, road and highway projects and aggregates. The aggregates business in the UK is starting to develop nicely for both LiuGong and Dressta.

AR: Do you seen any emerging trends taking shape in Africa or in your industries?

HD: As coal and iron ore energy prices recover, we believe the crawler dozer market will continue to grow in this important region. As well, agricultural investments in the African region will continue to develop at pace, and we expect to see a lot more demand for crawler dozers to develop new blocks of land and plantations for sugar. Many projects in Africa are funded from China, and many Chinese contractors have the lead advantage to work in those markets. We continue to work very closely with some of our close contractors in China to be able to take advantage of these opportunities, and this is allowing us to reach out to new markets and new countries. ■

Malawi aligns mining policy to the AMV

Stakeholders are flying the flag for responsible mining in Malawi (Photo: nchenga/Flickr)

The Malawi government has aligned its mining regulations and new petroleum policy with the African Mining Vision (AMV).

This was announced at a three-day stakeholder consultative meeting led by the Ministry of Natural Resources, Energy and Mining with the support of the African Minerals Development Centre (AMDC).

The AMV was developed by the United Nations Economic Commission for Africa in 2008 as a response to "tackling the paradox of great mineral wealth existing side by side with pervasive poverty", according to the organisation's website. It advocates environmental protection; integrating mining to development policies at a local, regional and national level; ensuring tax revenues from mining are optimised; and ensuring workers and communities benefit from the industry.

As well as aligning the country's mining policy with the AMW, the meeting aimed to review Malawi's 1981 Mines and Minerals Act. Malawi's government was able to have frank discussions with major stakeholders in regard to governance issues on the extractive industry and the process of passing a bill by the country's legislature.

Fatima Haram Acyl, commissioner for the Department of Trade and Industry at the African Union Commission, told the meeting that Malawi's effort is part of a larger "historic paradigm shift" where African states are going beyond the current understanding of the value of minerals by investigating fiscal, downstream, upstream, knowledge and spatial linkages in the mineral sector.

In a statement released by the deputy executive secretary of the Economic Commission for Africa, Abdalla Hamdok said: "This meeting marks yet another important milestone in our collective agenda toward facilitating the structural transformation expected to result in unlocking Malawi's potential as a major mineral-driven economy."

MOVEMENTS IN SOUTH AFRICAN COAL MINING

Rio Tinto has sold its stake in South Africa's Zululand Anthracite Colliery (ZAC). while in the Witbank Basin coal region, Universal Coal has started production at the New Clydesdale Colliery (NCC).

In Zululand, Rio Tinto held a 74 per cent stake in ZAC and this has been sold to Menar for an undisclosed sum.

Maweni Mining Consortium, Menar's Black Economic Empowerment partner, continues to hold the remaining 26 per cent. The underground mine produces anthracite for international and domestic customers and employs more than 1,300 people.

Menar operates and invests in South Africa through its controlling interest in Canyon Coal, which owns three coal mines in Mpumalanga, as well as other related projects in Mpumalanga and Gauteng.

In March, the colliery was closed due to an arson attack at the mine's Ngwabe shaft, injuring one person.

Following this sale of interest, Rio Tinto said it will continue to invest in Richards Bay Minerals and exploration for other minerals in South Africa.

Meanwhile, Universal Coal started production at NCC from mid-September. The first production run-of-mine (ROM) coal occurred from the Diepspruit underground area at NCC and the first continuous miner section is slated to come onstream soon. Production is set to be increased to full capacity before the end of 2016. Coal mining contractor, STA Coal Mining, has been appointed and is responsible for underground mining at NCC.

NCC is in the second phase of development. This is expected to deliver up to a further two mn tonnes per annum ROM of domestic or export quality thermal coal.

Ingwenya Mineral Processing was appointed in August to refurbish the coal handling and processing plant.

FURNACE STOPPED AT WATERVAL SMELTER

Anglo American Platinum has stopped a furnace at Waterval smelter in South Africa after detecting a molten matte leak from the unit's hearth. This closure is expected to impact on platinum production for this financial year by between 70,000 and 100,000 platinum ounces.

Additionally, the company implemented emergency procedures and completed a preliminary assessment of damage to the furnace. This assessment found that rebuilding the unit should be brought forward to mitigate any potential operational risks in the future. The rebuilding process and associated production ramp-up may take up to four months to complete at a cost of around US$8.71 mn.

The closed furnace accounts for around 20 per cent of Anglo American Platinum's smelting capacity. The remaining smelters at the Waterval plant are operating at full capacity and the incident did not impact on the previously guided range of produced metal in concentrate of 2.3 mn to 2.4 mn platinum ounces.

