

TECHNOLOGY

Increasing IT spend by South African banks **P28**

TRANSPORT

The running costs and attributes of new off-road vehicles **P30**

CONSTRUCTION

Safety measures in the scaffolding industry **P60**

MINING

New investment opportunities in minerals operations **P72**

African Review

JULY 2016

of BUSINESS and TECHNOLOGY

ECONOMIES



Technical Service & Spare Parts

Diesel&Gas
GENERATOR SETS
LIGHTING TOWERS



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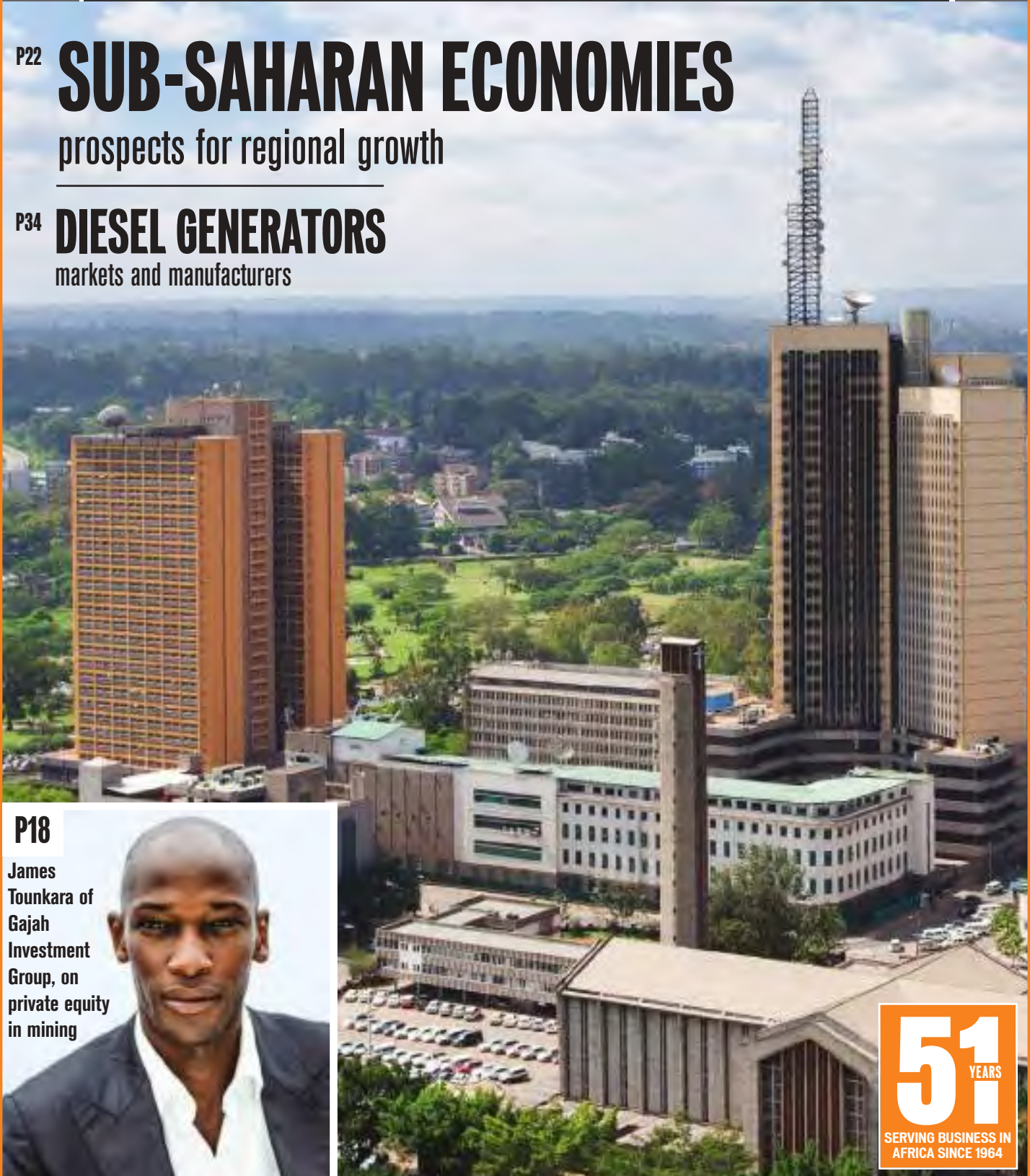
African Review

JULY 2016

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P22 SUB-SAHARAN ECONOMIES
prospects for regional growth

P34 DIESEL GENERATORS
markets and manufacturers



P18

James Tounkara of Gajah Investment Group, on private equity in mining



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Editor's Note

This issue of African Review features the opinions of Gajah Investment Group MD James Tounkara, on corporate performance in construction markets and on private equity investment in mining sectors. There is also economic analysis, in the form of assessments of investment risks in Sub-Saharan Africa and the industrialisation of the continent's emerging territories. This issue reports on investment in various forms of technology and new business models for finance. Herein also is advice on the best off-road transport available today.

A key report in this issue is the annual genset analysis, which covers the key markets for standby power and developments amongst the manufacturers supplying generators. Several key companies are profiled in these pages.

This issue also delivers on renewable energy, and closes the power section with a review of Africa Energy Forum and a preview of POWER-GEN/DistribuTECH Africa.

Key notes from the construction industry include articles on engineering, scaffolding and asphalt. There are also reports on investment to develop infrastructure. In mining, investment is also a core focus, but is complemented in these pages by reports on gold mining.

Dr Andrew Croft, Managing Editor

Nairobi has experienced growth in the banking sector in recent years - to find out more about banking, finance and technology, see page 24

Contents

- 18 Profiles**
Gajah Investment Group MD James Tounkara speaks on private equity investment in mining
- 22 Business and Technology**
Risks to growth in Sub-Saharan Africa; network technology for banks; a new model for e-payments; and IT investment by South African banks
- 30 Transport**
The latest off-road trucks on sale in African markets
- 32 Power**
Analysis of genset markets and manufacturers; key notes for generator maintenance; renewable energy and utilities in East Africa; public and private sector engagement at Africa Energy Forum; and a preview of the POWER-GEN/DistribuTECH Africa
- 56 Construction**
Managing risks for large engineering projects; investment in high-rise buildings in Ghana; emphasising safety as demand grows for scaffolding and formwork; a symposium for the asphalt emulsion industry; improved performance, ergonomics, economy and emissions in Bobcat's new excavators; GIZ hosts a forum for urban development infrastructure; and the supply of high-quality sand to meet increasing demand in North Africa
- 70 Mining**
Skills transfer and job creation at the Mopani Copper Mine in Zambia; Scott McCaw, managing director at Panafrican Group, discusses investment opportunities in minerals operations; and investment prospects for gold mining operations in Uganda



EBRD supports competitive lending to Tunisian SMEs

The **European Bank for Reconstruction and Development (EBRD)** and the **Ministry of Finance of Tunisia** have signed a Memorandum of Understanding (MoU) allowing the country to become eligible for domestic lending to small and medium-sized enterprises (SMEs) in local currency under a new EBRD programme. In parallel, the Tunisian Ministry of Finance intends to take measures to improve local currency intermediation, develop local capital markets and increase financial stability in Tunisia.

The MoU was signed in Tunis by Minister of Finance Slim Chaker and by Hildegard Gacek, EBRD managing director for the southern and eastern Mediterranean (SEMED) region.



Marie-Alexandra Veilleux-Laborie, head of Tunisia, EBRD (Photo: EBRD)

The EBRD operates an SME Local Currency Programme, which helps countries implement reforms and develop local capital markets. The Programme enhances access to affordable local currency funding for SMEs and increases the availability of sources of local currency funding. Under the Programme, the EBRD can provide local currency loans to SMEs at interest rates that aim to stimulate the local currency loan market.

Hildegard Gacek said, "This MoU is a very important step towards increasing access to finance for SMEs in Tunisia as it will allow us to bring the successful SME Local Currency Programme to the country. Tunisia continues to commit itself to a reform programme that will improve, broaden and deepen local currency intermediation and local capital markets."

Marie-Alexandra Veilleux-Laborie, head of EBRD operations in Tunisia, commented, "The SME Local Currency Programme in Tunisia will allow the EBRD to lend at competitive rates in Tunisian dinars to local SMEs, which are the backbone of Tunisia's economy. This confirms the EBRD's commitment to the country and its strong willingness to support the development of the Tunisian private sector."

For his part, Slim Chaker said, "This agreement with the EBRD is in line with the efforts of the Tunisian government to support Tunisian economy and SMEs. The implementation of this agreement will allow entrepreneurs to benefit from a new competitive rate to finance their projects while protecting them against foreign exchange risk."

AFDB SUPPORTS EGYPTIAN PROJECTS

Representatives of the **African Development Bank Group (AfDB)** and the **Government of Egypt** met on the sidelines of the AfDB's Annual Meetings in Lusaka recently to sign two grant agreements amounting to US\$860,000 to help finance water and agriculture projects in Egypt.

The first grant, to the tune of US\$290,000, will support preparation of the feasibility study for integrated sanitation technologies in some rural areas in Upper Egypt. This study is financed by the **Korea-Africa Economic Cooperation Trust Fund (KOAFEC)**, which is managed by the African Development Bank.

The second grant agreement of US\$570,000 will complement the Bank's support to Egypt's National Drainage Programme, which aims at optimising the benefits of irrigation by draining excess irrigation water from agricultural land in order to reduce water logging and consequent soil salinity, in addition to making more land available for cultivation.

EUTELSAT EXTENDS TUNISIAN BROADCASTING

The **Tunisian broadcasting corporation (ONT)** recently signed a multi-year contract with **Eutelsat Communications** to broadcast its new subscription-free TV platform across North and West Africa. ONT has selected the Eutelsat 7 West A satellite to reach viewers across the region.

The ONT is consolidating around ten Tunisian channels in a single package at 7/8° West, North Africa's leading satellite broadcasting neighbourhood. Eutelsat 7 West A's footprint also enables the ONT to extend reach to West Africa. Homes equipped with a satellite dish pointing to 7/8° West will be able to enjoy improved image quality and easier navigation of the channels in the platform.

“ONT is strengthening its portfolio of capacity on Eutelsat, adding to resources...for newsgathering and broadcasting to the general public.”

MICHEL AZIBERT, CHIEF COMMERCIAL AND DEVELOPMENT OFFICER, EUTELSAT

Nôomèn Elfehri, Tunisia's Minister of Communication Technologies and Digital Economy, said, "The launch of this national project is a vehicle for Tunisia's sovereignty in the field of broadcasting. Viewers will be able to enjoy a diversified and quality line-up of Tunisian content."

► BRIEFS



Reporting on Libyan labour

A new **World Bank** report analyses the current potential of the Libyan labour market, with policy suggestions to aid the country's stabilisation and economic recovery. Focusing on the need for inclusive jobs and stable institutions to facilitate private sector growth, World Bank recommendations include public-private partnerships to support entrepreneurs, job placement and on-the-job training, and improving labour contracts in the private sector.

Djezzy licensed to provide next-gen mobile

VimpelCom Ltd and **Global Telecom Holding SAE (GTH)** have confirmed that **Djezzy**, their market-leading subsidiary in Algeria, has been awarded one of three licenses to provide 4G/LTE mobile telecommunications services in the country. "Algeria is a key market for VimpelCom and GTH and we are pleased to play a role in the further development of the country's digital economy," said Jon Eddy, VimpelCom's head of emerging markets and chairman of GTH. Djezzy has the largest network in Algeria with the widest coverage and is investing significantly to upgrade its networks further. This includes modernising 2G services and completing the full deployment of 3G in all 48 of Algeria's provinces by the end of 2016.

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International investors explore opportunities at TIFI in Dar es Salaam

With confirmed funding commitments amounting to US\$1bn and confirmed participation from global investors and funding institutions in control of more than US\$200bn, the Tanzania International Forum for Investments (TIFI), held at the Julius Nyerere International Convention Centre in Dar es Salaam in mid-July, boasts participation by several leading financial institutions. Participating entities include: **Credit Suisse International, Africa Finance Corporation, Nedbank, UK Climate Investments, Pembani-Remgro Infrastructure Fund, Nedbank Corporate and Investment Banking, Intertoll Africa (Pty) Ltd, Advance Consulting, Letsema Consulting & Advisory (Pty) Ltd, Afiwise Consult, Development Bank of Southern Africa, Advanced Finance & Investment Group (AFIG Funds), Centre for the Promotion of Imports from developing countries – Netherlands, CRDB Bank Plc, ZHE Africa, East Africa Trade and Investment Hub, Kibo Mining Plc, Rand Merchant Bank, Frontier Investment Management (FIM), German International Cooperation (GIZ), Mkoba Private Equity Fund, Kibo Capital Partners, CrossBoundary LLC, Metier Sustainable Private Equity, SME Impact Fund, MasterCard, and Public Investment Corporation -Africa.**



Godfrey Simbeye, executive director, Tanzania Private Sector Foundation

Led by the **Tanzania Private Sector Foundation**, TIFI 2016's interactive sessions have offered entrepreneurs, investors and financiers viable platforms to build relationships and forge business-to-business and business-to-government partnerships. Specific investment opportunities represented by the forum cover multiple sectors including: Agriculture & Agro-processing, Tourism, Energy, Manufacturing, Infrastructure, telecommunications & ICT, Mining, and Financial services. Following the event, investors and participants at decision-making level are expected to continue exploring investment potential on behalf of local and foreign companies, public institutions, and other relevant stakeholders.

Godfrey Simbeye, executive director at the Tanzania Private Sector Foundation, encouraged investors participating in TIFI 2016 to "explore the abundant opportunities available in Tanzania, where return on investment is among the highest in Africa". Mr Simbeye added, "Should you wish to partner with local investors, we are ready to be of service to link you with credible local companies."

VEHICLE FINANCE FOR UBER-BASED BUSINESSES

Uber and **Sidian Bank** have partnered to launch an Uber Vehicle Solutions Programme, giving driver-partners and business investors convenient and affordable access to the quality vehicles they need to start or grow their Uber-based businesses. This comes shortly after Uber celebrated one million rides taken in Kenya, in the 15 months of operation from its launch in February 2015.

The vehicle access initiative includes a vehicle finance component delivered through Sidian Bank and a vehicle leasing solution made available through **Zohari Leasing**. The initiative is valued at a total of approximately Ksh10bn (US\$100mn). It follows similar offerings that have recently been launched by Uber in partnership with **WesBank** in South Africa. Nate Anderson, acting general manager for Uber in Kenya, said, "We are also building an even more sustainable ride-sharing network in Kenya, which moves us forward towards achieving our vision of being a first-choice transport solution for everyone in the country."

AWARDS FOR SUSTAINABLE ENERGY ENTERPRISES

Two sustainable energy organisations operating in East Africa have both won a 2016 **Ashden** International Award for excellence in their field, with each winner receiving support to scale up their work.

Winner of the Ashden Award for Innovative Finance, supported by **Citi, SunFunder** provides a reliable and continuous source of debt financing to solar businesses by giving investors the opportunity to lend to a carefully selected portfolio which helps spread the risk. Audrey Desiderato, COO of SunFunder, said, "Solar energy is the most viable solution to replace fossil fuel energy sources and to increase energy access around the world. Yet, solar companies serving off-grid and grid-deficit communities face one common barrier - access to finance."

Greenlight Planet, which to date has reached over five million households across the world with its Sun King solar products, makes 45 per cent of its sales in East and Southern Africa and has a well-established network of sales agents in Kenya and Uganda. It carefully screens and selects strategic partners who can distribute its products out to the most remote regions and overcome final barriers to purchase such as affordability for the poorest consumers. **Greenlight Planet** won the Ashden Award for Increasing Energy Access, supported by the **IKEA Foundation**.



SunFunder credit associate Joshua Kabugo and financial analyst Baraka Megiroo at the company's office in Tanzania

BRIEFS

HID demonstrates smartphone ID solution

At ID4Africa, held recently in Kigali, Rwanda, **HID Global** demonstrated its goldID platform for mobile IDs that enables driver licenses and other government IDs to be carried on smartphones. HID goldID extends trust to offline mobile credential authentication, while enabling secure access to cloud-based government services. It is powered by the company's Seos technology, which provides a safe and secure way to provision mobile IDs to smartphones, and adds trust and security to citizen IDs. The company also promoted its new thin electronic polycarbonate datapage and innovative security features, which enhance a customer's design choices without compromising quality, security or durability. It is one of the thinnest available on the market, reducing e-passport thickness, and providing increased flexibility and security.

Kagame, Kenyatta endorse new deal on energy

Rwandan President Paul Kagame and his Kenyan counterpart Uhuru Kenyatta have endorsed **African Development Bank (AfDB)** group president Akinwumi Adesina's 'New Deal on Energy', a vehicle through which the AfDB will invest in delivering electricity for all Africans by 2025. The AfDB has pledged to commit US\$12bn over the next five years to invest in energy alone.

President Kenyatta said, "We must invest in connectivity to enable those that have more of electricity resources to share with those that have less of it." Currently, only about 16 per cent of Africans are said to be connected to some sort of energy source with another over 645mn Africans having no form of access to electricity. Over 700mn don't have access to clean energy for cooking.



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AfriSam and the Royal Bafokeng Group to create enterprise opportunities

Construction materials group **AfriSam** and **Royal Bafokeng Group** subsidiary **New Business Consulting** have signed a Memorandum of Understanding (MoU) aimed at facilitating enterprise development and creating job opportunities for the Royal Bafokeng Nation in South Africa.

As part of the MoU, a number of enterprise development opportunities within the Bafokeng area have been identified and are currently being investigated. Amongst these is the establishment of containers as cement sales outlets as well as a premix bagged product manufacturing facility.

"All the projects we have identified strongly align with, and support, the strategic objectives and enterprise development goals of the Royal Bafokeng Group and should create shared value for all parties involved, including the local community," said Roshni Lawrence, strategic growth executive at AfriSam.

AfriSam has an extensive network of cement, aggregate and readymix operations, which enables the company to play an active role in the growth and development of most regions in southern Africa. It is this network that gives the company access to some of most remote locations in regions around South Africa and allows it opportunities to build relationships with communities surrounding its operations.

"We are on track to offer commercially sound services and quality products at competitive prices to the mines that we, as the Royal Bafokeng Nation, own and those operating in our land through land leases. We aim to further assist our neighbours from other mining communities and local municipalities to set up enterprise development projects with them," said Ernest Mogopodi, chairperson at New Business Consulting.



Back from left: **Ian Venter (MD of Royal Bafokeng Enterprise Development)**, **Moss Ramatja (New Business Consulting)**, **Itu Diala (Women Group of New Business Consulting)** and **Damaria Masilo (Women Group of New Business Consulting)**

Front from left: **Gerhard Maree (AfriSam)**, **Roshni Lawrence (Strategic Growth Executive, AfriSam)**, **Ernest Mogopodi (Chairman of New Business Consulting)** and **Kgosana Phillimon Rabyae (Tau Bashiga Community Development Trust)**

ENEL STARTS ON SOLAR PLANT IN SOUTH AFRICA

Energy firm **Enel**, through its subsidiary **Enel Green Power RSA (EGP RSA)**, has completed and connected to the grid the Tom Burke photovoltaic power plant, which is located in South Africa's Limpopo province. "With the completion of Tom Burke, Enel takes its installed capacity in South Africa to nearly 160MW," said Lamberto Dai Pra, Enel's country manager in South Africa.

"Furthermore, we have more than a gigawatt either recently awarded or already under construction, leveraging on the huge potential offered by this resource-rich country. The South African energy market is on the point of a very interesting evolution and we are developing an increasingly integrated presence in the country."

EGP RSA has coupled its renewable generation base with **YouPower**, a retail company combining distributed generation, storage and digital energy services.

D&D DISTRIBUTES FOR ORBITALUM TOOLS

Industrial piping enterprise **Orbitalum Tools GmbH** has appointed **Actum Group** subsidiary **D&D Industrial** as its exclusive South African distributor.

Orbitalum Tools is part of the **ITW Welding Group**, which specialises in welding products (**Miller Electric**, **Hobart**), **TIG** torches and accessories (**Weld-Craft**), welding consumables and gas equipment (**Hobart**, **Elga**) and automated welding equipment (**Jetline**).

Actum Industrial clinched the agency via **Orbital Cutting & Welding** of Dubai, in the UAE, which represents Orbitalum. The company is looking to make inroads into the South African market. When Kumar Sundaram, head – Middle East and Africa at Orbital Cutting & Welding, visited South Africa recently to conclude the agreement, he confirmed that the company's growth strategy. Actum group director Greg Barron also said, "The Orbimat range of welding equipment is ideal for the South African market."



The Orbimat 165 CA power supply for orbital welding

Representing the latest technology, the company's equipment is user-friendly and low on maintenance, which are critical factors in low-skill environments.

"We will be targeting the agricultural and food and beverage sectors in particular, which represent an exciting new market for Actum Industrial. This is in line with our strategy to continually diversify with new reputable brands into different sectors," Barron said.

BRIEFS

Gijima to supply NEC systems to Jo'burg police

In South Africa, the **City of Johannesburg** has commissioned Gijima, **NEC's** system integration business partner in the country, to provide - in partnership with **Dimension Data** - a completely new unified communications & collaboration (UC&C) solution for its Metro Police offices in Martindale.

Gijima has worked for the City of Johannesburg for over 20 years.

The project involves the delivery and installation of multiple NEC servers and NEC's software-based Univerge 3C UC&C solution supporting over 2,000 users. The solution includes soft media phones for 500 PC-based, Android or iOS users, state-of-the-art audio and video web conferencing and multiple PC-based operator and supervisor positions. NEC's BX-series gateways and session border controllers complete the total solution.

Ugandan tractor driver training



CMC Motors Group trained tractor operators with the New Holland TS6.110 at sugar companies in Uganda

CMC Motors Group, distributor for **New Holland Agriculture** in Uganda, has held product training courses for the tractor operators of the country's two major sugar companies, **Kakira Sugar Works** and **Sugar Corporation of Uganda**. The courses involved 257 drivers, and spotlighted the New Holland TS6.110 tractor. Trainees were taught how to use the machine effectively and safely, to carry out basic maintenance, and to avoid breakdowns and resolve technical issues.

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SES satellites extend technical reach to two million TV homes in Ghana



SES digital network operation serving Ghanaian satellite TV reception

The 2016 results of the annual *Satellite Monitor* market research study, published by satellite operator SES, indicate that SES has increased its technical reach in the country to two million TV homes. This signifies an increase of over 18 per cent TV homes in Ghana compared to 2014, which brings SES's overall household reach in Ghana to more than 35 per cent of all TV homes in the country.

The *Satellite Monitor*, which is carried out for SES by various independent institutes, was conducted for over 20 years in Europe before being successfully replicated in Ghana. Approximately 3,000 interviews were conducted for this study, the first of its kind to be carried out by a satellite operator in markets where digitalisation is a key focus and a national priority.

The 2016 *Satellite Monitor* findings illustrate the important role that satellite plays in the Ghanaian TV market. Additionally, the study provides credible statistics for the market and can be used by other industry players to further understand the broadcasting industry landscape.

Eric Lecocq, general manager of North, West and Central Africa at SES, said, "We view our presence in Ghana as an investment in the national broadcast landscape through supporting local businesses in their efforts to contribute to the digital switchover process. The research results show that the African market is full of opportunities, and we will continue to develop our services to support TV operators and help them grow and reach new audiences. Furthermore, the research has a huge impact on countries such as Ghana, where digitisation is a major focus."

MOBILE-TO-MOBILE REMITTANCES FOR IVORIANS

Digital money transfer service **WorldRemit** and **MTN Cote D'Ivoire** have launched instant international remittances to MTN Mobile Money wallets in Cote D'Ivoire. With the WorldRemit app, the Ivorian diaspora can now send overseas money transfers to any MTN Mobile Money wallet in Cote D'Ivoire – with a few simple taps. This means people in Cote D'Ivoire can now receive vital remittance payments on their phones or at any of the 10,000 nearest MTN money transfer agents as cash.

Freddy Tchala, general director of MTN Cote D'Ivoire, welcomed the partnership between MTN and WorldRemit, allowing the country's diaspora to get closer to their relatives, and enriching the innovative financial services offering. He said, "MTN welcomes this recent agreement which is in line with our continuous efforts to improve access to financial services, not only for our local clients but also for Ivorians all over the world."

SOMAGEP-SA WORKS WITH ITRON ON WATER NETWORK

Energy and water technology and services company **Itron** has signed a contract with the **Malian Drinking Water Supply Management Company (SOMAGEP-SA)**, water provider to 160,000 customers in Mali in Western Africa, to help the utility to improve its water supply, save water and, ultimately, improve water access to more people in the country. SOMAGEP-SA will use Itron's residential and commercial & industrial (C&I) water metering automation and monitoring solutions, including software-as-a-service (SaaS) for analytics and meter data management, to decrease its non-revenue water levels.

Water scarcity is a major issue in Mali. SOMAGEP-SA chose to collaborate with Itron to start tackling water losses on its water supply network and develop a program to decrease non-revenue water.

The first implementation of Itron technology and services, a pilot project targeting a dedicated district metered area (DMA) in Bamako, La Cité du Niger, featured encouraging results in a short period of time. SOMAGEP-SA was able to improve its network efficiency in the DMA by 14 per cent, decreasing the amount of water lost every month by half.

This positive implementation initiated a new contract to deploy Itron solutions in another larger DMA, where nearly 60,000 metering points are managed.

With Itron's water metering automation solution, SOMAGEP-SA can better account for water usage and limit waste using detailed meter data to detect leaks, monitor system performance and improve water efficiency. Also, with more accurate meters, the utility can better track water usage to ensure resources are being used efficiently. By decreasing wasted water, SOMAGEP-SA has the potential to increase water access to more people.

► BRIEFS

Access Bank CEO pledges more project support

Herbert Wigwe, group managing director and CEO of **Access Bank**, has confirmed that the bank plans to support more developmental projects as part of its strategic objectives towards Nigeria's economic development and wealth creation.

Mr Wigwe said this during the signing ceremony of the N94.9bn (US\$476.9mn) five-year medium-term loan (MTL) for **Oando Plc** with a view to optimising the company's balance sheet towards greater efficiency as well as improving its working capital. The financing by a consortium of Nigerian banks is coordinated by Access Bank Plc as mandated lead arranger. Mr Wigwe said, "Oando is the largest indigenous oil and gas player in Sub Saharan Africa and this MTL facility would allow it to optimise its balance sheet towards greater efficiency and improve its working capital."

Shell campaigns for Nigerian energy efficiency

The Nigerian subsidiary of **Shell** has begun a campaign to encourage energy efficiency in the West African nation. Osagie Okunbor, managing director of **The Shell Petroleum Development Company of Nigeria Ltd (SPDC)** and country chair, **Shell Companies in Nigeria**, said, "Studies show that energy use has increased globally at the same time that we face the challenges of climate change and reduction of CO2 emissions. The campaign therefore seeks to challenge assumptions and spark imaginative thinking on how to make today's energy go further and to find cleaner energy for the future."

Using traditional and social media advertising and other targeted activities, the campaign, themed #makethefuture, seeks to promote advocacy and partnership for thought leadership.



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To find out more about what FG Wilson can do for you, visit us at www.fgwilson.com



BCPS INCREASINGLY SERVE SOUTH AFRICAN BUSINESSES

The number of South African businesses that have a business continuity plan (BCP) in place has increased year-on-year by six per cent, according to the 2015 Information and Records Management Trends Index commissioned by **Metrofile Holdings Limited**; Greg Comline, general manager of **Global Continuity South Africa**, a subsidiary company of Metrofile Holdings, said, "An effective BCP will ensure the restoration of business operations with minimal impact on the company and its stakeholders and therefore increases the reliability of a company."



Increasingly, SA workplaces are protected by BCPs

ITFC SIGNS MURABAHA AGREEMENTS WITH DJIBOUTI

The **International Islamic Trade Finance Corporation (ITFC)**, a member of the **Islamic Development Bank (IDB) Group**, has signed two Murabaha Agreements with the total amount of US\$55mn, in favour of the **Government of Djibouti** as represented by the country's **Ministry of Economy and Finance** with **Societe Internationale des Hydrocarbures de Djibouti (SIHD)** as the executing agency for the purchase of goods and services, and also for the purchase of petroleum products; Simon Mibrathu, Secretary General at **Djibouti's Ministry of Budget**, said, "The two financing agreements that we have signed with ITFC for the financing of imports of petroleum products are extremely important and will enable Djibouti to have sufficient supply of such strategic products."

HOW AGRIBUSINESSES ADAPT TO CLIMATE CHANGE

The many ways farmers, fishers, foresters and ranchers around the world are adapting their practices to climate change were spotlighted at the Annual Forum of the **Global Alliance for Climate-Smart Agriculture (GACSA)**, held recently at the headquarters in Rome, Italy, of the **Food and Agriculture Organization (FAO)** of

the **United Nations**; topics included trends in finance and investment related to climate-smart agriculture, with presentations on country case studies from Costa Rica, France, Ireland, Malawi, Tanzania and Vietnam.

AFDB PROMOTES SUSTAINABLE PRIVATE SECTOR STRATEGY

The strategy adopted by the **African Development Bank (AfDB)**, to involve the private sector in providing sustainable energy solutions, was the focus of this year's Global Green Growth Forum (3GF) in Copenhagen, Denmark, when AfDB president Akinwumi Adesina spoke at a panel discussion on 'Accelerating Financial Investments in Sustainable Growth' about the importance of ensuring mechanisms that will encourage private sector investment in sustainable development; he said, "We need to provide a robust framework through which we can accelerate financial investments in sustainable development" - before citing the AfDB-funded Lake Turkana wind power project in Kenya as an example of a project that utilised private sector funding to increase a country's power generation capacity.

EQUATORIAL GUINEA LAUNCHES OIL AND GAS LICENSING ROUND

The **Ministry of Mines, Industry and Energy (MMIE)** of Equatorial Guinea launched the country's latest oil and gas blocks licensing round, EG Ronda 2016, at the Africa Oil & Power conference held recently in Cape Town, South Africa; the MMIE intends to build upon Equatorial Guinea's reputation for exploration success by inviting oil and gas companies with the requisite financial and technical competency to explore its blocks.

NSE COMMITS TO KENYAN CODE OF BUSINESS ETHICS

The **Nairobi Securities Exchange (NSE)** has been admitted to the United Nations Global Compact while signing the 'Code of Ethics for Business in Kenya', as it seeks to promote corporate sustainability practices and core values in the areas of human rights, labour standards, the environment and anti-corruption; NSE chairman Eddy Njoroge said, "Corroboration of investor protection and enhancing public trust is vital to our capital markets, investing in sustainability can help create more stable and prosperous economic systems."

SALES SUCCESSES FOR DOOSAN BOBCAT AT BAUMA 2016

Doosan Bobcat EMEA reports that it sold over 150 machines from its stand at bauma 2016 in Munich, Germany, and gained a significant number of sales leads to follow-up after the event; over 100 Bobcat compact loaders, compact excavators and telehandlers were sold during bauma, with the greatest interest shown in the E17, E19 and E20 1-2 tonne compact excavators as well as the prototype of the new E10 electrically powered 1 tonne micro-excavator.



Over 100 Bobcat compact loaders, compact excavators and telehandlers were sold on the stand during Bauma



Bauma 2016 attracted approximately 580,000 visitors from 200 countries



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▶ QUOTES

“Countries must look to a range of innovative mechanisms that enable access for people to utilise the benefits of modern energy for income-generating activities.

CHRISTOPH FREI
secretary-general, World Energy Council

“Innovation plays a critical role in developing products, materials and processes to compete globally and offer the end customer a superior product.

ANTONY FUNSTON
plant manager, Federal-Mogul Motorparts

“With greater brand owner collaboration, the mobile platform could dramatically increase awareness and consideration of products in the retail environment, building demand and generating increased sales.

JACQUELINE NYANJOM
managing director, Nielsen West Africa

“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.

JEAN-PIERRE ELONG MBASSI
secretary-general, United Cities and Local Governments of Africa (UCLG)

“Individuals who run their businesses off mobile devices, as well as organisations who have a bring-your-own-device policy, will need to prepare for this in their security strategy.

RICK ROGERS
area manager for East and West Africa, Check Point Software Technologies

“Our golden rule for success is to focus relentlessly on the little details that drive quality, listen intently to what our customers are telling us, and making sure that every individual in our business understands the impact they can have on the customer experience.



FATIMA SULLIVAN
vice president of customer services, DHL Express Sub-Saharan Africa

“Corporate governance principles should enforce reward systems that compensate corporates and government institutions for the achievement of long term sustainable strategies; of course in balance with short term objectives.

MICHIEL JONKER
director, Grant Thornton

“We are seeing, I think, at long last, the real start of a really exciting chapter in Africa's energy story - and it comes about through the rise of the consumer.

DAVID HUMPHREY
global sector head, power & infrastructure, Standard Bank

“Lekela is a terrific renewable energy development platform; they've already got projects in operation and under construction in South Africa; they're developing projects in Ghana; they're developing projects in Egypt; and it's all renewable; it's wind and it's solar PV.

JAMIE FERGUSSON
chief investment officer, IFC

“If you look at countries in East Africa - Kenya, in particular - where you find a lot more IPPs that are successful, they've made it partly because you have to go through the challenges to realise what problems you have and find solutions.

MATALE MUKUKA
chief financial officer, Copperbelt Energy

“We are an off-grid power solution - so, what that means is, we don't need the transmission network; we come in, and install within 90 days, whereas a conventional type of infrastructure takes three to five years.

MARK MAKANDA
sales director, APR Energy

“As you can see at the Africa Energy Forum, a lot is about renewables and we are trying to play a role in that with our manufacturing partner Caterpillar.

FRANK DE KONING
director Europe, Energyst

Visit www.africanreview.com for more key insights from the Africa Energy Forum

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DANGOTE GROUP BECOMES SHAREHOLDER IN PAN-AFRICAN BANK



According to Aliko Dangote, Afreximbank is a 'good vehicle' for fostering regional integration in Africa. (Image: World Economic Forum)

Pan-African conglomerate Dangote Group has acquired shares in Cairo-based African financial institution Export-Import Bank (Afreximbank). A statement released by Afreximbank said that Dangote Group has completed the process of acquiring

equity stake in the bank with a "substantial investment".
www.africanreview.com/finance

CHINESE FIRM WINS SUBSTATIONS PROJECT IN UGANDA



According to Camc, the project will be completed within 30 months. (Image: Chris Van Lennep Photo)

Chinese construction firm Camc has been awarded a contract by Ugandan government to build four substations,

planned for Luzira, Namanve, Mukono and Iganga industrial parks, at a cost of about US\$100mn.

Mark Namungo, senior power analyst at UETCL, said, "We have contracted Camc to construct these substations. We are convinced that they will deliver up-to-standard work."
www.africanreview.com/energy-a-power

CSIR UNVEILS 'AFRICA'S FASTEST COMPUTER'

The Council for Scientific and Industrial Research (CSIR) has unveiled its new petaflop (PFLOPs) machine, said to be the fastest computer in Africa, in Cape Town. A Dell HPC system comprised of 1,039 Dell PowerEdge servers, based on



The new machine will provide increased access to computer resources for users who previously had limited or no such access, CSIR said. (Image: vladimircaribb)

Intel Xeon processors totalling 19 racks of compute nodes and storage, has been used to create the super computer, which has been named Lengau (Setswana for cheetah) and has a total storage capacity of five PB.
www.africanreview.com/ict

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The growth of mutualised minerals projects

James Tounkara, MD of Gajah Investment Group, speaks on how private equity investment is transforming African mining ventures

An investment professional, James Tounkara has been at intimately involved in the transformation of African private equity. Through past ventures and current deals, James has proven himself to be a reliable and knowledgeable resource for those looking to invest in Africa's increasingly competitive market.

Backed by a team of market specialists, James Tounkara established Gajah Investment Group (GIG) in 2015 to advise a number of highly innovative African companies, which simply lacked capital. For over a decade, James has specialised in identifying investment opportunities across Africa. He has built a reputation for proven ability across asset classes, positioning him as an enterprising pioneer for those looking to safely invest in Africa.

Influencing investment

James is well-travelled and through his years of spending much of his time on the ground dealing with local realities, James has established relationships with influencers and leaders on the African continent.

Recognised for his personal approach and successful history of dealing with some of the largest private equity funds in the world, James has created opportunities with leaders in Africa and with investors globally. His experience as a deal maker in Africa and recent high profile ventures include spearheading a mining project now listed on the London Stock Exchange. Another mining project was initiated in March 2016 when GIG signed an agreement with the Guinean Government and the state mining company, thus making GIG a holder of the BHP Boffa South block, containing nine



James Tounkara, co-founder, and managing director, Gajah Investment Group

“As interest from institutional investors continues to gain traction, African investment opportunities are opening up

JAMES TOUNKARA, CO-FOUNDER AND MANAGING DIRECTOR, GAJAH INVESTMENT GROUP

billion tons of bauxite. The project, valued at US\$7.95bn will start production in 2017.

In 2010, early in his investment management career, James joined Swiss boutique investment group Geneva Management Group's West Africa outfit as Managing Director. In his role, James fast became the African investment expert securing mining, energy, gaming and agriculture contracts whilst making valuable contacts along the way.

With his mentor, chairman of GMG, Dave Elzas, James set up a

luxury distribution company in Belgium as well as a diamond trading company in Antwerp, Belgium. These ventures exposed him to the burgeoning investment opportunities in Africa and eventually his experience and skills were honed enough that the time came to set up his own company to focus on expanding African businesses.

Emerging market specialists

As emerging markets witness a boom and bust, frontier markets, in

particular Africa, flourish in the right hands. With African private equity funds alone producing deals with a total value exceeding US\$21bn in the last five years, James saw a gap in the market.

In 2015 James co-founded a bespoke African private equity company, Gajah Investment Group with the Dubai-based family office Bhansali Equities, which has extensive background in real estate and acquisitions. In just over a year, GIG has set its financial footprint across key territories in Africa.

Gajah Investment Group was established to take advantage of this market growth. Whilst obstacles are steep, returns are high and the increasing arrival of international funds is a clear sign of confidence in private equity in Africa. James' main focus at Gajah Investment Group is on derisking and developing a portfolio of high return and high value projects across Africa.

As a thought leader in this sector, James is an expert on the growth of mutualised mining, issues with neo colonialism and its effect on African investing as well as the rise of boutique investment firms in the region. James is also well versed on discussing the attractiveness and obstacles of investing in Africa, expected drivers of return as well as preferred investment vehicles.

Speaking on what makes GIG a success, Mr Tounkara said, “Our highly experienced team and ability to identify previously missed opportunities in Africa's increasingly lucrative market, has resulted in us succeeding where many others have failed before. As interest from institutional investors continues to gain traction, African investment opportunities are opening up and we have been, and will continue to be at the forefront of these.” ■

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Knowledge-sharing and engineering for maritime cargo services partnership

A new partnership between turnkey maritime solutions company **Nautic Africa**, a **Paramount Group** subsidiary, and offloading services and equipment firm **Mariflex**, will bring international expertise in liquid cargo handling to the African market through the transfer of skills and exposure to the global market. Mariflex's previous collaboration with Nautic Africa and its employees has resulted in the establishment of a partnership that will see the creation of a new entity - Mariflex Africa powered by Nautic Africa.



Mariflex offers international expertise in liquid cargo handling

"A number of Nautic's employees have already gained experience working in Holland at Mariflex and a formalised partnership that would provide Mariflex with a presence in the African market seemed like a logical development," said James Fisher, CEO of Nautic Africa. "We are able to share ideas and learn engineering skills from each other."

Mariflex Africa is already operating. Its services are available 24 hours a day and seven days a week. A recent successful project required the team to offload 24,000 metric tons of vegetable oils from an oil tanker. Future plans include the establishment of a base for ship-to-ship transfers and the penetration of the combined services further into Africa. In addition specialised equipment is due to arrive from Holland to provide a more effective professional service to local clients.

The partnership delivers several professional services to local African markets. These include: ship-to-ship transfer service; liquid cargo handling; cargo survey; cargo loss control; bunker survey; barge inerting; debunkering; barging services; salvage support; firefighting equipment; pumps and powerpacks; and equipment sales, rentals and repairs.

Moreover, technical expertise to ensure that advice, assistance and solutions for any identified challenges can be provided before, during and after the transfer or transshipment of liquid bulk cargo is continuously available.

MTN MOVES INTO ACCOUNTING WITH SMEASY

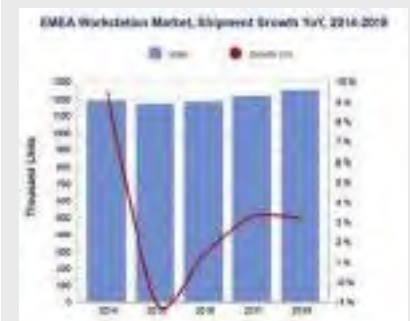
In partnership with online accounting company **SMEasy**, **MTN Business** has launched an agile business management and easy accounting solution for small business owners in Kenya. MTN Business EasyAccounting gives entrepreneurs with no accounting knowledge or training the ability to perform financial and commercial tasks. The cloud-based solution features quoting and invoicing, complete money management, customer communication, simple reporting and an accountant dashboard. MTN Business EasyAccounting also includes an easy to use payroll facility which generates payslips for employees.