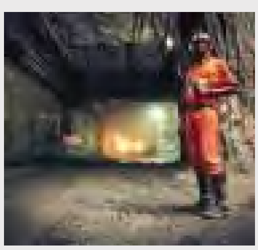
BRIEFS

New MD for Mining Indaba

Investing in Mining Indaba, the world's largest mining investment event, has appointed Alex Grose as managing director, replacing Jonathan Moore who is leaving after almost nine years at the helm. Prior to joining Mining Indaba, Grose was commercial director for Capacity Media, a division of Mining Indaba's parent company Euromoney. In his seven years with Capacity, he launched events on five continents. The next event will be held in Cape Town from 6-9 February 2017.

Mining Indaba's venue

Successful Acacia shutdown



A worker at the Bulyanhulu mine

Acacia's Bulyanhulu gold mine in Tanzania has completed a successful two-week shutdown in August and September. This was implemented to refurbish and modernise the production and service winders, as well as a programme of works on the process plant. During the shutdown, a surface stockpile of 11,300 ounces was built, with a further 7,400 ounces in stockpiles underground. Full scale hoisting was recommended at the plant in early September.

Hatch Goba are working across both metal and mining sectors (Photo: Hatch Goba)

Reducing costs and optimising assets

How new technologies are used to support initiatives aimed at improving mining and mineral processing

The Mining and Minerals Processing Business Unit at Hatch Goba is a global Centre of Excellence in deep-level mining, shaft infrastructure and hoisting capability. The focus on continual innovation means it is well placed to meet the challenges posed by current mining and economic conditions.

An ongoing trend is the perpetual quest to reduce operating costs and thereby retain the best mining assets possible. "Obviously there are different players in the mining industry," says Kevin Seyfried, director mining AEM, associate at Hatch Goba. "The senior level has a very different appetite for projects. We support all companies, from the juniors up. It is also trying to see where you should, and should not, spend your money. If you are a big organisation, the structures and fixed costs are much different. Even for the lean-and-mean operations, we are able to provide a lot of support. While these often do not have the same in-house acumen as the larger mining houses, they have the drive and appetite to take smaller mines into the future. Therefore the smaller players also have a critical role to play."

Seyfried believes it is this flexibility that gives Hatch Goba a leading edge in the mining industry, not only in Africa but globally. "What sets us apart from other EPCM consultants operating on the continent is our ability to engage globally on any type of project. We work across various sectors, from infrastructure to metals and energy. Thus we are able to provide a client with whatever they might need, from an energy solution to accompany a mine and a railroad link to the nearest port, as well as the logistics in linking with their own customers."

Gateway logistics

Seyfried continued: "It does not stop at mining and mineral processing. We call it 'gateway logistics': we cover the entire spectrum. Whether you need public or commercial infrastructure, marine, environmental or mining, we can do anything. There is almost nothing we cannot do as a company. That gives us the competitive edge because it means our clients do not have to engage various sub-consultants. By tapping into the opportunity of using one centralised company, there is less interface and it makes project management that much smoother.

In addition to this approach, Hatch Goba is also able to drive ancillary synergies. "We can, as a company, deploy people across disciplines. You will not have multiple managers because you have a single point of contact, eliminating the number of communication channels. We manage ourselves. This is part-and-parcel of our ability to give our clients exactly what they need, which also extends to working with any business model or contract type, not only in the EPCM space.

"We are not prescriptive in how things should work. We sit with our clients to determine what their needs are. We provide them with opportunities to opt for the various structures we are able to offer. There is no project that is too small or too big either. We are disseminated worldwide, which means we can always find expertise in whatever is required."

Hatch Goba differentiates itself from EPCN contractors by its ability to engage globally on any type of project (Photo: Hatch Goba)

Key driver

This expertise is a key driver for both Hatch Goba in Africa and the global company itself. "We have a continuous global innovation drive. Hatch has a lot of patents, which means its technology never stagnates. We are always striving to get new technologies onto the table and our experts out into the field, because that is how you add value to the industry," Seyfried adds.

In a South African context, Seyfried says that many of Hatch Goba's mining clients are testing new technologies in tandem with OEMs.

"The position we are sitting with now is that mining is getting deeper, together with the lower commodity prices and reduced profit margins as a result. We are continuously developing more cost-effective means of getting the ore out."

While mechanisation plays a major role in this regard, Seyfried says that current technologies are mostly suited to wider reefs. "It is when you get to the deep narrow reefs when it becomes a challenge, when a mineworker can have access per se but the equipment is too large to enter. There is a lot of development in the deeper, narrower-reef field, and we are staying on top of it."