"The small business sector is the lifeblood of most economies in Africa. As MTN Business, we have a particular interest in enabling and inspiring the growth of SMEs to stimulate economic inclusion in our markets," said Omotayo Ojutalayo, general manager, small medium enterprise channels, at MTN Group Enterprise Business Unit.

MARKET CONTRACTION FOR EMEA WORKSTATIONS

Workstation shipments in the Europe, Middle East, and Africa (EMEA) region contracted by 1.5 per cent year-on-year in 2015. Furthermore, global research and consulting firm **International Data Corporation (IDC)** forecasts a flat 2016, with year-on-year growth of 0.9 per cent, on the back of a moderate recovery in the regional economy, but with a highly uncertain outlook and increasing risks.

A subsidiary of technology media, research, and events company **IDG**, for more than five decades IDC has specialised in ICT innovation discussion through events, research, and consulting - giving ICT and business professionals data and insight for making strategic and practical decisions.



"It looks like Windows 10 migration has been the priority in enterprise infrastructure budgets this year," said Mohamed Hefny, program manager in the virtualisation, systems, and infrastructure solutions department of IDC CEMA.

While the regional economies of Western and Central Europe are going through their fourth year of recovery, the majority of emerging markets in the EMEA region are still struggling with the twin pressures of geopolitical instability and the fall in global oil prices, making workstation spending among businesses in these markets extremely tight.

► BRIEFS



Sadiq Munshi, product development manager: cloud solutions, Jasco Enterprise

Jasco's virtual contact centre

Technology company **Jasco** has launched has launched a Hosted Virtual Contact Centre solution, to provide customers with enterprise connectivity and customer management, fully managed and supported in a secure hosted environment. Sadiq Munshi, product development manager: cloud solutions at Jasco Enterprise, said the company "can manage the entire solution as well as provide professional services which includes developers that perform integration work".

FNB initiates ecommerce with PayPal in Botswana

PayPal and **First National Bank (FNB)** have extended the partnership between the companies to offer PayPal Withdraw Service, previously available only in South Africa, in Botswana. This service allows residents in Botswana to withdraw money directly from PayPal accounts to qualifying FNB bank accounts, giving local businesses the flexibility they need to not only accept PayPal payments but also settle locally - opening up the opportunity to do business on a global level and have access to PayPal's 183mn active customer accounts in 203 countries and markets. PayPal's general manager sub-Saharan Africa and Israel, Efi Dahan said, "Our extended partnership with FNB Botswana is very exciting because it provides an avenue for merchants to gain even greater control."

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The “triple threat” facing SSA

The ongoing risks to local and regional growth in Sub-Saharan Africa, and the most viable options for strengthening economic resilience

The African continent is not immune to strong headwinds from tougher external conditions. In particular, Sub-Saharan Africa’s decade of uninterrupted high growth and improvements in development indicators have been followed by a marked slowdown in some of the larger economies (notably Nigeria, South Africa and Angola) over the past two years.

Key downside risks for regional growth include a downturn in China’s growth, prolonged depression in commodity markets and stringent financial conditions leading to higher borrowing costs for emerging economies in international capital markets. Prices of Africa’s principal exports, crude oil and metal, have plunged, driven by ample supplies and faltering demand, and are unlikely to regain their previous highs. Meanwhile, a transition in the economy of Africa’s No.1 bilateral trading partner, China, from investment-led to a new growth model - based on innovation, productivity and domestic demand - has had a negative impact in terms of declining volumes of exports from Africa.

There is also lacklustre recovery in Eurozone markets. Moreover, the near-term prospect of higher US interest rates has reversed capital flows, especially to frontier markets. The International Monetary Fund (IMF) notes: “Should net capital flows to Sub-Saharan Africa (SSA) be lower than expected because of adverse developments in global markets, frontier emerging market countries in the region could face more limited external financing opportunities. This, too, will have negative consequences for economic growth.”

Most countries are experiencing tepid growth, ‘twin’ deficits (both

Table1. Sub-Saharan Africa: Real GDP Growth & Forecasts versus Peer Regions (percent change)

	2015	2016	2017
Sub-Saharan Africa	3.4	3.0	4.0
Nigeria	2.7	2.3	3.5
South Africa	1.3	0.6	1.2
Middle East & North Africa	2.3	2.9	3.3
Saudi Arabia	3.4	1.2	1.9
Emerging & Developing Asia	6.6	6.4	6.3
China	6.9	6.5	6.2
Latin America & the Caribbean	-0.1	-0.5	1.5
Brazil	-3.8	-3.8	0.0
Emerging & Developing Europe	3.5	3.5	3.3
Russia	-3.7	-1.8	0.8
Memorandum			
World Economic Output	3.1	3.2	3.5
United States	2.4	2.4	2.5
European Union	2.0	1.8	1.9
World Trade Volume (goods & services)	2.8	3.1	3.8

Source: IMF, World Economic Outlook, April 2016.

Note: Subdued global growth last year and 2016 is due to

1) China’s slowdown and re-balancing; 2) faltering commodity prices, especially oil and metals; 3) related downturn in FDI, foreign direct investment and trade; and 4) declining capital flows to emerging and frontier markets, which saw an estimated US\$200bn in net capital outflows during 2015, compared to net inflows of US\$125bn in 2014.

fiscal and current account), steep currency depreciations, and sharply higher bond yield spreads - reflecting increased global risk aversion and balance of payments difficulties. Total external flows to Africa for 2015 - from foreign direct investment, trade, official aid, remittances and other sources - were estimated at US\$208.3bn, down from an estimated US\$212.2bn in 2014, according to the African Development Bank (AfDB).

Strengthening resilience

Timely policy solutions can help SSA to regain its growth momentum both in the short and long-terms. These include a prudent mix of fiscal, monetary and exchange rate policy to weather external shocks, as well as vigorously pursuing structural reforms to diversify regional economies away from commodities. Amidst weak

extractive sector, many countries need better domestic revenue mobilisation and a sustainable tax base from the wider economy.

“African countries must not only diversify their economic base, they must also learn to tax it,” said Ngozi Okonjo-Iweala, Nigeria’s former Coordinating Minister for the Economy and Minister of Finance.

With rising fiscal deficits, authorities should consider reducing costly fuel subsidies and raising the value-added tax (VAT) on non-essential items. A buffer of strategic fuel and food reserves help countries mitigate pressures on state finances, whilst preventing wide fluctuations in domestic prices.

When faced with severe financial stringency, most national authorities reduce capital spending, whilst protecting recurrent expenditures. Such a response, however, harm the country’s capacity for growth and

the ability to withstand future shocks. Public investments, in fact, complement private sector investments and enhance profitability of existing and future private capital projects by reducing transaction costs for businesses. Substantial savings can also be achieved from prioritising government spending and improving the selection and execution of public investment projects - oriented toward sustainable development.

Unfinished agenda

SSA’s brisk growth in recent years has been one of the success stories of the global economy. This growth has been broad-based: two-thirds of the countries have enjoyed more than a decade of sustained growth; a quarter, more than 20 years of uninterrupted growth. This has been accompanied by a steady decline in poverty; life expectancy, maternal and infant mortality rates have also improved in most countries.

Despite much improved perceptions of the Sahara region, its wider developmental agenda is largely incomplete - hence, the need for continued progress on infrastructure building, improving the business climate and strengthening of human capital. Africa needs about US\$100bn/year over the next decade to fill its infrastructure financing gap, according to the World Bank; present capital-related spending is only US\$45-50bn.

Regional governments need to engage public-private partnerships (PPPs) for commercial funding and participation, working with the Build Own Operate (BOO) and/or Build Own Transfer (BOT) models that have become popular in Arabian Gulf region.

Unlike East Asia's structural transformation from primary production to secondary and tertiary industries, the shift in Africa from agriculture has been towards services rather than industry, whose share in GDP today is roughly same as in the 1970s. Concurrently, SSA share in global exports of manufactured goods is negligible. The industrial sector is largely dominated by small and medium enterprises (SMEs), which often lack affordable credit and access to Western markets and advanced technologies. Shortages of skilled labour, high trade and transport costs further undermine Africa's global competitiveness and its ability to attract foreign direct investment (FDI), especially in smaller economies. Climbing up the technology ladder requires new policies to promote higher-productivity industries, building the capabilities of SMEs, and investing in industrial clusters - ie special economic zones (SEZs).

Industrialisation demands upgrading and expanding the region's physical infrastructure stocks, namely, electrification, transportation (roads, railways, ports and airports), logistics, information and communications technologies (ICT) as well as improving the quality

of higher education and vocational training - through heavy focusing on science/technology - vital for competing in global markets - and fostering business enabling environments by focusing on reducing the regulatory burden and supportive institutions to safeguard private property rights.

African countries must also devise policies to ensure higher socio-economic dividends of FDI in the form of job creation, knowledge transfer and export diversification. Development partners can make important contributions on two fronts - enhanced official aid flows for improving trade logistics and increased preferential market access for Africa's non-traditional exports. In addition, bilateral donors can do more to support regional integration and participation in global value chains (GVCs). Additionally to higher physical capital formation (i.e. fixed investments), building a non-extractive economy requires network of viable local banks providing access to financial services and payments system, including through mobile banking, as well as developing liquid capital markets supported by domestic institutional investors, such as pension funds. The latter helps to increase the depth, quality and inclusiveness of

financial intermediation. Setting up credit bureaus, credit guarantee schemes, and effective insolvency laws can, too, assist the SME sector - engines of job creation and poverty alleviation in developing world - through better access to seed and venture capital.

A broader economic base provides foundations for diverse revenue sources and creates natural buffers against an unhealthy reliance on capital-intensive extractive industry. It also reduces exposure to exogenous shocks through linkages with other sectors of the economy. Further institutional reforms are needed in fledgling democracies aimed at improving states' capacity and tackling, in some places, an entrenched culture of graft. Many development economists suggest addressing tough issues such as land tenure in Africa.

Cautious optimism

While short-term outlook for SSA countries is somber, key domestic drivers of growth over the medium-term remain largely intact. In particular, the region's improving business environment, strong demographics and natural resources should help bolster faster and more inclusive growth in coming years. According to the World Bank, six of

Table3. High Performing Regional Economies (percent change in real GDP)

	2016	2017
Burkina Faso	5.0	5.9
Cameroon	5.3	5.1
Congo, DRC	7.0	8.0
Cote d'Ivoire	8.6	8.3
Ethiopia	8.1	7.7
Ghana	5.8	8.7
Kenya	6.0	6.4
Mozambique	6.5	7.5
Rwanda	6.8	7.2
Senegal	6.0	6.5
Tanzania	7.2	7.2
Uganda	5.1	5.8

Source: AfDB, *Africa Economic Outlook*, May 2016.

Note: Many African economies continue to register decent growth: one-third of the countries in the region are still growing at nearly 5 percent or above during this year and next.

The seven largest economies, SSA-7 (Nigeria, South Africa, Angola, Kenya, Ethiopia, Tanzania and Ghana) account for three-quarters of sub-Saharan Africa GDP.

the world's fastest growing economies over the period 2014-17 are predicted to be in Africa. These include Ethiopia, Congo (DRC), Côte d'Ivoire, Mozambique, Tanzania, and Rwanda. It is crucial, however, SSA advances the economic transformation agenda, which relies on diverse engines of growth, such as manufacturing, technical innovation, and value-added agriculture than exports of primary raw commodities.

David Lipton, first deputy managing director at the IMF, succinctly put it: "Clearly, Africa is facing a challenging new reality. The reform list is long: economic diversification, structural transformation, financial sector development and good governance. All are more critical than ever if Africa is to create new sources of growth and ensure that the people of this region continue to see their lives improve. But Africa has every reason to look to the future with a positive outlook."

The region's natural wealth can be better utilised for economic diversification in order to cope with high demographic growth and rapid urbanisation. To sustain Africa's growth, and eliminate poverty, investment in basic infrastructure is fundamental. ■

Moin Siddiqi, economist

Table2. Sub-Saharan Africa: Macroeconomic Indicators

	Projections							
	2010	2011	2012	2013	2014	2015	2016	2017
Real GDP Growth (% chg)	6.6	5.0	4.3	5.2	5.1	3.4	3.0	4.0
Inflation, average (% chg)	8.2	9.5	9.3	6.6	6.4	7.0	9.0	8.3
Fiscal Balance, incl. grants*	-3.4	-1.2	-1.8	-3.1	-3.6	-4.1	-4.6	-4.1
Government Debt *	28.1	28.6	27.9	29.1	31.2	36.4	37.2	36.8
Total Domestic Investment *	20.6	20.4	20.9	20.7	21.2	20.3	20.2	20.3
Banking Penetration **	54.1	53.7	54.5	56.6	57.0	70.4		
Current Account Balance *	-0.8	-0.6	-1.8	-2.4	-4.1	-5.9	-6.2	-5.5
Forex Reserves Coverage #	4.2	4.6	5.3	5.0	5.6	5.1	4.2	3.9
Net Foreign Direct Investment *	2.7	2.1	2.1	1.3	1.5	2.0	2.2	2.4
External Official Debt *	11.9	11.7	11.8	12.7	14.0	16.7	19.0	19.1

* As percent of Gross Domestic Product (GDP); **Total banking assets in percent of GDP.

In months of imports of goods and services.

Source: IMF, *Regional Economic Outlook, Sub-Saharan Africa*, April 2016.

Note: The IMF lowered its 2016 growth estimate for sub-Saharan Africa to 3 percent, from 4.3 percent six months ago - the lowest level in 15 years and roughly half the rate Africa had grown in 2010-11. The downturn reflects spill-overs of tougher external conditions on African economies, notably the slowdown in China, the continent's biggest single trading partner.

Africa's exports to China fell by 38 percent in 2015 to US\$67bn, while FDI from China into the continent also dropped by 40 percent in the first-half of 2015, according to China Customs Office.

About half of the region's 45 economies are 'net commodity' exporters. World Bank data indicate that fuel, metal, and mineral exports comprise about two-thirds of SSA exports in 2010-14.

Banking on network capability

The banking and finance sector is increasingly looking towards network partners such as Liquid Telecom to not only deliver connectivity, but to help drive innovation across their operations. Shouldn't your business too?

The banking and finance sector has always had to act fast to keep up with the ever-changing demands of its customers.

After all, its customers are entrusting them with their financial future. The very least they can expect in return is a reliable, efficient and secure banking service, available anywhere and on any device they choose.

In Africa, the banking and sector is having to act even faster to keep up with more dramatic changes in customer demand.

Some five years ago, mobile banking exploded across parts of Africa in a way previously unseen by the world. The region now has the highest levels of mobile money penetration in the world, which has seriously disrupted traditional banking models.

International and local banks operating across the region have got smart. They've been exploring how to overcome some of the infrastructure limitations posed by the vast region, while at the same time tapping into advancements in technology.

Strategies that all businesses in Africa can learn from.

Banking the unbanked

One of the reasons mobile banking proved to be so successful in parts of Africa is that it surpasses the limitations of physical infrastructure. Access to commercial bank branches and ATMs in Africa is proportionally far lower than global averages.

This is changing as global banks and large pan-African banks make their mark further on the region. But how do they extend their reach to underserved areas when the cost of deployment is high and the population density is low?



Liquid Telecom Kenya has worked with Barclays, connecting branches in Nairobi with free Wi-Fi, to improve customer experience

Choosing a network partner with scale is a must. The absence of critical ICT infrastructure in rural areas can have costly implications for regional banking institutions.

Satellite has emerged as a cost effective and versatile solution for banks, enabling them to establish reliable links for ATMs and point-of-sell devices. Kenya Commercial Bank (KCB), for example, has one of the largest banking networks across East Africa, and, thanks to Liquid Telecom Kenya, was able to successfully connect 24 of its branches in South Sudan using VSAT technology – allowing for faster and more efficient banking services for its South Sudanese customers.

A competitive advantage

Recognising that increasing the physical reach of their services across Africa will not be enough, forward-thinking organisations are also exploring innovative ways to use technology to gain a competitive advantage.

This has been taking a variety of forms. For some banks, it can be

about improving service levels to a specific type of customer.

For instance, video conferencing can enable higher-value customers to directly interact with financial advisors as they would do in a branch. Integrated with online banking services, this creates a very powerful customer experience proposition.

Or it might be more about building brand awareness in a particular field. Security and data privacy, for instance, are issues that weigh more heavily on the minds of today's customers.

By demonstrating that it follows best practices and leverages the most advanced technologies, a bank can build customer trust and confidence. Liquid Telecom's CrashPlan service, for example, can ensure that a bank has all its data securely backed up to the cloud, demonstrating to its customers that it has a contingency plan.

Or it might be more about discovering clever, subtle touches to enhance the overall customer experience. For example, Barclays

recently became the first bank in Kenya to offer its customers free Wi-Fi in its branches. In partnership with Liquid Telecom Kenya, Barclays connected 10 branches in Nairobi with free Wi-Fi, helping to improve overall customer experience as well as introduce them to the benefits of online banking. Liquid Telecom Kenya set up a dedicated Wi-Fi network - totally independent from the bank's internal network - in order to mitigate any potential security risk. The positively received move is a good example of customer service differentiation, and will be rolled out to more branches across Kenya.

The banking sector has recognised that high-cost branches cannot survive in their traditional form in Africa and it is responding to that challenge. Greater network capability and use of innovative technology is at the heart of that business transformation - is that the case at your business too? ■

For more information about Liquid Telecom visit www.liquidtelecom.com

Creating direct-to-consumer funding

CEO of start-up financial technology (fintech) company Lemon Way, Stéphane Draï recently spoke to African Review on the evolution of financial services across the continent, particularly around the issue of corporate payments. Mr Draï has sought to use Lemon Way's European success with financial technology as a model for African enterprise.

When asked about the extent to which the European fintech sector can replicate successes in Africa, Mr Draï spoke of the “technological edge as well as a strong understanding of what it takes to launch and develop a groundbreaking financial service across a whole continent”, which Lemon Way gained as it grew from a mobile banking software publisher in 2008 to a fully-fledged payments institution since 2012. Notably, the company has learned to adapt to and help develop regulatory expertise.

Mr Draï seeks to use this expertise “to provide a mobile wallet that both Africans residents and African diasporas all around the world will use to transfer money in the blink of an eye”. In addition to its target of serving 6,000 sites and 30mn individual accounts in Europe by 2019, the company aims to manage 40mn individual accounts in Africa within the same time-frame.



Stéphane Draï, CEO, Lemon Way Africa

Initial signs are good. Mr Draï reported to African Review that its pilot programme in Mali was successful, with one million accounts opened in 15 months - with launches due in two more African countries this year.

There is one difference between the company's European model and its African operation. In Europe, Lemon Way follows a business to business to consumer (B2B2C) model, an emerging e-commerce model combines business to business (B2B) and business to consumer (B2C) processes to generate revenues collaboratively. In Africa, the company is using a B2C model. Mr Draï confirms that there will be partnerships with African banks for fund segregation, but the company will retain ownership of the entire value chain in Africa. ■

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Building Africa's digital future

Executing a digital overhaul at SA banks

Cybercrime, new regulatory requirements, intense competition and heightened customer expectations are forcing big banks to steeply increase their IT spend

Keeping pace with technological innovation is possibly the most important factor driving the success of African banks in the future.

In an increasingly competitive sector, banks across Africa are investing billions of dollars in IT technologies. This movement has been underway for a while now, with the development of mobile and online banking, complementary apps and peer-to-peer lending. In response to strict regulatory requirements, sophistications in cybercrime and heightened customer expectations of seamless digital banking, IT spend continues to increase steeply, both in terms of period-on-period growth and in absolute terms.

In South Africa, the coming years will see the larger banking entities spending more money than ever before on technology. The reasons for this are multi-faceted, going deeper than a need to stay ahead of the competition.

On 1 January 2017, the Basel Committee's Principles for effective risk data aggregation and risk reporting will come into effect. The regulations require banks worldwide to build IT infrastructure that supports the effective management of risks such as financial mismanagement, inadvertent release of sensitive data and poor data quality.

Many banks are readying themselves for the new regulations by overhauling their IT systems. Another factor driving the trend is increasingly sophisticated cyber crime, which continually forces banks to upgrade their digital security systems. One of the greatest drivers is the heightened expectations of customers, who have become used to the idea of



First National Bank is utilising new technologies to deliver profitable growth

experiencing seamless interactions through mobile and online banking.

Technology is driving profit growth

PriceWaterhouseCooper (PwC) regularly conducts analysis of South Africa's major banks. The company found that by September 2015 South Africa's top four banks – First National Bank (FNB), ABSA, Standard Bank and Nedbank – had recorded a growth of 12.5 per cent in profits for the year to reach R33.8bn (US\$2.16bn). This is remarkable when considering that South Africa's economy is looking the shakiest it ever.

Technology has played a crucial part in driving this growth, making banks more responsive to the needs of customers, increasing the number of transactions and allowing greater efficiency overall.

According to PwC's analysis of major banks in SA, "sustained effort by all of the major banks to optimise channel choice and migrate customers to digital and mobile channels continues to positively impact electronic transactional volumes in both retail and corporate banking".

It is anticipated that the Big Four banks will each spend between R2-3bn on digital technology over the next year.

Perspectives from a market leader

FNB's ability to embrace emerging technologies and to leverage these to deliver products and services directly to the customer has made it the banking sector's market leader in terms of technological innovation.

Mo Hassem, chief information officer at FNB, said the bank's IT spend currently stands at R2.3bn.

"Technology has always been and continues to be at the centre of the financial services industry. We have seen greater cost efficiencies from virtualisation and the price performance gains with newer technologies. Digitisation and Big Data are high on the list of most organisations as well as FNB," said Hassem.

Hassem added that FNB has paid particular attention to the development of mobile apps, but cloud computing will also feature heavily in the future. "We anticipate that these and other technologies

such as cloud computing will assist us in gaining more efficiencies and eventually reduce the cost of technology over time."

Hassem also observed, "This ability to leverage and deliver customer service in new and innovative ways is what will increasingly drive the success of corporations in the near future."

Hassem warned that while the cost of technology will be driven down, the cost of employing qualified staff will increase.

"We anticipate that the cost of acquiring people with the relevant skills will increase as the shortages of technology skills become more acute," he said.

South African banks compete largely on innovation, instead of common factors such as price or service. As banks such as FNB continue to push the capabilities of technology to the very limit, other banks are forced to do the same. Technology has well and truly disrupted the traditional financial system, and will only continue its upward surge. ■

Dale Hes



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Off-rovers such as the Ford Ranger are highly-valued for their practicality

How tough is off-road transport?

The latest off-road trucks on sale in African markets vary in terms of costs to run and maintain, and the strength required for robust use

Across the continent, we are seeing more and more people seeing off road pickup trucks as the solution to their problems of delivering goods and materials. For Africa, such vehicles have to be tough to meet conditions where there is little developed road to networks outside cities. Even where there are road networks, often the quality of maintenance is something to be desired. Though the ride of such pick-ups can feel at times bouncy when un-laden, as the bed is supported by very stiff suspension that's designed to take heavy loads, reports Auto Express April 2015.

Amongst the most popular pickup vehicles on the market today, include the Toyota HiLux, Ford Ranger, Chevrolet Utility, Nissan NP200 and Mazda BT-50. In some African countries, like South Africa, the Toyota HiLux is the most popular pickup, with the Ford Ranger second reports Statistics from the National Association of Automobile Manufacturers of South Africa in October 2015. Elsewhere on the continent, the Ford Ranger enjoys lead position. One thing is certain; there is plenty of choice when it comes to pickup trucks on the market today.

Toyota HiLux

Toyota HiLux, introduced into Africa in 1969, over one million of these have been sold in Africa, with much of the production coming from

Toyota South Africa Motors Durban manufacturing plant in Prospecton. Since its introduction to South Africa in 1969, it appears, been the country's most popular pickup except in just four years 1969, 1978, 1997, and 1998, when it was outsold by rival makes. A new version of the HiLux with a new engine is set to come on the market in South Africa this Easter 2016, reports Engineering News, March 2015. As with the current version, the new edition will be exported to the rest of Africa, Europe and Russia.

The HiLux is seen as a more economical alternative to traditional work trucks, drivers also appreciate it is a capable performer, not only in cargo capacity, but interior comfort. In many ways, this vehicle is multipurpose, with multiple engine, transmission and four-wheel drive options. In addition, it's high-end specifications, heavy engineering underpinnings, designed above all to be tough, durable and unbreakable, help maintain its position in many markets. It is also popular with car thieves reports CrimeStatsSA.

Ford Ranger

The rival to the Toyota HiLux in many markets is the Ford Ranger, according to Its design is attractive to both city and work rural dwellers. The Ford Ranger is well known for its utility capabilities, but like its rivals, it has added creature comforts, that are similar to what

are found in range Rovers or sports utility vehicles. In fact, because of its high-performance, quality, styling and comfort, it is not surprising. It won the international pickup award for 2013.

The Ford Ranger is available in a variety of options, including single or double cab, petrol or diesel engines, four-wheel drive and rear wheel drive. Many of Africa's growing number of middle-class drivers find this a great vehicle for work and fun. In addition, despite its large load area and size, though some will find the cabin space is tight, the Ford Ranger is easy to drive, relatively economical and comfortable.

Chevrolet Utility

The Chevrolet utility is a half-ton pickup truck, it can carry up to 763kg. Its designers, of focusing on the needs of people in rural areas including farmers, miners and hunters, it's not really for weekend adventures who appreciate being pampered. Options include two small gasoline-powered engines, a 1.4 and 1.8, either being connected to a five-speed manual transmission. For lightweight and capable pickup, these engines are surprisingly powerful, but not as efficient as one might expect. Perhaps the addition of a six-speed manual transmission would make it even more efficient and quiet on the highway. Inside, the Chevy Utility really lives up to its name, with basic controls, basic

audio system, and materials used to stand up to daily abuse. After all, this is a pickup-truck.

Nissan NP200

The Nissan NP 200, is also a half-ton pickup truck, available with a choice of three different engines including a 1.5 turbodiesel, making it one of the most-efficient pickups on the market. A five-speed manual transmission is common to the three engines, although a sixth gear would probably have been a better choice, especially for highway use. For the half-ton segment, the Nissan NT 200 claims the highest payload at 800kg, in a standard rubberised bed. The interior and exterior design is a few years old, simple and utilitarian, but it gets the job done, which is the most important aspect of this little pickup.

Mazda BT-50

The Mazda BT-50 is easy to drive and manoeuvre, though, due to its size, it can be difficult to find a suitably large parking space for it. The inside is more like what you would expect from a BMW mini, because it is far more comfortable than you would expect from a typical bog standard pickup. It means for big and tall people like me, even the back seats provide plenty of legroom to sit comfortably and enjoy a quiet ride across rough terrain. ■

Nick Newman

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Allianz Climate Monitor indicates extent of South African energy needs

According to analyses by Allianz, published in its *Climate & Energy Monitor*, the G20 nations are at risk of falling short of the climate goals they set in December 2015. There is a growing gap between current investments in renewable energy sources (2015: US\$286bn worldwide) and future needs.

The **International Energy Agency (IEA)** projects the need at US\$790bn a year as early as 2020, and US\$2,300bn per year by 2035.

“If the G20 countries don’t have a sufficiently comprehensive strategy for the energy transition, they won’t just fall short of their climate goals,” explained Karsten Löffler, managing director at Allianz

Climate Solutions. “In the longer term, they’ll also put their competitiveness at risk because they’ll be so late in changing direction in the necessary technologies and infrastructures. Waiting will result in stranded investments and extra costs.”

South Africa’s investment needs are amongst the most acute. Alongside India, Indonesia, China and Brazil, South Africa will need to bridge 50 per cent of this investment gap, owing to its market size and development needs. This percentage increases when the overall vulnerability of power infrastructures to the impact of climate change is taken into account.

Mr Löffler said, “South Africa along with the mentioned countries nevertheless has an insufficient investment framework. To attract substantial private investment, stringent and long-term policy action will be required. Absolute investment needs are approximately US\$14bn per year, up to 2035.

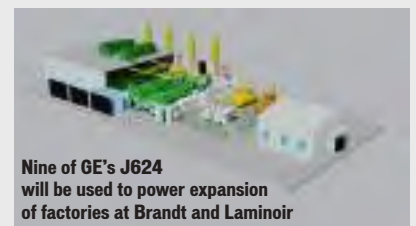


CLARKE ENERGY SUPPLIES GAS ENGINES TO CEVITAL

GE’s Distributed Power business has confirmed that **Clarke Energy**, its authorised distributor of Jenbacher gas engines in Algeria, has been selected by the **Cevital Group** to supply a 39.6MW on-site power plant for the group’s **Brandt** household electronic appliances factory in the city of Setif, along with its **Laminoir** factory in Oran. The natural gas-fuelled stations will utilise nine of GE’s 4.4-MW, J624 Jenbacher gas engines to support two factories’ expansion.

The order represents the largest gas engine order for GE’s Distributed Power business and Clarke Energy in North Africa. Cevital, Algeria’s largest industrial conglomerate, covers a range of industries including food processing, automotive and electronic goods manufacturing and distribution.

GE’s Jenbacher J624 gas engines were selected for their durability and flexibility, which will be crucial since the factory is located at more than 1,000 meters above sea level. GE’s Jenbacher J624 units can maintain their efficient performance due to their twin-turbo charger technology, with no de-rating up to 40 degrees Celsius (104 degrees Fahrenheit).



Nine of GE’s J624 will be used to power expansion of factories at Brandt and Laminoir

Ali Hjaiej, business development director for Clarke Energy, commented, “This is Clarke Energy’s largest project in North Africa to date...With Algeria’s continued industrial expansion, the deployment of high-efficiency distributed generation capacity will play a key role in meeting the country’s increased energy demands.”

OMICRON OPTIMISES TEST EQUIPMENT

The new CMS 356 from **OMICRON** is a voltage and current amplifier for analogue low-level signals provided by a CMC test set or by any other signal source, such as a digital real-time power system simulator. When combining it with a CMC test set, the amplifier extends the capabilities of the test set to provide additional



OMICRON’s new CMS 356 voltage and current amplifier

output channels or higher output currents.

The CMS 356 with its four voltage outputs (300 V each) and six current outputs (32 A each) offers numerous output configurations. Therefore, it covers the applications of both previous amplifiers, CMA 156 (6 x 25 A) and CMS 156 (3 x 250 V + 3 x 25 A), in a single device. It even surpasses its predecessors with the improved output characteristics and the possibility to calculate and output residual voltage and current to the device under test.

▶ BRIEFS

Russia, Nigeria sign on nuclear



Rosatom Corporation general director S V Kirienko, and Nuclear Energy Commission of Nigeria general director F Erepano Osaisai

On the sidelines of the VIII International Forum ATOMEXPO, representatives of the **Russian Federation** and the **Federal Republic of Nigeria** have signed an agreement on cooperation with respect to the construction of the **Centre for Nuclear Research and Technology** in Nigeria. The centre will allow Nigeria to begin work on familiarisation with nuclear technologies and their implementation in the fields of science, medicine, agriculture, amongst other areas.

Cape Town hosts upstream oil-gas stakeholders

Global Pacific & Partners and **ITE Group** are set to host the 23rd Annual Africa Oil Week/Africa Upstream 2016 Conference over 31 October-4 November 2016, at the Cape Town International Convention Centre in South Africa. For over two decades, and with a track record of over 200 events held in and on African oil and gas, Africa Oil Week is widely recognised for forging corporate/state relationships across the continent and globally. As before, the event highlights Africa’s upstream industry with insights, debate and discourse from governments, national oil companies, licensing agencies and corporate stakeholders around the continent’s hydrocarbon prospects, providing extensive high-level senior executive networking for securing new venture possibilities and finance/investment opportunities.



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Enterprises engaged in standby power

Market developments and product innovations for manufacturers and distributors across the African continent through 2015 and 2016

Africa's economic growth has hinged for years on its ability to bring in new genset capacity, where required, to support projects in areas such as mining and energy, telecommunications and infrastructure development. These mobile power units - which vary in scale from tiny to substantial - have helped shore up energy supplies to maintain production lines, or simply to keep the lights on in offices and workshops, bringing with them flexibility and reassurance, though at a price.

Major power projects involving heavyweight players such as Cummins, GE and Aggreko have delivered hundreds of megawatts to prop up flailing local electricity networks. Last year, for instance, Agegroup beefed up a 70MW gas-fired power plant it had established in the Ivory Coast, in the Vridi area of Abidjan, up to 200MW to provide critical power to the national grid.

Growth market

The global diesel genset market is expected to reach US\$21.4bn by 2022, according to one recent research report, with the combined Africa and Middle East region accounting for over US\$2.8bn.

"The presence of a large electricity demand-supply gap owing to an increase in demand from the mining, telecom, retail and oil and gas sector, is projected to drive the diesel gensets industry," states the report 'Diesel Genset Market: Forecasts To 2022'.

According to Navigant Research, global diesel genset capacity additions are expected to increase from 62.5GW in 2015 to 103.7GW in 2024; again, Africa will take a share of this market. Moreover, there is increased interest in other genset units too, as technology evolves and

the availability of new fuel alternatives opens more options for buyers. Similarly, Navigant Research says that annual natural gas genset installations will reach 27.2GW by 2024 and generate US\$146.8bn in cumulative revenue between 2015 and 2024. With natural gas plentiful in many parts of Africa, and with lots more being discovered offshore, there is a clear opportunity.

Weak infrastructure

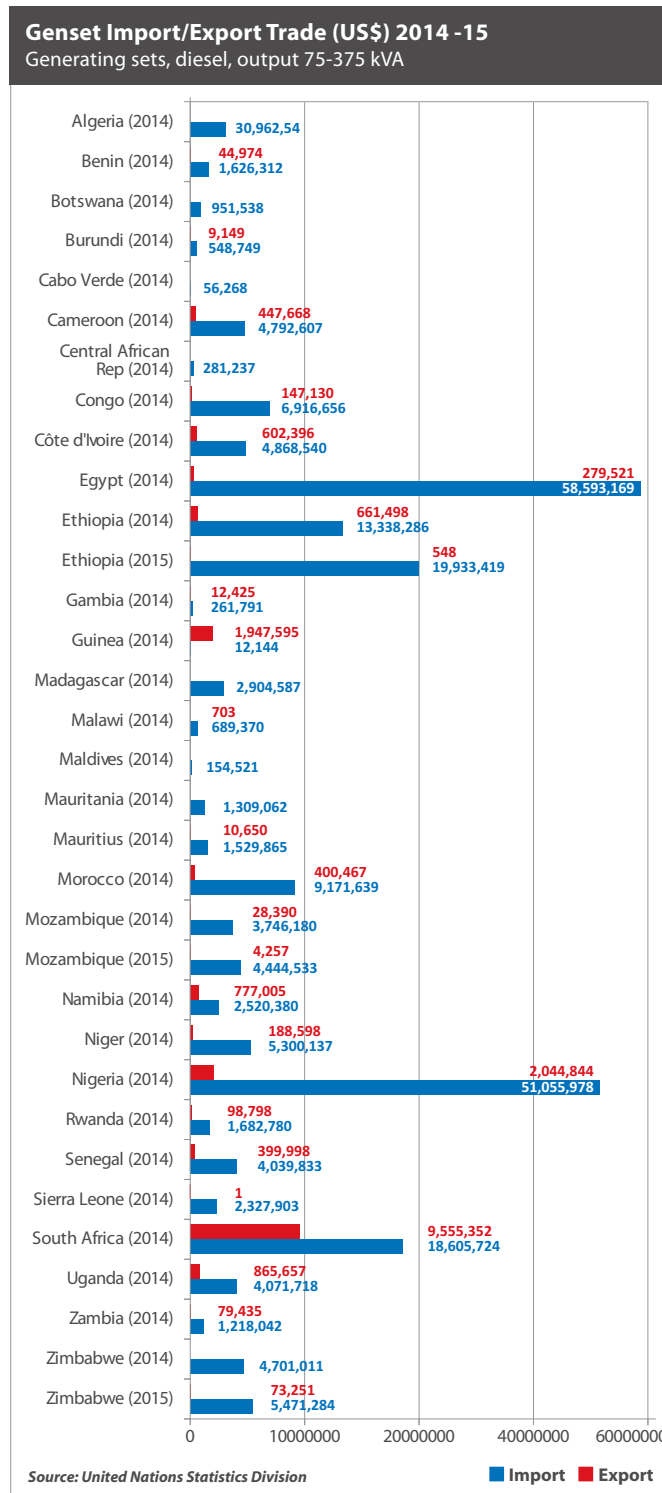
The stark background to this growth, and the continent's patchy energy coverage, was highlighted by the African Development Bank (AfDB) recently, in which it identified over 645mn people without access to any electricity and some 730mn still reliant on biomass for cooking.

Power consumption per capita in Sub-Saharan Africa is the lowest of all continents, currently estimated at 181kWh per annum, compared to 6,500kWh in Europe and 13,000kWh in the USA. The AfDB says energy bottlenecks and power shortages are estimated to cost Africa 2-4 per cent of GDP annually, undermining economic growth, employment creation and investment.

Moreover, the price of bringing in relief power from gensets is costing buyers, from state utilities to local industries, more than they would otherwise be paying.

Power tariffs in most parts of the developing world fall in the range of US\$0.04 to US\$0.08 per kilowatt-hour, says the World Bank. However, in Sub-Saharan Africa, the average tariff is US\$0.13 per kilowatt-hour.

In countries dependent on diesel-based systems, tariffs are higher still, it says. Given poor reliability, many firms operate their own diesel generators at two to three times the cost, and with attendant environmental costs.



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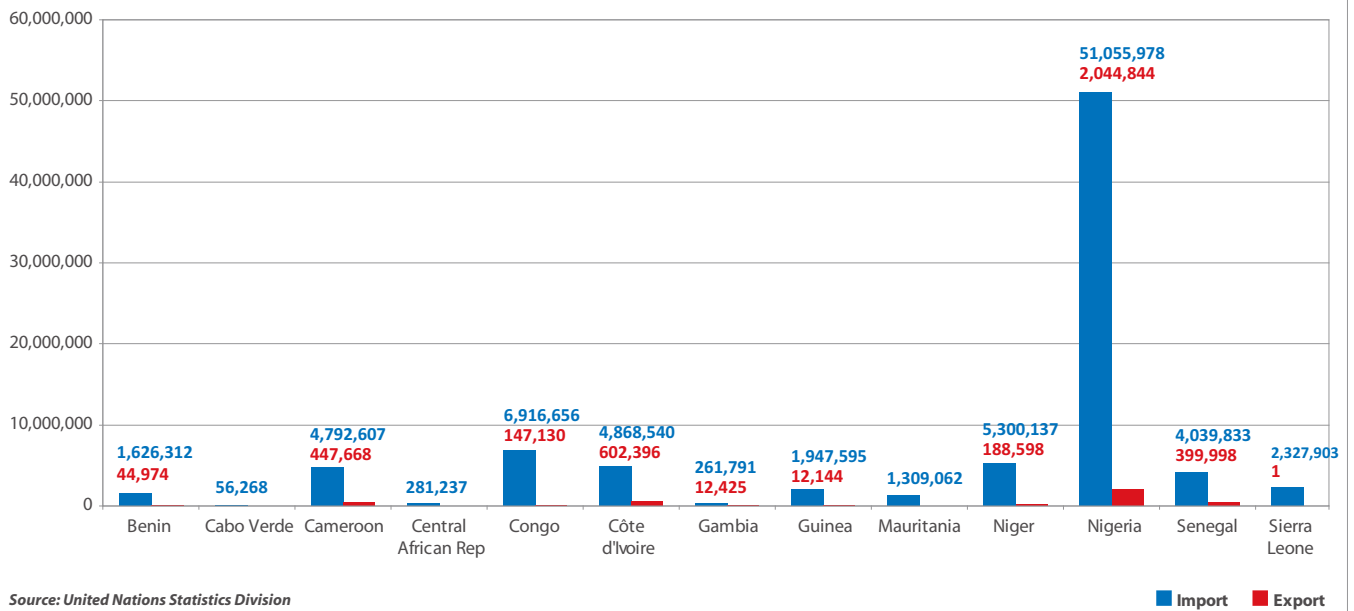


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Genset Import/Export Trade (US\$) 2014 - West Africa

Generating sets, diesel, output 75-375 kVA



Import/export trade

Sales of products in the genset market have been particularly strong in regions that have an unreliable electricity supply, such as countries in Africa, Latin America or Asia. Despite a sluggish economic backdrop generally that affected overall global demand, certainly in developed markets like the USA, last year appeared to be a good one for genset manufacturers and equipment suppliers in Africa, suggests UN data. In the three countries where the most recent numbers were available, showing sales for 2015, all recorded an increase in the volume of import trade in diesel gensets with an output range between 75-375kVA.