The technologies relating to underground access and shaft sinking are also evolving at a rapid rate. "Hatch Goba is very close to these developments, and many clients rely on us as technical partners due to our extensive knowledge of the market. We also make use of our global offices, with their expertise outside of pure mining, to influence the way we mine and approach technology application in other sectors."

From lasers to solution mining

Seyfried says that trends such as lasers and solution mining are all predicated on not exposing the workforce to any hazards or dangerous working conditions. "Mechanisation limits people exposure; it is not just about increasing production. Health and safety considerations are a major driver for mechanisation, as it removes mineworkers from the face, especially in deep-level mines, where there are rock bursts and seismic activity. Technologies that allow for remote control of mining equipment ultimately means more face time and increased efficiencies and outputs."

An example of Hatch Goba's innovation in action has been its involvement with the Mufulira and Mindola shaft projects for Mopani Copper Mines in Zambia. Seyfried explains that the project commenced originally with the Synclinorium shaft, whereupon the client opted for further development and two additional shafts.

"Our recommendation was to examine the commonalities between the two shaft systems in terms of depth and production rates, for example. We looked at what could be rendered common, and thus which only needed to be designed once. The other option was to adopt a base design to just tweak this where necessary for each shaft," Seyfried highlights.

Reducing total capex

"It was standardisation as far as what was practically possible between the two shafts, including standard equipment specifications, which is an essential factor in terms of spares and critical maintenance. This approach not only assisted in reducing the total capex of the project, but will also contribute to a major saving in terms of opex going forward."

Seyfried explains that his role as mining and minerals processing business unit director is to direct the company's efforts regionally, from Europe to the Middle East and Africa, "The biggest focus up to this stage was Africa, obviously being work-dependent. We are expanding even further into Europe and the Middle East, as not all areas of Africa are conducive to business due to various constraints, confrontations and challenges."

Hatch operates both locally and internationally, and in terms of any commodity and mining method. Due to the particular skills set in Hatch Goba in terms of deep-level mining in particular, the South African office has a Global Response arrangement with South America, Brazil, Canada and North America. While the project management itself generally takes place in the country of origin, Global Response integrates international expertise with the local teams. Global Response is not just out of this hub, it is also into this hub. When we know we have certain niche skills sets elsewhere, we will make use of these so that our clients can benefit from that offering. It is not just that the South Africans are the heroes, we make use of the heroes in other countries as well," Seyfried concludes. ■

EGYPT TO RELY LESS ON THERMAL POWER BY 2022

Power outages due to gas and fuel shortages mean a reduced reliance on thermal power from 91 to 57 per cent capacity in Egypt within eight years, according to the Electricity Report 2016.

According to the report, produced by Mena Research Partners (MRP) in partnership with Egytec and Informa, the country is planning to scale down the use of thermal power mixes in favour of a more diverse mixture of coal, wind, solar, hydro and thermal.

The biggest sectors to grow from these changes are the coal, wind and solar sectors. Thermal, which as of 2014, generated around 91 per cent of the electricity for Egypt, will be generating 57 per cent by 2022.

The report has stated that it is an 'objective to reduce the excessive reliance on thermal power, which is leading to power outage due to natural gas and fuel shortages'.

The Supreme Energy Council has also taken the decision to adopt a National Energy Strategy, which should transform the efficiency of the energy sector in Egypt. The thermal sector has a large amount of room for growth, as some of the infrastructure is more than 20 years old.

Cityscape of Cairo will bepowdered differently from now on (Photo: Leonid Andronov/Shutterstock)

While the drop in capacity from the thermal power sector may be bad news for suppliers and producers, the minister of Electricity and Renewable Energy is targeting to supply an additional 54GW of power by 2022.

While the diversification of the energy sector may seem like bad news for the thermal segment, this potential growth could still offer huge opportunities for many energy providers with diverse power supplies.

In addition, this trend in energy diversification is happening all over the world. The International Energy Agency report - World Energy Investment 2016, was presented in London in September.

Investment trends show that 70 per cent of investments from 2015 were in renewables. As Fatih Birol, chief economist at the International Energy Agency stated in September, “There is a broad shift towards investment in cleaner energy.”

Laszlo Varro, the head of Economics and Investment Office at the IEA said that the trends were to be expected. “Companies like Google are more likely to invest millions in renewables in a way that they would not want to be seen buying up oil fields.”

This shows that countries such as Egypt are on the cusp of energy investment trends.

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