Ethiopia imported US\$19.9mn in gensets and equipment during 2015, up from US\$13.4mn the year before. Similarly, Mozambique imported a total value of US\$4.4mn, up from US\$3.7mn in 2014; while Zimbabwe imported US\$5.5mn in 2015, up from US\$4.7mn in 2014. Such figures are dwarfed by trade in bigger markets, like Nigeria, however, where the import value just for similar size diesel genset units topped US\$51mn last year alone.

North Africa is an important genset import destination, with Egypt buying in US\$58.6mn worth of

goods in the same range in 2014 and Algeria taking almost US\$31mn.

South Africa also imported US\$18.6mn in 2014 despite having the continent's most expansive power grid and the largest and most diversified economy. The country is also a significant supplier of genset units and equipment to other parts of Africa, notching up a healthy US\$9.6mn in exports and re-exports in the same year, serving as a regional hub. Nigeria too exported a little over US\$2mn as well to neighbouring countries.

Industrial projects

The applications and uses for all of this equipment is as varied as the

type of gensets, from small micro applications supporting remote telecoms towers and other installations to critical power for heavy duty industrial demand or even grid support.

Recent major projects include UK-based Clarke Energy supplying a 39.6MW on-site power plant for two factory units in Algeria. The deal highlights the opportunity even in the face of weakened growth and low energy prices, with oil and gas critical to the Algerian economy.

Clarke Energy, GE's authorised distributor of Jenbacher gas engines in Algeria, was selected by the Cevital Group to supply power for the group's Brandt household

electronic appliances factory in the city of Setif, along with their Laminoir factory in Oran. The natural gas-fuelled captive power plants will utilise nine of GE's 4.4MW J624 gas engines to support the two factories' expansion, in a deal that represents the largest gas engine order for Clarke Energy and GE's distributed power business in North Africa to date.

"With Algeria's continued industrial expansion, the deployment of high-efficiency distributed generation capacity will play a key role in meeting the country's increased energy demands," said Clarke Energy's business development director, Ali Hjaiej.

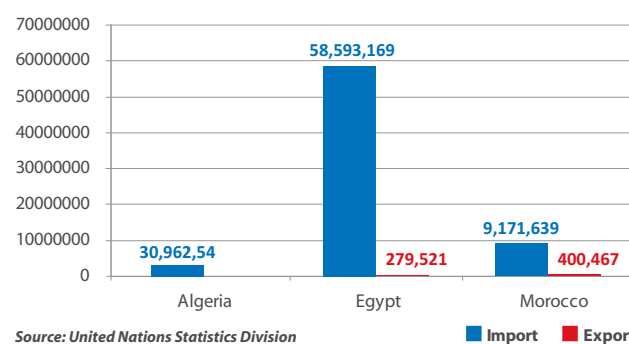
It follows a smaller project in Tanzania to supply a single gas engine to Said Salim Bakhresa & Co Ltd for a combined heat and power plant for the Azam flour mill in Dar es Salaam.

National grid

It is not just major industrial customers, however, with state power utilities also still calling for gensets to support weak national electricity networks. Rolls-Royce recently delivered 36 MTU Onsite Energy brand natural-gas-powered gensets for a gas power plant in Ghana. The Type 16V 4000 L32

Genset Import/Export Trade (US\$) 2014/15 - North Africa

Generating sets, diesel, output 75-375 kVA



gensets produce 1,560kW of power and will feed 56MW into the national grid.

Ghana has been suffering from an acute shortage of power, with the Ghanaian Energy Commission resolved to feed an extra 3,000MW into the grid by 2020. Oil and gas fields have been under development since 2007, and since that time these two fuels have been the country's primary sources of energy.

"Our gas-powered engines are particularly well-suited for distributed power plants such as those in Ghana," said Andrea Nono, chief executive of MTU South Africa. "They offer rapid solutions that can be implemented in a relatively short time and are thus capable of helping to stabilise public power supplies."

Ghana's VRA Tema thermal power plant was built and is operated by the VPower Group, a specialist in decentralised power generation.

“ The value of genset imports is forecast to grow from US\$450mn in 2011 to reach US\$951mn by 2020

Like Aggreko's 200MW project in the Ivory Coast, it underscores just how integral providers of temporary power solutions have become to Africa's energy sector. It also shows how genset makers can adapt to changing local market conditions, as new or alternative fuel sources are made available.

East Africa

Analysis of the East African market by Frost & Sullivan indicates that the shortfall in energy supply will continue to drive strong demand for new genset capacity, while gas will similarly make an increasing impact

over time. In 2014, Kenya, Uganda and Tanzania generated revenues from diesel gensets of US\$135mn, US\$45mn and US\$145mn respectively in 2014, Frost & Sullivan reported.

By 2018, however, revenues generated by gensets in these markets are estimated to reach US\$169mn, US\$65mn and US\$220mn.

State utility Kenya Power and Lighting Company (KPLC), represents 97 per cent of the rented power market in the country. It has to rely on secure power from genset rentals with severe droughts limiting the capacity of hydro-powered plants.

In all cases, businesses across the

region have turned to diesel gensets in order to maintain stability of operations. However, the recent discovery of gas offshore is generating interest in using gas as a feedstock instead of diesel.

Since the running costs of gas generators are typically lower than diesel generators, market participants stand to be increasingly affected by this development.

Building relationships

With current demand for electricity in Kenya, Uganda and Tanzania far outstripping supply, companies that can supply effective diesel gensets, that ensure a more stable supply are well poised to gain market share.

At the same time, continuing economic growth and population rises will only increase the demand for power. Key local players include Blackwood Hodge, which has operated in the Kenyan and

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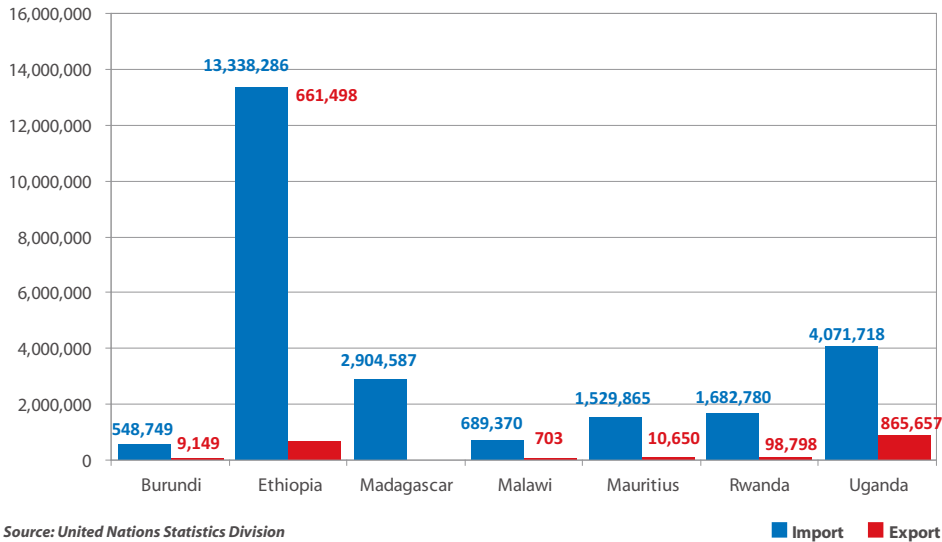


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Genset Import/Export Trade (US\$) 2014 - East Africa

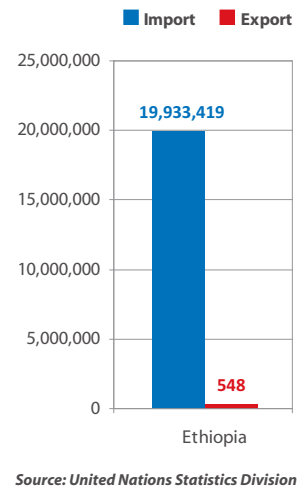
Generating sets, diesel, output 75-375 kVA



Source: United Nations Statistics Division

Genset Import/Export Trade (US\$) 2015 - East Africa

Generating sets, diesel, output 75-375 kVA



Source: United Nations Statistics Division

Ugandan markets for over half a century, selling FG Wilson generators for the local and regional market.

Among other things, it has built its success on customer service with clients naturally loyal to a brand they know well, or to one with a long established in-country presence, enabling effective after-sales service.

For new entrants, the challenge is to build trust as they develop a resume and nurture client relationships. While cost and price competitiveness is always key, end users also prioritise after-sales service and support in their decision making process. Conversely, any suppliers distributing lower quality or cheap diesel gensets that perform poorly or frequently breakdown, or are perhaps not best suited to the task in hand due to poor choices by

technicians with insufficient skills, will not enhance a reputation long-term for any player.

Tough competition

These are all important considerations in a market where competition for business is tight.

Other prestigious names competing for business in Africa include Volvo Penta.

Alongside sister companies, Volvo Construction Equipment and Volvo Trucks, it enjoys significant advantages as part of the world famous Volvo Group, not only benefiting from the group's brand heritage and considerable R&D muscle, but also, capitalising on long expertise in areas such as the construction market.

The company is one of the few

large suppliers of power generation engines that doesn't build its own branded industrial gensets.

Volvo Penta also offers a broad dealer network and access to a dedicated team of technical specialists to its customers, with 3,500 service points globally and 24/7 support in 28 different languages.

This global service network helps the company to develop and maintain strong, valued and long-term relationships. Volvo Penta is working to expand its service network by partnering with Volvo CE dealers around the world.

West Africa

Like eastern Africa, it is a similar story in West Africa where competition for business is just as

keen, in what is every bit a growth market.

Nigeria, Africa's most populous country, is expected to remain as one of the top buyers of gensets and equipment for years to come.

India's Mahindra & Mahindra (M&M) recently incorporated a new subsidiary in the country to expand its reach right across the West Africa region. The West African unit is itself a part of Mahindra & Mahindra South Africa Pty Ltd, which, in turn, is a wholly-owned part of Mumbai-based M&M.

The new West Africa business "is incorporated to promote the Mahindra brand and expand its reach into the West Africa region for its various businesses like auto, tractors, two and three wheelers, genset construction equipment,

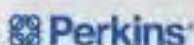


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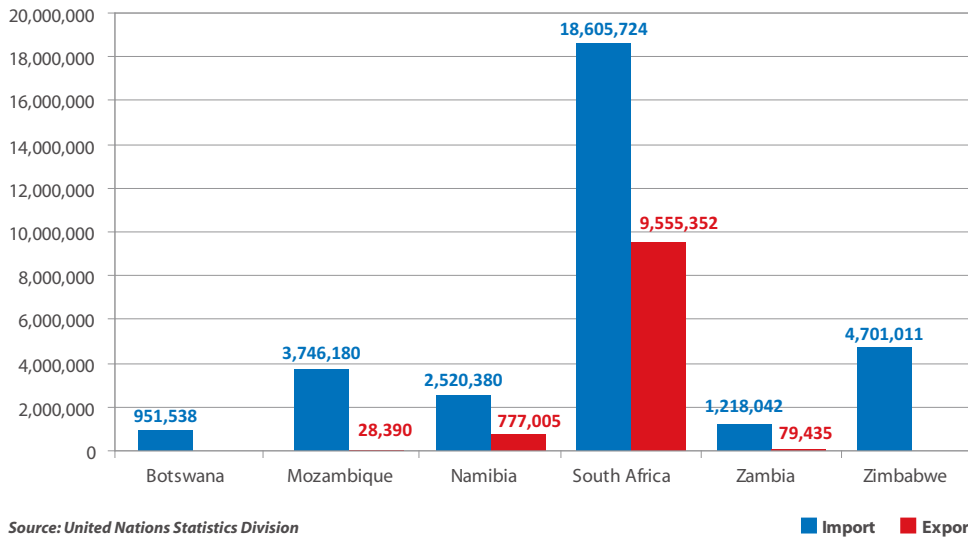
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Genset Import/Export Trade (US\$) 2014 - South Africa

Generating sets, diesel, output 75-375 kVA



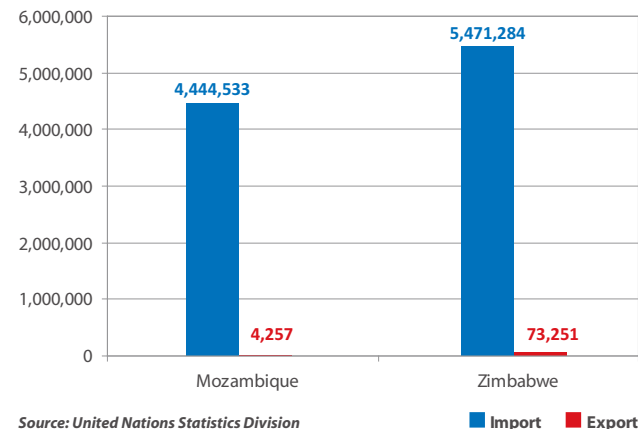
course, one way that reputable companies can help to differentiate themselves from the competition.

Another way is through continual innovation, searching for ways to better support customers with new products, now a key feature of the African market among leading players. The Cummins QSK95 Series of high-horsepower gensets were unveiled earlier this year in South Africa for example. The product enjoys ratings of up to 3,500kW and delivers high-horsepower output while achieving installation economies with an innovative small-footprint design, the company says.

"Innovation is about unlocking and unleashing new ways of thinking, doing and delivering against a background of continuous improvement," Andre Kuhn, general manager of Power Generation for Cummins Southern Africa, said as the new genset was launched. ■

Genset Import/Export Trade (US\$) 2015 - South Africa

Generating sets, diesel, output 75-375 kVA



(OEMs). The Nigerian market is flooded with gensets of varying quality and, hence, varying prices as a direct result of the lack of quality control regulations. This is, of

truck and buses and agri," M&M said in a recent regulatory filing.

Despite the privatisation of parts of the Nigerian electricity industry in recent years, the country is still struggling with a major power crisis, which is driving demand for gensets.

High demand is coming from industries across the board, including the all important oil and gas sector, both onshore and offshore. The rapid rise of the telecommunications sector, as well as the manufacturing, commercial and construction industries, are also driving growth.

The value of genset imports is forecast to grow from US\$450mn in 2011 to reach US\$951mn by 2020,

according to global research consultancy GBI Research.

Quality control

As the demand for gensets is set to gradually rise in parallel with the country's economic growth, more equipment suppliers are entering the market.

Not all gensets are created equal, however, underlining the need for customers to ally with a high quality partner, with a proven reputation and supplying a high quality product. The absence of standardised quality control regulations in parts of the West Africa region is a key challenge for original equipment manufacturers

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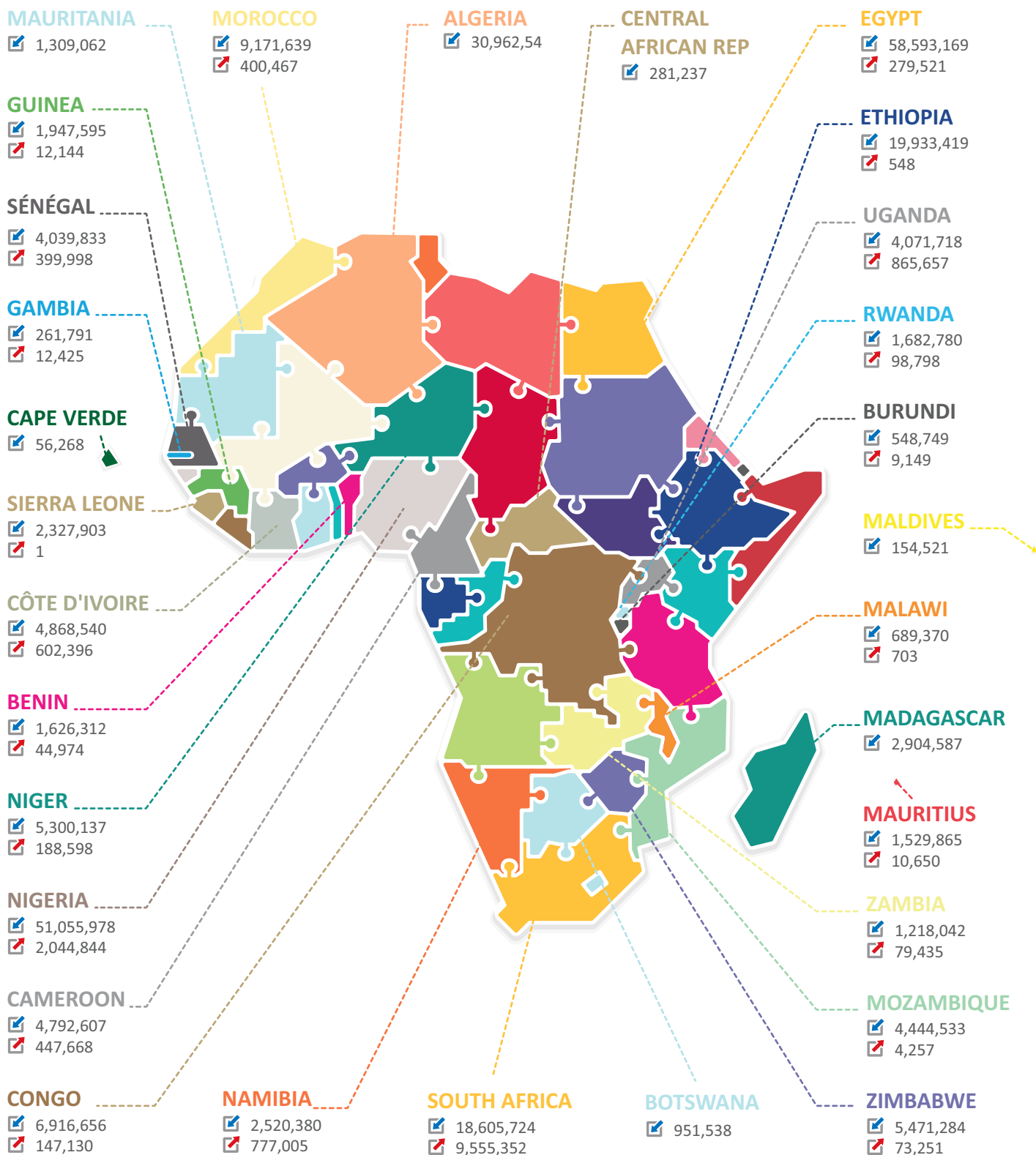
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Source: United Nations Statistics Division

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POWER PRODUCTS

SDMO, who presented information on its various genset products and services at the seminar, has been in partnership with SIRMEL in Sénégal since 2009



SIRMEL seminar targets power customers in Sénégal

A two-day seminar in Dakar hosted by SIRMEL aimed to enhance local knowledge on power solutions and products from French genset manufacturer SDMO

SIRMEL, a professional electrical solution provider based in Sénégal and an extensive supplier of SDMO products and services in the West African nation, hosted a two-day seminar in Dakar that aimed to educate and inform attendees on both companies' power solutions available to customers in the country.

The seminar took place on 17-18 May 2016 and was the first of its kind to take place in Sénégal. More than 200 people were invited to receive the latest information on SIRMEL's offering and the products and services available from its partner SDMO.

The seminar targeted professionals working in a range of sectors, with the first day aiming to provide relevant information workers in the service industry, technical professionals, architects and telephony experts. The second day was targeted towards the requirements of industrial professionals, installation engineers, construction workers and land developers.

The programme included a presentation on SDMO and its various products ranges, including Portable Power, Power Products, Rental Power and Power Solutions, with a particular presentation focusing on the Power Solutions

side of the business. Professionals from SDMO who helped lead the seminar programme included distribution network manager Marc Lesven and power solutions manager François Guyot.

Among the participants at the seminar, which took place over two days in May 2016 at the Hotel Terrou-Bi on the outskirts of Dakar, were SIRMEL CEO Wael Attieh, commercial engineers Sophie Mbaye Diallo and Paul François Sarr, technical sales manager Bara Sarr, customer service manager Ayoun Samb and technical manager Ahmadou Dieng.

"After the two-day seminar, which was very successful as shown by the interest shown by the different companies and individuals who were invited, we can already guess that such events will take place again next year with different topics, as well as further specialised content that will enhance much of what was discussed during this year's seminar," said SDMO distribution network manager Marc Lesven.

SIRMEL, which in French stands for the 'Importation and Representation Company of Electrical Material', became an SDMO agent in 2009, the year it was established, and has been "the essential SDMO reference in Sénégal



The seminar covered a range of topics and provided information on SDMO's latest products and services

since 2015", according to the French power solution specialist.

SIRMEL, a subsidiary of French copper and optical fiber cable product manufacturer NEXANS, was formed on 1 July 2009 and its fast business growth has been demonstrated by what SDMO described as the "real dynamism of its activities".

SDMO has been quick to praise SIRMEL's service offering and the variety of complementary jobs it carries out for the company to whom it supplies products, representation, studies and advice, as well as offering support and highly-qualified customer service to its customers. SIRMEL also maintains an important stock of spare parts for SDMO machinery and offer around the clock assistance to users of SDMO power products and services. ■



More than 200 professionals were invited to the two-day seminar in Dakar

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Creating capacity, generating growth

An interview with Ann Brown, managing director of FG Wilson, marking five decades of global leadership in generator set production and supply

African Review: Tell us a bit about the history of FG Wilson?

Ann Brown: We were founded in 1966 by Fred Wilson. A true entrepreneur, Fred saw opportunity for generator sets amid the economic chaos of the early 1970s, and in the 1980s, under the leadership of his son Tom, FG Wilson was among the first to bring mass-scale production to generator sets, launching self-contained generator sets which were simple to buy, operate and easy to install.

They say it's important to be in the right place at the right time, but equally important is how you act when you see that opportunity. Both Fred and Tom had the vision and the will-power to make the most of the position they were in.

AR: What changes do you see coming in the generator set industry?

AB: Certainly over the last five to ten years, we've seen engines become more environmentally friendly and efficient and that has helped to drive down the cost per kVA of generator sets, which has been good for customers.

Twenty years ago, if you'd asked us about industry structure, we'd probably have said that the industry was likely to consolidate, with two or

three big global players, operating with economies of scale occupying the greater part of the world market and the rest of the business fragmented into many smaller players. Yes, today there are a handful of global generator set brands, of which FG Wilson is one, but there has also been an explosion in the number of regional players, packaging locally, and riding on the reputation of the engine brands which they package into their products. These local packagers can be very cost-competitive and it's given customers more choice.

But, in the next five to ten years, we see customer expectations rising in terms of product quality, performance and support. It's going to be common across all industries. The mentality of price-is-everything and sell-and-forget will always be there in a part of the market, but overall we see expectations rising.

AR: Is this where you are putting emphasis?

AB: Yes, very much. It's about more than just putting the metal together.

Since 1990 we've installed 600,000 generator sets with a total installed capacity of almost 90GW - more than the total installed mains electricity capacity of a country like the UK. In Africa, we've installed

over 130,000 units with a total capacity of over 12GW, double the total installed mains electricity capacity of Nigeria. With that number of machines operating across the world, we take no risks with quality or performance. Assembling a generator set isn't difficult, which is why we're seeing many new players today. The real value comes in the testing and validation before a product launch. We don't accept engine performance data without validating it ourselves in the environmental conditions which our products will see. When someone buys one of our products, we can safely say that wherever it will be operating, it will have been tested for that environment.

Also important is the way a generator set is sold. We've worked tirelessly to grow and develop a global network of over 300 distributors who offer automotive industry levels of service starting with product selection through to installation and a lifetime of support. They're trained by us and supported by our parts system which stocks over 11,500 parts and delivers three million parts a year, not only for our current products but also for legacy products.

Product testing, validation, establishing dealer channels and support are more difficult to do well and over the last 50 years we believe we've invested more time and resources in all of these than most other generator set brands.

The generator set industry isn't living on an island all on its own. More and more, it's feeling influence and behaviours from other industries. We all expect more from what we buy. And that is going to



drive change and scope for new products and services.

AR: You mentioned the environment earlier. Does renewable power enter into your plans?

AB: It's certainly in our thinking. Today, in terms of cost per kVA, flexibility and responsiveness, there's no better source of standby power than a diesel generator set. However, our parent company Caterpillar has entered the microgrid market and is actively selling integrated systems where you might have solar panels, batteries, wind turbines and generator sets all linked and capable of powering remote settlements. In regions like Africa and Asia, this has huge potential.

AR: And you see great potential for the generator set industry?

AB: Yes, definitely. All of us in the industry are feeling some economic turbulence right now, but there will always be a growing and insatiable need for electric power. As the world goes more digital, we're going to see exponential growth in demand for electric power and for systems which act as standby for mains failure. ■

“ As the world goes more digital, we're going to see exponential growth in demand for electric power and for systems which act as standby for mains failure

ANN BROWN, MANAGING DIRECTOR, FG WILSON

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genset mainly depends on the fuel price, delivered on site. And the mid-term future trend is pointing at a further rise. Depending on country and region, fuel price today ranges from US\$0.5 up to US\$3.0 per litre. This results in a levelised cost of electricity (LCOE) produced with fossil fuel from US\$0.16 per kWh up to more than US\$1 per kWh.

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In systems with limited capacity, like microgrids, PV output must be curtailed dynamically to keep the genset above a specific loading. This is absolutely essential to avoid increased wear and to reduce the strain on the generator, thus keeping it healthy. The Fronius PV-System Controller guarantees an

extremely quick and responsive control of the PV output.

Easy to install for new gensets or for retrofitting

The Fronius PV-Genset Solution is the easy to install fuel saver. It can be commissioned by a local installer, even if retrofitted to an existing diesel generator system. The Fronius PV-Genset solution, which consists of Fronius inverters and the Fronius PV-System Controller, can be integrated into any genset system without touching the existing cabling or generator load settings.

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There are two 900KVA LTP soundproof gensets, model IT-865, equipped with an MTU Diesel engine, at 60HZ.

Each genset has a panel integrated into the sets' chassis for island synchronisation with the DSE 8610 control module (to synchronise both sets with each other), along with a shared external ATS panel for the sets and the mains, which enables the synchronous operation of both gensets with the mains. The DSE 8660 control module and two 2500A motorised thermomagnetic circuit breakers are the components of this ATS panel.

The sets can operate in two different ways with this system.



Two Inmesol IT-865 model parallel on Island, mains-synchronised gensets

“ The sets can operate as a backup in the event of mains failure, and to support excess in energy demand

As a backup in the event of mains failure:

The sets are in stand-by when the mains are available within acceptable parameters. In the event of mains failure, both sets will start simultaneously,

synchronise, and take on the load. Depending on the load required by the facility at any given time, both sets will continue supplying power, or one will stop and the other will take on the full load until consumption is above a specific

(programmable) threshold, at which point the second set will start again, synchronise with the first set, and take on the load.

When the mains are back up, and acceptable voltage and frequency parameters are reached, both sets will synchronise with the mains and the load will be transferred to the latter without losing power supply at any point. After an acceptable cooling time, the sets will stop, leaving them ready to start on the next mains failure.

higher than the supply available through the mains. There are two operational modes in this configuration:

- The sets' control modules can be configured for peak-shaving, a mode where the sets will provide the energy that cannot be supplied by the mains to the facility, balancing the power supplied by the sets according to the facility's needs, and consuming the maximum energy available or up to the limits contracted through the mains.
- Additionally, the sets' control modules can be configured to have the sets providing a steady (adjustable) power, leaving the energy demand changes of the facility to be supplied by the mains. This mode is known as base-load ■

To support excess in energy demand:

For this configuration, the gensets will start simultaneously, synchronising with each other and with the mains, to start supplying power along with the mains when the facility's energy demand is



Multiple parallel and stand-by to the mains sets operation infographic

Pay-as-you-go solar power

How a new market entrant in the East African renewable energy industry has sought market share and to promote best practice



Azuri's HomeSmart offering enables access to electricity produced by solar panels

Sub-Saharan Africa (SSA) is characterised by a lack of access to electric power. The national grid does not reach millions of Africans, forcing them to live in poverty due to a lack of opportunities that are often driven by availability of energy sources including electric power.

Available statistics show that over 600mn people in the region face 12 hours of darkness daily. Around 622.6mn people out of an estimated continental population of 1.1bn (70 per cent) do not have access to electricity. The overwhelming majority of those without access to electric power live in rural areas. Furthermore, a mere 14 per cent of the region's rural area is connected to electric power, in contrast to 60 per cent of urban centres. So, half of the population in 38 of the 49 SSA countries live without electricity - with the worst affected being Liberia, South Sudan, Central Africa Republic, Chad, Sierra Leone, and Malawi.

With limited options, many of the citizens turn to the use of kerosene lamps or candles, or merely light their homes with firewood - all of which are dirty fuels that pollute the

air, leading to high incidences of respiratory diseases and carbon build-up in the atmosphere.

Off-grid solar systems

A commercial provider of PayGo solar home systems to rural off-grid communities, Azuri Technologies recently launched a subsidiary operation dedicated to East African energy markets. Based in Kenya - where 51.4mn of 54.3mn (94.7 per cent) of the population do not have access to electricity - Azuri East Africa brings together Azuri's East African activities under a single operating entity in order to best share the organisation's knowledge of PayGo best practice while maintaining the responsiveness of local representation.

Multiple markets

Since introducing pay-as-you-go solar power to the Kenyan market in 2011, Azuri has expanded its reach away from Africa's 'Silicon Valley' to serve some 80,000 households across multiple African countries. Azuri's East African entity has been created to facilitate expansion across the region. As general

manager at the Nairobi office, Snehar Shah brings two decades of expertise in investment, finance and business development to the operation. Snehar was formerly regional chief financial officer at Eaton Towers. He also has a strong history in the telecommunications and consumer services markets - including work with mobile operator Orange, where he was head of the company's mobile money business unit. He reported recently, "I was brought up in the Rift Valley where my grandfather was the pioneer in supplying battery-operated radios, TVs and torches, and I am proud to be part of the growth of the pay-as-you-go solar products to the mass market in the same region."

Azuri Technologies' solar systems ally European design with high-quality components to provide enough clean and reliable power for lighting and mobile phone charging. For example, Azuri's latest products include:

HomeSmart, a machine-learning technology that adapts to each customer's individual needs to guarantee light at night, even in

cloudy conditions. Instead of an upfront cost, Azuri systems' pay-as-you-go model provides access to power to rural off-grid households.

Affordable energy

The company's solutions were appraised recently by deputy director of renewable energy at the Kenyan Ministry of Energy and Petroleum, Faith Wandera-Odongo, who said, "As the country continues to grow, greater demand is placed on the national grid due to increased economic activities. Strategic alternatives like those promoted by Azuri Technologies are instrumental in providing necessary clean and affordable solutions for both rural and urban consumers."

In Kenya, Azuri's Quad solar home system provides customers with four LED lights with mobile phone charging and a rechargeable radio for KES 50 (50 US cents) per day. The new Duo product, with two lights and charger, requires no deposit and equivalent daily payments are as low as KES31.50 per day. ■

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Powerful technology for new projects

Kenya Power installs 20 transformers to boost supply quality in the East African country's North Coast, as it develops outdoor metering to boost revenue collection

East African energy utility Kenya Power has completed the installation of 20 new transformers in its North Coast territory in a bid to stabilise electricity supply in the area and address frequent outages. This is part of a major project that the company is undertaking to address supply challenges that customers in the north have been experiencing. Other activities meant to enhance reliability of supply involve cutting and pruning of trees near power lines, replacement of broken insulators, jumper rehabilitation and reconductoring high and medium voltage lines.

The project also involved installation of new low and medium voltage lines to ease pressure on the network in the North Coast, as well as upgrading existing transformers and distribution lines.

"The current situation has been brought about by a long period of underinvestment in the electricity sector. To address the supply challenges currently being faced by our customers, we intend to set aside Sh13bn (US\$128.4mn) in the next financial year to maintain the existing infrastructure across the country, up from Sh11bn that was budgeted for this financial year," said Kenya Power's managing director and chief executive officer, Dr Ben Chumo, addressing members of the North Coast Ratepayers & Residents Association during a customer engagement forum held recently in Mombasa.

Kenya Power's general manager for network management, Eng Daniel Tare, has confirmed also how the company has been carrying out maintenance on high voltage lines in the area to address supply challenges. He said, the company's focus was on carrying out intensive



Kenya Power looks to extend access to power out of Mombasa to the North Coast (Photo: Andrea Seemann)

maintenance on "the Nyali and Shanzu substations and 12 high voltage lines serving the North Coast area". He said the company had also improved "the base generation at the Coast region to between 100 and 120MW".

Making more money

The move to develop infrastructure along Kenya's North Coast follows efforts by Kenya Power to improve revenue collection, to make more funds available for further investment in grid development.

Nearly 80 per cent of large power consumers have been connected to outdoor meters as Kenya Power has moved to deepen use of technology to enhance efficiency. The outdoor metering project involved the installation of smart meters atop a pole to ease access by Kenya Power staff and to reduce disturbance to

customers during reading and inspection of meters.

The undertaking was already part of an ongoing smart metering project that is being spread to all power consumers - and all existing large power consumers in particular. About 5,600 outdoor meters have been installed near customer premises, at a cost of Sh3.2bn. Large power consumers account for about 55 per cent of Kenya Power's revenue from electricity sales.

"Outdoor metering is expected to streamline operations and consequently enhance revenue collection from electricity sales. This technology is critical especially at this time when the company is targeting increase the rate of electrification in the country to achieve universal access by 2020," said Engineer Rosemary Oduor, Kenya Power's acting general

manager for customer service.

Smart meters support two way communication between Kenya Power and the meters making it possible to carry out real time monitoring of energy consumption hence detect when any anomaly in supply occurs.

With the technology, it is also possible to read meters remotely, disconnect and reconnect remotely in the event of non-payment, reducing the need for sending technicians to site.

"We introduced a smart metering technology solution to enhance revenue protection and customer satisfaction. In addition to generating automatic surveillance alerts, smart metering enables remote meter reading, time of use tariff functionality, disconnections and reconstructions of supply to customers," said Engineer Oduor. ■

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Project partners close deals for development at AEF

Notes from the Africa Energy Forum, which offered industry insights into the future of Africa's economic, industrial and social development

According to event organiser EnergyNet, the 2016 Africa Energy Forum saw US\$3bn of deals done between public sector entities and private sector enterprises. Held in June in London, in the UK, the event itself was attended by around 2,000 investors, 500 public sector stakeholders, 300 technology providers and 270 developers, representing 82 countries. With four conference streams and an exhibition, there were plenty of opportunities for solution providers to showcase their technologies and services and share market knowledge.

The Africa Energy Forum acts as a central meeting point for African and European developers and investors to build relationships with governments, utilities and regulators from across the African continent. AEF participants met key industry-decision makers and discussed challenges with respect to power generation and opportunities for investment in energy enterprises. Initiatives at AEF 2016 included the Off the Grid Club, occupying a dedicated area at the event, representing around a new membership programme developed to bring together off-grid technology providers, financiers and other energy stakeholders committed to introducing reliable and scalable power solutions. Additionally, the Growing Economies Energy Forum at

Sierra Leone's commitment to renewable energy, as affirmed by Energy Minister Henry Olufumi Macauley at the African Energy Forum, comprises funding for hydropower to 5,000MW, home solar deployments and wind farms. "We are making sure we have an energy mix that includes a fair amount of renewable energy," he said.



The continent's commitment to renewable energy was fully-represented at African Energy Forum

AEF hosted open discussions between governmental representatives and private sector executives over new energy markets, helping to create frameworks and mechanisms that are aligned with specific political and economic developments.

Amongst the most intriguing initiatives at the Africa Energy Forum, the EnergyNet Student Engagement Initiative (ESEI) enabled 32 students to explore issues associated with engineering, finance and law, and to engage with high-level policy makers, delegates and sponsors. The ESEI corps at this 18th AEF included three students who have secured internships with Engie, four at Norton Rose Fulbright and several others in African Ministries of Energy. In fact, students attending AEF this year in London benefitted from a dedicated session with the African Ministers attending the event, to learn their perspectives on national and regional energy issues.

Insights and expertise

Delegates at the Africa Energy Forum gained industry knowledge and insights from the Africa Energy Yearbook, published for the event to help inform decisions affecting the

future of Africa's economic, industrial and social development. Event organiser EnergyNet has also facilitated attempts by the developer Access Power to extend African access to energy with the launch of ACF 2016, a US\$7mn financial support mechanism designed to provide local power project developers and originators with the technical experience, expertise and funding required to make renewable energy projects

more viable. Key considerations for ACF funding are commercial, technical and environmental merits, the local regulatory environment, and the quality of the project team." AEF 2016 offered also the opportunity to engage with African Ministers, to examine developments in the continent's power sector at the highest levels of government. The event featured participation by: H E Hon Adama Toungara, Minister of Petroleum and Energy of Côte d'Ivoire; H E Hon Alemayehu Tegenu, Minister of Water, Irrigation and Electricity of Ethiopia; H E Hon Patrick Sendolo, Minister of Lands, Mines and Energy of the Republic of Liberia; and Henry Olufumi Macauley, Minister of Energy for the Government of Sierra Leone. ■

Will renewable energy investment in Africa be negatively impacted by the US Federal Reserve decision to raise interest rates on its Treasury Notes? The Ministers attending Africa Energy Forum in London believe it will not be problematic, that investment will remain strong, that the returns on investment will contribute to a stronger argument for extending access to energy than against improving energy infrastructure. The African Legal Support Facility has recently introduced a handbook on understanding the financing of power projects, which stresses that interest rate fluctuations are not significant with respect to power project funding and operational issues.

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Sustainable power solutions on show

Key pancontinental energy event promises opportunities for expansion of generation and transmission capacity, including the adoption of renewables



Renewable energy, particular solar, is prioritised at POWER-GEN & DistribuTECH Africa

Held at the Sandton Convention Centre in Johannesburg, South Africa, 19-21 July, the 2016 edition of POWER-GEN/DistribuTECH Africa promises pathways to creating new power infrastructure for sustainable economic growth across the continent. The event addresses renewable energy, fossil fuels and nuclear power generation, serving more than 3,000 attendees with over 100 speakers and 75 exhibitors, supported by a targeted business-to-business matchmaking service.

Generation and distribution

Speaking about opportunities at the 2016 event, Willy Majola, senior general manager: generation sustainability at Eskom, said a key factor in improving power generation and distribution was collaboration. He noted, "We are well aware of the big responsibility on our shoulders and the impact electricity has on our economy.

"Somebody once said 'electricity is the oxygen of our country'. It supports more than economic development, but quality of life. Power and other infrastructure bring clean water, clean air and a better standard of living for all. We

realise we cannot do it on our own. Therefore, we work with many international organisations and local universities to increase our knowledge and overcome challenges. In line with this, our partnership with POWER-GEN & DistribuTECH Africa, which has been in place since 2012, is a beneficial one. Through this association, we meet many industry players, which enriches us."

Glenn Ensor, event director at organiser PennWell, commented on one of the most interesting delegations, of Turkish solar product manufacturers travelling to South Africa to participate in the expo, to showcase advanced solar technologies suited to African markets.

Amongst the markets they are keen to penetrate, the host nation is

particularly promising for renewable energy enterprises. Dr Willie de Beer, industry expert and Chairman of the DistribuTECH Africa Advisory Board commented, "South Africa is reforming the industry by default. By introducing IPPs, enabling self-built transmission grids and supporting the solar revolution, our industry is adapting to change and moving away from the hW/H utility model."

Reaping rewards from renewable investment

Renewables, in particular solar, present significant hope for affordable power that can be rolled out quickly in under-served areas.

"Solar is reforming the industry, so utilities have to adapt to accommodate this," said POWER GEN & DistribuTECH Africa

conference chair Dr Willie de Beer.

And Sindiswa Mzamo, chief operating officer of the Edison Power Group noted that Africa had reached a tipping point for the adoption of solar power. She said, "Across Africa, solar is the solution for powering rural communities, because it is cost-effective and does not need to be connected to a grid to power an isolated geographic area. The wave of solar adoptions might be one of the most important initiatives in African power right now."

Stakeholders at the show are acutely that, due to the growing importance of solar power in Africa, POWER GEN & DistribuTECH Africa can be expected to focus strongly on solar technologies and strategies this year. However, the 2016 edition of POWER GEN & DistribuTECH Africa is about 'creating power for sustainable growth' through all channels - and so will also highlight a number of other key themes, including the maintenance and management of ageing assets, the nuclear power question, and advanced technologies and smart grids. The conference has also expanded its reach to include energy heavy industries such as mining, plastics and manufacturing. ■

“POWER-GEN & DistribuTECH Africa are practically the only places where you can get many policy makers under one roof.

CHRIS EDEH, DIRECTOR, AFRICAN SUSTAINABLE ENERGY ASSOCIATION (AFSEA)

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TEKSAN

Hitachi launches new ZX530LCH-6 large excavator

Designed and engineered to meet the demands of large-scale construction projects and quarries, the new ZX530LCH-6 large excavator from **Hitachi Construction Machinery** offers high levels of durability without compromising on efficiency.

With added protection for key components and high-quality materials, the new Zaxis-6 excavator offers exceptional reliability and outstanding availability. It incorporates unique Hitachi technology developed specifically for the Zaxis-6 large excavator range, and has incredibly versatile features for a wide range of challenging working environments.

Several features enhance the durability of the ZX530LCH-6 in line with Hitachi's overall goal to build the ultimate excavator. The boom has been reinforced with thicker plates, and the undercarriage consists of robust components including the track link, master pin, idler pedestal and bracket, and upper roller bracket.

The new Zaxis-6 large excavator incorporates other high-quality components such as the in-cab console, which is made of weather-resistant AES-grade resin that prevents damage from UV rays. The upper structure has high-quality sealant (around the cooling package) and acoustic materials to eliminate any deterioration caused by heat. These ensure the machine's long-term cooling and low-noise performance.

HIOS IIIB technology developed by Hitachi offers exceptional efficiency. It uses two pumps and control valves to reduce fuel consumption and cut costs. The ZX530LCH-6 can save up to five per cent fuel in ECO mode, with the same productivity as the previous model. This hydraulic technology also has a positive impact on productivity, due to the efficient swing, boom lowering, arm and bucket roll-out.

Another example of advanced technology is the after-treatment device that results in fewer emissions and a quieter performance. It consists of a diesel oxidation catalyst, urea mixing pipe, selective catalytic reduction (SCR) system and silencer. The SCR system injects urea into exhaust gas to reduce nitrous oxide (NOx). Pollutants are also reduced by the variable geometry turbocharger and high volume-cooled exhaust gas recirculation system (EGR).



The new ZX530LCH-6 large excavator from Hitachi Construction Machinery

TRAILERPUMP 15 ENSURES QUALITY CONCRETE

Metagalante has increased the range of solutions it offers with the introduction of the new Carmix TrailerPump 15 concrete pumps. Designed to transport concrete even higher and further, the new accessory is compatible with the company's entire range of self-loading cement mixers, from Carmix One to the most advanced Carmix 3500 TC. The TrailerPump is a powerful upgrade for any type of worksite.

At just over four metres long, with a height and width of about one and a half metres, Carmix TrailerPump is easy to maneuver on the worksite, thus allowing its operators to reach particularly high or difficult to reach areas. Its powerful twin-cylinder piston pump features a hydraulic control that ensures a capacity of up to 15m³ an hour at a pressure of 70 bars. The large hopper (240 litres) with the agitator, the grid with a 12V electrovibrator and the EasySpritz system, which optimises the pumping performance even in the event of a small load, are key factors that help increase productivity on the worksite.

VOLVO CE MARKS 50 YEARS OF HAULER INNOVATION

The 50th anniversary of **Volvo Construction Equipment's** leadership in articulated haulers has been marked by a week-long celebration held at the company's facility in Braås, Sweden, the base for hauler design and manufacture teams.

Customers from around the world, as well as members of the local press and other guests were offered the opportunity to see where the latest innovative generation Volvo haulers are built, appropriately housed in what is the industry's first completely CO₂ neutral production plant. Visitors also learned more about how the hauler will develop in the coming years, incorporating integrated offerings, connectivity and electro-mobility.

Those attending were educated in Volvo CE's history in the production of articulated haulers, beginning with the arrival of Volvo's DR631 - or 'Gravel Charlie' as it is still affectionately known - in 1966. The first of its kind, Gravel Charlie may only have had a 10-ton payload, but it paved the way for generation-after-generation of hauler innovation, helping Volvo consistently retain its market success.

Guests were brought to the present in the form of the H Series, including the industry's largest production articulated hauler with 6x6 configuration – the 60-ton capacity A60H - designed for heavy hauling in severe off-road operations.



The 60-ton capacity A60H, from Volvo CE

BRIEFS

ITC-SA at WoodEX for Africa



The ITC-SA exhibited at WoodEX for Africa

The **Institute for Timber Construction (ITC-SA)**, representing South Africa's engineered timber structure industry, attended the recently-held fourth WoodEX for Africa. Dr Pierre de Villiers, ITC-SA board director, said, "WoodEX for Africa represents a fantastic opportunity for us to share information and advice about timber construction, create awareness of the benefits of using timber in this way, and put interested parties in touch with ITC-SA registered members."

HAW expands pump portfolio



HAW's newly-developed PG331 cast iron gear pump

Hydraulic and Automation Warehouse (HAW), one of the largest distributors of hydraulic components in southern Africa, has added newly-developed PG331 cast iron gear pumps with extended longevity and numerous advantages to its existing range of Salami gear pumps and other hydraulic components. HAW key accounts manager Dries van Wyk said, "This range of pumps can accommodate any engineering design and satisfies a variety of OEM manufacturing designs."

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Successfully managing risk on site

Managing risk and promoting safety is paramount in engineering practice. Successful projects are not selected but shaped with risk resolution in mind. Risks are multi-dimensional and thus need to be unbundled for clear understanding of causes, outcomes, and drivers. Large engineering projects are characterised by substantial irreversible commitments, skewed



Large engineering projects need dedicated teams

reward structures in case of success, and high probabilities of failure.

Nevertheless, since their impacts depend on how they combine and interact, reductionism must be avoided. In outlining the types of risks associated with large engineering projects, initially the contract is the starting point and contains the contractual responsibility as well as details of any proposed insurance programme. Details of these are bespoke to the contract, and rarely is there an off-the-shelf insurance solution to complex engineering projects.

These projects are often firmly in the public view, especially high profile projects, and therefore face scrutiny on many levels. It is pivotal

that each project undergoes a risk analysis and insurance advisors in conjunction with the contracting parties will determine the level of coverage suitable to a specific contract.

The risks involved differ according to the different types of projects. For instance, oil platforms are technically difficult, but they typically face few institutional risks because they are often built far from public attention and are socially desired because of the high revenues they bring to communities and countries. Further, hydroelectric power projects tend to be moderately difficult insofar as engineering is concerned, but very difficult in terms of social acceptability. Another consideration

is nuclear power projects, which pose high technical risks but still higher social and institutional risks. Lastly, road and tunnel systems present very high levels of risk as rock formations usually hide surprises. These projects and the insurance risk run parallel to each other and a failure to address these can have far reaching consequences for the project. An enterprise risk management (ERM) framework is often developed by the contracting parties for a project with major risks being highlighted and managed through the framework which might entail the use of an insurance mechanism. ■

Alvin Dye, regional head - construction, Marsh Africa

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Building big in Ghana's capital city

The high-rise buildings currently financed by the Government of Ghana and foreign private investors may be changing the face of the country's capital city, but they are meeting demand and contributing to economic development. According to experts in the construction industry, over the next decade the country's construction industry will perform at an average annual growth rate of 6.1 per cent in real terms, principally driven by investment in energy and transport infrastructure. In particular, the real estate sub-sector is undergoing transformation through the construction of high-rise buildings in Accra. Districts including Airport City (an enclave at Kotoka International

Airport), Accra Central, Roman Ridge, Labone, the Osu Ringway Estate, East Legon, and Trasacco's Villaggio Vista at Tetteh Quarshie Circle are gaining high-rise buildings not only for corporate purposes but also and for private individuals.

In praise of development

Recently, Chief Momodu Dele, a Nigerian businessman, endorsed the leadership style of Ghana's President, John Dramani Mahama, for the infrastructural development in the country.

According to Chief Dele, "What I love about Ghana first, is the beauty of Ghana and I like a nation that is forward-looking and forward-thinking, and where the infrastructure is solid."

There remain issues with respect to funding, which have impacted on the pace of development in areas such as access to electricity.

However, the governmental stance is progressive.

As Chief Dele said, "I have seen a consistent performance by Ghanaian leaders to build a nation that will compete with Europe, America and Asia."

He added, "If you haven't been to the airport in the last two months and you go there today, you will be shocked at what you find and compared to what I have seen elsewhere...If you talk about roads, I am able to drive my car around Ghana without worrying so much about poor roads that can destroy those cars. I went to Kwame



Ghana needs a well-organised construction industry to deliver substantial economic development

Nkrumah Circle the other day after two years and I couldn't believe the level of work going on there."

African Review understands that the Ghanaian Government is working tirelessly to ensure that the construction industry in Ghana is well-developed, such that indigenous operators can perform as well as their foreign counterparts. ■

Emmanuel Yartey



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Capitalising on construction industry trends

South Africa's highly-competitive scaffolding and formwork market is benefitting from significant growth in three key areas

Analysts have predicted, 2016 will be a strong year for the Sub-Saharan construction industry, with increased demand and increasing business recorded already. This growth is reflected in a number of local, national and regional events - not least of which is South Africa's Cape Construction Trade Expo, set for 11-12 August, at which more than 100 exhibitors will serve the pre-construction, construction and post construction phases of the construction cycle.

Construction on the Cape is gaining from the dynamic growth in the local residential property market, which is outpacing the rest of South Africa. The FNB Western Cape House Price Index indicates "an average estimated house transaction price" of R1.353mn (US\$92,238). FNB also reports also, that, "cumulative house price inflation has been estimated at 290.5 per cent" over the last 15 years.

Such demand contributes to growth in the building sector, but in two senses, as the national economy drives demand from affluent groups and also those adversely affected by economic factors. As Bruce Swain, MD of Leapfrog Property Group, said recently, "The Western Cape property market has been outperforming the rest of the country, but as the economy stagnates even this area will be affected, albeit it likely not to same degree. The province will need to improve its availability of affordable housing and creation of job opportunities if the current growth is to be maintained long-term."

Technology, methods and practices

Such market demand aligns with three key industry trends identified by scaffolding and formwork



Construction workers and businesspersons operating in South Africa must observe safe practice in scaffolding (Photo: Fotolia/flyinger)

specialists at Cape Formwork Contractors (CFC). First, there is already increased interest in prefab or offsite construction methods. Second, there is growing interest in laser scanning technology. Third, safety is more important than ever.

Let's look at these factors more closely.

Also known as modular or prefabricated, this form of construction has been gaining ground as an alternative building method that offers the benefits of reduced construction time, less waste and possible cost savings. CFC has seen and expects to see more of these developments taking place around the city of Cape Town.

And the company reports that it has observed increased interest in advanced technologies such as laser scanning. Using a 3D laser, scanners can create a digital reproduction of

the exact dimensions and positions of objects in a certain space, and then turn that information into a point cloud image. The appeal of this tool is that it can enhance project flow and cost transparency.

Addressing safety concerns

CFC, its associates and competitors, continually reinforce the message that worksite safety is of paramount importance. In any case, companies in South Africa are required by statute to ensure scaffolding is constructed safely. Contractors must abide by governmental safety legislations and Occupational Health and Safety Act (1993) and SANS 10085 (South Africa's prescribed Scaffold supply and erection specification) to ensure that optimum safety is maintained during scaffolding operations and to avoid prosecution for accidents or death.

Over the course of history, as structural methods have continued to advance, one key element has remained a cause of concern - safety.

Historically, with scaffolds being erected by individual firms, there was no regulation of safety standards and practices. Today, after many developments, there are strict standards and regulations globally for the scaffolding industry. These include the specification of performance requirements and the methods of structure and design.

CFC maintains that scaffolding needs to provide a safe place to work from. The company stresses that it works hard to ensure strict safety measures are always met for each individual project and its unique environment. It urges African industry to follow suit, when completing any form of architecture and design. ■



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Symposium set for asphalt emulsion industry

This November, the Asphalt Emulsion Manufacturers Association (AEMA) will host the sixth in a series of symposia dedicated to the international asphalt emulsion industry. Organised under the auspices of the International Bitumen Emulsion Federation, the 2016 edition of the International Symposium on Asphalt Emulsion Technology (ISAET) will be held in Arlington in the USA.

Asphalt emulsion is a product of asphalt, water, and an emulsifying agent, as introduced into a colloid mill, which shears the asphalt into tiny droplets. The emulsifier, a surface-active agent, keeps the asphalt droplets in a stable suspension and controls the breaking time. The result is a liquid



The 6th International Symposium on Asphalt Emulsion Technology will explore new technologies and techniques for asphalt use (Photo: International Bitumen Emulsion Federation)

product with a consistency ranging from that of milk to heavy cream, which can be used in cold processes for road-building and maintenance.

Operators may use asphalt emulsions because they do not require a petroleum solvent to make

them into liquid - and because, in most cases, asphalt emulsions can be used without additional heat. Both factors play into an energy-saving methodology. Furthermore, asphalt emulsions offer great flexibility in application since they

offer the end-user a great variety of characteristics not found in other paving and maintenance materials. And asphalt emulsions are environmentally-friendly, since there are little or no hydrocarbon emissions produced as a consequence of application.

First prepared more than a century ago, today asphalt emulsions are used all over the world. They are used all over the world. Approximately 20 per cent of all asphalt used today is in the form of asphalt emulsions.

Research and practice

AEMA is a proactive organisation dedicated to the advancement of the asphalt emulsion industry, constantly focusing on system

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TOP TOWER 4000 / S / P					•	320	5%	
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preservation and the construction of the world's infrastructure. It promotes the increased and more efficient use of asphalt emulsions. Since 1973, the association has served as a forum for discussion, a clearinghouse of information, and a platform of action for the asphalt emulsion industry. Through its meetings, seminars, website, and publications, AEMA has helped to bring asphalt emulsion technology to all parts of the world.

The symposium is designed to embrace research and practice with respect to the manufacturing, use and performance of asphalt emulsions. The conference will provide a forum for discussion of leading research work, encourage presentation of case studies demonstrating the implementation of research into practice, and foster discussion on producing better performing and cost effective asphalt emulsions.



Asphalt emulsion accounts for 20 per cent of all asphalt applications globally (Photo: International Bitumen Emulsion Federation)

A technical programme

The ISAET technical programme will last three days and will build on the strong traditions established by the previous five World Congresses on Emulsions and the previous five International Symposiums on Asphalt Emulsions, which were held in Washington between 1996 and 2012. Topics will include:

- The Effect of Tack Coats on Asphalt Pavement Performance.
- Performance Oriented Guidance for Mississippi Chip Seals.
- Using Electrical Properties to Quantify Chip Seal Cure Times.
- Characterising Stability of Asphalt Emulsions Using Electrokinetic Techniques.
- Balanced Mix Design Approach to Design of Cold-in-Place Recycling.
- Characterising Emulsion Effects on Aged Asphalt Concrete Surfaces using Bending Beam Rheometer Mixture Beams.

- Performance of Bio-Modified Rejuvenation Scrub Seal Emulsions.
- Evaluation of the Amount of P200 on Water Resistance of Micro-Surfacing Mix Systems.
- Difference in Properties of Residues of Polymer Modified and High Float Emulsions from Different Recovery Methods.
- Large Scale Laboratory Evaluation of Ultra Violet Aging of Emulsion Surface Treatments.
- Preservation of Porous Asphalt.
- Evaluation of Various Commercially Available Rejuvenators for Rejuvenation of Aged Asphalt.
- Volatile Solvent Free Penetrating Prime Coat Emulsions with Higher Performance than Cutbacks.
- Phosphoric Acid Based Micro Surfacing Systems.
- Microsurfacing: Is Asphalt Film Thickness or Design Problem.
- Methods for the testing of Trackless Tackcoats. ■

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Equipped for efficiency and excellence

Improved performance and ergonomics are allied to superior economy and emissions in Bobcat's innovative new excavators

For more than 20 years, Bobcat's compact excavators have been designed to offer high levels of comfort, convenience and functionality. Now, after two decades in the compact excavator business, Bobcat offers different models combining superior operator comfort with three-arm configurations, a choice of conventional or zero-tail swing (ZTS), the unique all-hydrostatic drive system and an extensive dealer network to provide after-sales support.

Bobcat's compact excavators offer several advantages over larger equipment. The advanced hydraulic systems respond to loads with more usable power for faster cycles. The hydraulic systems combine speed and power to produce superior performance, reducing the time it takes to complete tasks. The machines deservedly own a reputation for long-term reliability.

Bobcat offers numerous attachments to maximise machine functionality, so minimising the need for multiple machines on job sites. In fact, most Bobcat excavators will have clamp mounts, fingertip controls and quick couplers as standard. The company also seeks to make maintenance as hassle-free as possible, ensuring easy access to daily checkpoints with a swing-open tailgate and side-access hood.

The E10 is typical of Bobcat's range, in that enables operators to work comfortably in confined spaces where larger machines can not fit. The ZTS design adds to functionality, and reduces the chances of incurring machine damage while working, thus delivering both a longer service life and lower total cost of ownership. The adjustable hydraulic joystick controls enable precise working, and the two-speed



operation allows faster repositioning. The hydraulics are sufficiently powerful for professional applications, and the retractable undercarriage ensures increased stability.

A zero-emission future with the E10 Electric

The E10 1 tonne micro-excavator is one of the most popular models in the Bobcat compact excavator range. It is also notable because it has been used as the basis for developing the company's vision of a emissions-free yet more efficient future. The company recently presented a fully-functional prototype of the E10 Electric - a zero-emission, electric powertrain version of the E10. Developed at the new Bobcat Innovation Centre in Dobris in the Czech Republic, in conjunction with electric vehicle specialists, the E10 Electric micro-excavator features an alternative all-electric powertrain, allowing the machine to be used in areas requiring zero emissions such as interiors and basement construction work. Along with zero emissions, the

E10 Electric model also offers very low noise levels on site, with an LpA of only 64 dBA.

The alternative powertrain option in the E10 Electric model comprises of an electric motor that can be powered both by a pack of rechargeable Li-Ion batteries or a 400V mains electric supply via a plug-in power cable. The batteries can be quickly recharged (at less than an hour to reach full capacity) and when fully recharged, the excavator can work independently of the mains power for 2-3 hours. The new E10 Electric model also offers the capability of carrying out work while charging via the mains power cable.

The E10 Electric version has the same zero tailswing profile and identical external dimensions as the standard E10 machine and offers the same or better performance. As the new machine is designed to be used in demanding indoor demolition applications, it is equipped with auxiliary lines and an efficient oil cooler system for continuous hydraulic breaker operation.

The E57W Stage IIIB wheeled excavator

Bobcat's E57W Stage IIIB compliant wheeled excavator is equipped with the company's D24 diesel engine, which delivers a four per cent increase in power (42.5kW), along with seven per cent fuel savings, over the successful E55W model it succeeds. In fact, the engine offers a distinctive solution to Stage IIIB compliance without the use of a diesel particulate filter (DPF). As well as reducing fuel consumption, this 'non-DPF' solution simplifies the operation and service of the machine, since there is no need for DPF regeneration.

The E57W has an operating weight of 5,920kg and incorporates an updated hydraulic system delivering enhanced hydraulic performance and a 10 per cent improvement in lift capacity. A long-arm option increases the machine digging depth to 3,795mm and the dump height to 4,510mm. Peripheral equipment can be attached to the machine via 1st, 2nd or an optional 3rd auxiliary circuit with operation by proportional controls.

A newly-designed cab and operator area features a seven-inch display, which enables fingertip operation of all of the machine functions. The cab also features a heated seat and ergonomically-placed controls. The simple, efficient operating procedures ensure reduced driver fatigue. In addition, the cab offers a certified rollover protection structure (ROPS) with outstanding visibility.

Overall, the new Bobcat E57W wheeled excavator is designed to offer high productivity, excellent fuel economy, enhanced ergonomics, improved reliability and reduced maintenance. ■

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A forum for sustainable urban development



GIZ has contributed to development of urban infrastructure in Cairo (Photo: Fotolia/Adwo)

In many of its projects, the German agency for sustainable development, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) tries to make urban landscapes sustainable and environmentally-friendly. Most recently, the German Government worked through GIZ to bring experts to Berlin to discuss the future of cities.

Around half of the world's population lives in cities, and that proportion is growing. While this trend is gaining particular momentum in developing countries and emerging economies, the authorities in these states are often unable to build sustainable infrastructure quickly enough to keep pace with the massive population growth. This often results in difficult living conditions and environmental damage.

The German Habitat Forum, held recently in Berlin, brought together professionals working around the world in the spheres of policy-making, the private sector, research and civil society to discuss ways of making cities sustainable and pleasant places to live. The forum is at the heart of Germany's contribution to Habitat III, the United Nations' global Conference on Housing and Sustainable Urban Development, which is due to be held in the Ecuadorian capital of Quito in October 2016.

Christoph Beier, vice-chair of the GIZ management board, spoke of the increasing importance of sustainable urban development to the work of GIZ. He said, "Of course, urbanisation is not a new phenomenon, but the trend is accelerating, becoming more

widespread and having a greater impact at global level," explained Beier. "Consequently, we may no longer look at cities in purely local terms, as they have a major impact on global public goods and trends, whether climate change, economic prosperity, social integration, democratisation or political stability."

Examples of urban expertise

Experts from GIZ have worked with local people to implement a neighbourhood redevelopment in a further project in greater Cairo, Egypt. Two thirds of the 20mn or so people currently living in the metropolitan region reside in informal, densely packed neighbourhoods, many of which are unplanned and have insufficient infrastructure.

Previously, most of the waste from these districts ended up in rivers, on streets and in public squares, giving rise to considerable environmental and health risks. Integrated waste management systems have been introduced in two poor districts of the Qalyubia Governorate with financial support from the Bill and Melinda Gates Foundation. Some 600,000 residents now benefit from an efficient refuse collection system and, as a result, clean neighbourhoods and more hygienic conditions. Reusable materials are also being extracted at a newly constructed recycling plant, contributing to resource efficiency and climate change mitigation activities. This also provides an additional way for informal refuse collectors to earn their livelihood. ■



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Clean materials for Algerian construction

Addressing an urgent need for high-quality sand in North Africa, as the region continues to develop its infrastructural operations

The core theme at 8ème Rencontres des Mines et des Carrières, held recently in Constantine, was: “It’s all about Algeria now.”

All may be a slight exaggeration, but with a superfiçy of 919,595m², more than 900 quarries and an external debt close to nil, the tenth largest country in the world is perfectly positioned to quickly progress its infrastructural development strategy. This dynamic emerging country’s ambition to become a strong economic player in MENA was recently showcased in the opening of the East-West motorway, a US\$11.2bn project, which links Tunisia and Morocco via a 1,200km road across Algeria.

With its finger on the pulse of the fast-developing North African construction market, CDE is anchoring its reputation in the region as the go-to washing materials provider for mines, quarries and construction companies.

In September 2015, just five months after initial contact, CDE installed its first EvoWash 151 for new client Sarl Lioua, located in the Biskra province in the North East of Algeria. The company has been operating for over 10 years and supplies sand and aggregates for construction projects across the country.

It started with a click

In early 2015, Sarl Lioua identified an urgent need for better-quality sand and started shopping around for the service provider that would best understand their requirements and deliver an efficient, built-to-last washing installation. It only took one click of the mouse for Zakaria Achour, director of Sarl Lioua’s quarry operations, to start what was to become a fruitful relationship with CDE Global.

At CDE, language is never a barrier. Mr Achour does not speak English, but dialogue was

immediately engaged in his native language as the company’s regional business executive for North Africa speaks English, French and Arabic. Mr Achour recalled, “We needed [a sand washing plant] to improve an existing installation. We were previously using a screw feeder to wash sand and we were losing a lot of fine sand.

“I discovered CDE by searching on the Internet. I sent an enquiry message through the CDE Global website and within a day I communicating with the company in my native language. After I explained our requirements, the CDE Business Executive who is based in North Africa came to Algeria to meet with us, spend a few days on our site to discuss our needs and introduced the work of CDE. He then presented the ways in which the washing solutions CDE offers could help.”

After exploring options with the CDE experts who analysed the

available feed material to develop the best value-for-money installation, the highly adaptable EvoWash 151 was elected as the solution of choice by Mr Achour for its ability to process a wide range of mixed materials, including Sarl Lioua’s sand and gravel, silica sand, iron ore and other construction and demolition waste materials.

The days of their sand screw classifier were counted.

ProMan – when simplicity makes all the difference

CDE subscribes to a simple and efficient project management system: ProMan. A project manager (ProMan) is an expert in the region, and for whom the requirements of the client becomes their unique point of contact. Supported by a project team that covers all aspects of the work, the ProMan accompanies the client from the conception of their bespoke washing installation to its commissioning, with responsibility to deliver the highest level of quality within agreed timeframes and costs. With the added bonus of fully transparent and straight-forward communications, the development, building and commissioning process becomes seamless.

As washing equipment is designed, built and tested at the CDE campus in Northern Ireland before being shipped to site, deployment of a turnkey EvoWash on the Sarl Lioua site was smooth and fast, to the Algerian company’s satisfaction.

“Our new CDE EvoWash installation has definitely met our expectations in terms of quality product, capacity and custom care services,” said Mr Achour, who added that his key priorities of “improving sand quality and having



CDE installed the EvoWash 151 for Sarl Lioua in Algeria

a professional customer service” had been met.

“The CDE Business Executive and our ProMan were ultra professional from the start of the project to the deployment of the plant on our site. And with the built-in 12-month warranty we know that we can contact CDE at any time if we have a problem or simply need advice,” he concluded.

Business development executive Aymen Bennour said, “It was a pleasure to work on the modernisation of Sarl Lioua’s operations with Mr Achour. Sand screw classifiers can be limited in terms of achieving a quality product that matches the requirements of construction companies.

“As Algeria continues to develop its infrastructural operations, sand quality standards for construction materials that are recognised at European level are becoming the



Aymen Bennour, business development executive at CDE

norm in the country. As a result, to remain competitive, quarry and mine operators need to quickly adopt efficient sand washing with cyclone technology if they have not done so yet.

“It just makes business sense to improve installations that waste fines and water and ultimately affect a company’s performance and ability to compete in a growing market. For instance an EvoWash

combined with a CDE AquaCycle are highly efficient in terms of production levels of consistent grades of sand whilst recycling 90 per cent of used water; this in turn makes for a very attractive proposition to clients in the construction sector.

“Sarl Lioua currently feeds the EvoWash plant at a rate of 150 tonnes per hour, with the option to increase this rate to 300 tonnes per hour at a later stage depending on their operations.

“The company can now offer its customers a consistent sand grade of 0/2mm with less than five per cent fines, produced to any desired requirements and quantities. With reduced loss of fine sand and increased, flexible and consistent production capacity, the EvoWash has proven the key to both peace of mind and higher return on investment for our customer.” ■

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WAMPEX offers the prospect of increased local content and sustainability

Visitors and delegates attending WAMPEX 2016 have reported positive prospects for the future of West African mining. In particular, conference delegates considered moves towards increased local content and sustainability as key commercial drivers. Exhibitors also reported a positive event. On the first day, the team at **The Steel Ball Company**, which makes grinding balls, reported that they had enjoyed “a great and really enjoyable day of trading”. West Africa Mining and Power Exhibition 2016.

WAMPEX 2016 was formally opened by Ghana’s Deputy Minister for Lands & Natural Resources, Hon Kwabena Mintah Akandoh, alongside the President of the **Ghana Chamber of Mines**, Kwame Addo-Kuffuor. The conference that followed attracted more than 100 delegates, and was notable not only for



Kwame Addo-Kuffuor, president, Ghana Chamber of Mines

the quality of speakers but also for the inauguration of the Federation of **ECOWAS XChambers of Mines**.

After the keynote address from Hon Akandoh, a principal conference focus on local content in extraction during mining.

Mr Addo-Kuffuor commended the conference emphasis on sustainable local deployment and employment, commenting, “Mining remains a vital sector now and in the future.”

At the conference, Alwyn Pretorius of **Newmont Mining** promoted a vision of a sustainable and responsible future for the continent’s mining sectors, focusing on refining strategic business models. Dr N D K Asante, technical director at Ghana’s **Energy Commission**, spoke on opportunities in the mining sector in relation to ‘distributed power generation’. There was also a session titled ‘The Ghana Power Compact: Powering Ghana for Accelerated and Sustainable Economic Growth’, presented by Owura Kwaku Sarfo, chief executive officer of the **Millennium Development Authority**.

Christine Davidson, vice president of **dmg-ems Africa**, co-organiser of WAMPEX, spoke of the networking, discussions

and knowledge-sharing she had seen at the event, and said, “It is clear from delegates, visitors and exhibitors, there is a positive view for the future and WAMPEX and WAMPOC this year have attracted key personnel in the drive for growth and financial security.”

PRESIDENT ALI BONGO INAUGURATES E3M

Gabonese President HE Ali Bongo Ondimba has inaugurated the **Moanda School of Mining and Metallurgy (E3M)** in the Gabon’s Haut-Ogooué province. The event was attended by São Tomé and Príncipe Prime Minister Patrice Trovoada.

“This school responds to the need for greater diversification in our economy. To achieve this goal, we need establishments that can provide training for our engineers and senior technicians. This Institute will help boost the performance of the Moanda Metallurgical Complex. Whether it’s for the production of manganese or iron, we need more human resources,” said President Ondimba.

The result of a public-private partnership between the **Gabonese Government**, the **Ogooué Mining Company (COMILOG)** and the **University of Nancy** in France, E3M offers a modern, well-adapted infrastructure for professional training.

SMART AND SAFE MINING MACHINES

Deployed in South African mines since 2015, **Booyco Electronics’** fully-integrated pedestrian detection systems (PDS) allow a safety intervention capability coupled with a data hub that enables integration with trackless mobile machinery (TMM) and other underground vehicles and equipment.

PDS incorporates very low frequency technology for pedestrian detection either on surface or underground together with GPS technology for vehicle detection on surface.

It delivers specific warning, controlled slow-down and stopping zone alerts around a vehicle when detecting pedestrians or other vehicles.



All Booyco Electronics PDS systems are subjected to quality control systems to ensure reliable operation

This is unique in that it is able to achieve zone shaping and create narrow band zones in close proximity on the side of vehicles. It features full self-diagnostics, and has visual and voice display activated in the case of a PDS warning or a system failure. The technology incorporates various downloading options for recorded data including wireless when at an access point. It is supplied complete with testing equipment for both the surface and underground areas to ensure maximum functionality.

The company has also developed a high processing power controller. It acts as a processing gateway and all sensing technologies and informational data is channelled through this.

► BRIEFS

Positive signs at Junior Indaba

There was positive news at Junior Indaba, held recently in Johannesburg, from the **African Union Commission**, South Africa’s **Department of Minerals and Resources**, and other industry stakeholders. Initiatives included the launch of an African Minerals Development Centre by African Union Commission chairperson HE Dr Nkosazana Dlamini Zuma, aimed at supporting and ensuring that African governments are better equipped to negotiate better terms and contracts in mining.

Dr Zuma spoke of the need to create sustainable linkages with local economies. She observed, “Africa’s abundant resources should be used to spur on our industrialisation, economic modernisation and diversification towards an integrated and peaceful Africa with shared prosperity.”

PwC cites market challenges for mining firms

The 2016 Mine report by **PwC** indicates a first-ever collective net loss (US\$27bn) for the ‘Top 40’ miners with market capitalisation falling by 37 per cent. PwC Africa mining industry leader Michal Kotzé, explained, “The Top 40 experienced their first ever collective net loss, their lowest return on capital employed, a significant drop in market capitalisation, and an overall decline in liquidity with the result that the Top 40 were more vulnerable and carrying heavier debt loads than in prior years...But this is a hardy industry, and while many miners may be down they are certainly not out.”

Mine 2016 also found signs of industry resilience, however - with a focus on maximising value from shedding assets as well as mothballing marginal projects or curtailing capacity.

Creating sustainable employment opportunities

Skills transfer and job creation have empowered local employees at the Mopani Copper Mine in Zambia, thanks to a joint venture between Redpath Mining SA and Rig Resources Zambia

Since officially entering into the three-year joint venture (JV) in March 2015, employment at Rig Resources has almost doubled from 217 employees to 433. Rig Resources managing director Anthony Kabaghe recently spoke of the company’s impressive progress in current market conditions.

Mr Kabaghe said, “The formation of this JV is clearly the beginning of more positive things to come.”



Redpath employees

Although still employed by Rig Resources, the employees now form part of the JV partnership, which is currently comprised of 421 locals and 12 expats, who are all working for Mopani Copper Mines on its various shafts. Mr Kabaghe said, “The advantages that this JV can offer Mopani go far beyond mining solutions, and will positively impact both the Zambian economy and local communities.”

According to Redpath Mining SA MD Ockert Douglas, both companies were working as independent contractors for Mopani, but it was clear that the client and the companies could benefit by combining their years of experience and resources. Mr Douglas said, “Redpath Mining SA has been involved with Mopani since 2012, and is currently executing some of the mine’s capital projects.”

Mining operations such as Mopani want to use more local labour and skills. As Mr Douglas said, “This benefits the communities in which we operate and, in turn, the country. The opportunity arose for both companies to create a suitable business venture with many of the elements that the mining operation and Zambian government were looking for.”

The JV currently covers the Mopani project at four sites – Mindola North, Mufulira, South Ore Body and Central. Mr Kabaghe reported, “Rig Resources provides local labour and Redpath SA

brings in experts to train local staff. Another major benefit that Redpath SA brings to the JV is its impeccable safety record, which currently stands at 448 days incident-free at Central shaft.” ■

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Factors affecting mining finance

Scott McCaw, managing director at Panafrican Group, talks to African Review on opportunities for prospective investors in minerals operations

Although the mining markets in Africa are expected to remain challenged over the next few years, we are seeing signs of some optimism as gold prices stabilise and trend upwards as a safe haven asset, iron ore has recovered to US\$55/ton from lows of US\$39, manganese has seen an improvement of 15-35 per cent in recent months depending upon the quality and coal projects remain in development due to coal to power projects in our territories. African Review interviewed Scott McCaw, managing director at Panafrican Group, to gain insights into current mining investment prospects.

African Review: In your experience, what is the variation in investor support for mining projects in different countries?

Scott McCaw: I think the variation is large. Clearly risk, ease of doing business and mining regulations play a role in the investor support decision. These are “country”

specific items and investors will allocate their capital to those most attractive. Some countries are improving and we have seen softening in regulations in Ghana, for example, while Kenya’s legislation is categorised as one of the worst in Africa by the Fraser Institute. This will have a bearing on investor’s decision on where to pursue mining opportunities or increase/decrease support.

Others to be considered include the commodity itself as well as the specific asset in play. With respect to the commodities, not all commodities will recover at the same pace so this will impact attractiveness and timing for support. Furthermore, one asset in one country may have very different economics than another mine of a similar nature in the same country. We can see this in the variation of “all in sustaining costs” of gold in Ghana which can range from roughly US\$600 an ounce to US\$1,150 an ounce depending upon the mine.

“ If countries wish to attract mining operations, which are energy intensive, then stable and relatively low cost energy is required

SCOTT MCCAW, MANAGING DIRECTOR, PANAFRICAN GROUP

AR: To what extent do governments incorporate mining operations into their national energy strategies?

SM: From an energy provision perspective, if countries wish to attract mining operations, which are energy intensive, then stable and relatively low cost energy is required. In Ghana, where aging infrastructure impacts cost of operations, mines need to seek possible alternatives. From an energy creation perspective, in countries such as Nigeria, Tanzania and Kenya, coal mining

opportunities are clearly part of the national energy strategy - the challenge being, the ability to supply at competitive prices relative alternative sources.

AR: How can companies utilise technology provided by entities such as Panafrican Group to improve profitability?

SM: This goes to cost per ton and there is no real silver bullet as every mining operation is unique. Panafrican will work with its customers to improve costs through fleet replacement with newer, more fuel efficient machines with lower maintenance costs as an example. But with lower current capital budgets, we are working in partnership with the mining companies to optimise their operations through condition monitoring to extend component life, operational analysis of mining equipment (cycle time reviews, haul roads analysis, bench heights), operator training, technical training, or providing alternative GET (ground engaging tools) solutions to increase productivity at a lower cost. So a wide range of technologies can be deployed working cooperatively with our customers depending upon their specific need. ■



Scott McCaw, managing director at Panafrican Group

Scott McCaw, managing director, Panafrican Group

The Ugandan gold prospects attracting investors

Although it is primarily a coffee-producing country, Uganda is nonetheless endowed with a variety of mineral deposits, spread across its territory - including gold. In order to further diversify its economy, the country's government's is now opening up the mining sector - and it has attracted a number of investors seeking gold exploration licenses.

Currently, most of the gold exploited in the country has been in a few places - including Mubende (central), Busia (eastern), Kigezi and Buhweju (south-west) and the Karamoja district (north-east).

According to the National Development Plan (NDP) 2010/11 2014/15 document, most of the mining activities in Uganda are undertaken by artisan and small-scale miners who use manual or labour-intensive methods. The document indicates: "Minerals produced are usually exported as concentrates without refining them. There is need for value addition since there are no facilities for the production of pure elements from mineral ores in Uganda except at Kasese Cobalt plant in Western Uganda."



More than 130,000 Ugandans work as artisans and small-scale miners, many in gold extraction (Photo: Fotolia/Neil Lockhart)

Moreover, with respect to the Sustainable Management of Mineral Resources Project, the NDP reports that about 1,000 artisan and small-scale miners have been trained in geology and exploration, mining methods, mineral processing, environmental management, business skills, health and safety, and various social issues.

International interest

The Ghanaian firms Blaze Metals and Ashanti Limited offer an example of successful local engagement by African firms with international portfolios. Ashanti Limited gained a license several years ago to prospect for gold in Uganda's eastern districts of Namayingo and Bugiri with the objective of exploring for produce, exploit, refine,

process, manufacture products and by products. The company has committed to investing US\$100mn in exploration and gold mining. Its target is two million ounces, but it anticipates a higher figure and that's its investment in the collaboration with Blaze Metals is set to continue. ■

Geoffrey Muleme

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MA16-16

RECTAGRID RS40 GRATING FOR MEZZANINE FLOORS

Companies looking to optimise space within warehouses, distribution facilities and manufacturing plants are increasingly using Rectagrid RS40 floor grating to create mezzanine floors. According to Elaine van Rooyen, marketing manager at **Andrew Mentis**, the primary purpose when creating



Rectagrid RS40 is used to create mezzanines, which optimises the use of previously dead space in a facility

mezzanines is to optimise the use of previously dead space in a facility. She said, “Constructing a mezzanine using floor grating offers optimum flexibility and is a more cost effective option than using a brick and mortar structure.

“However, it is essential that companies making use of floor grating for this application deal with a reputable supplier that is able to verify the structural integrity of the flooring product.”

Stringent quality control during the manufacturing process ensures that close tolerances are maintained, and that the round transversal bar fits tightly through the pierced bearer bar. van Rooyen explained, “This not only guarantees the superior structural integrity of the product, but also eliminates vulnerability to corrosion.”

To further ensure optimum reliability in corrosive environments, floor grating can be hot dip galvanised or manufactured in stainless steel or 3CR12.

Rectagrid RS40 floor grating is engineered to take specific loading, which ensures both the structural integrity of a mezzanine floor and the safety of people walking or working in those areas. A complete understanding of the load bearing capacity of floor grating is necessary to ensure that the correct floor grating is selected for a specific application.

van Rooyen noted, “The best way to ensure this is for customers to align themselves with a manufacturer that has designed and engineered the product to attain predetermined tolerances.”

Advertiser's Index

AEM Association of Equipment Manufacturers	29
Aksa Jenerator Sanayi AS	15
Ansaldo Energia S.p.A.	45
Associated Power Solutions FZC	39
ATC Tires Private Limited	31
Betonstar Makina Sanayi ve Ticaret A.S.	65
BOMAG GmbH.....	58
Caterpillar Inc. - Energy	9
Clarke Energy Ltd	51
COELMO S.p.A.....	35
Columbia Steel Casting Company Inc.....	73
Costex Tractor Parts (CTP)	46
Eko Hotel and Suites	75
Emirates	2
Emsa Enerji Pazarlama ve Dis Tic. Ltd. Sti.	43
Exhibition Management Services (EMS)	12
F G Wilson Engineering Ltd	13
Fronius International GmbH	37
Himoinsa, S.L.	Cover Wrap
IIR Exhibitions	66
Inmesol SL.....	53
JCB Power Products Ltd.....	41
Jessop & Associates (Pty) Ltd	25
John Deere Power Systems	11
Kirloskar Oil Engines Ltd.....	76
Linnhoff Technologies Pte Ltd.....	59
Linz Electric S.p.A.....	49
Liquid Telecommunications.....	26
Man Diesel & Turbo	19
Mantrac Egypt	57
Marini S.p.A. - Fayat Group	62
Marini-Ermont	63
Metalgalante S.p.A.	17
Pan Mixers South Africa (Pty) Limited	67
Panafrican Group	69
PR Middle East.....	21
Rollo Power Systems	38
SDMO Industries.....	33
Teksan Generator Electric Sanayi ve Ticaret AS.....	55
Volvo Construction Equipment AB	5
Volvo Penta, AB (VPEN)	7
Wilhelm Layher GmbH & Co. KG	61
Zest WEG Group Africa.....	71

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