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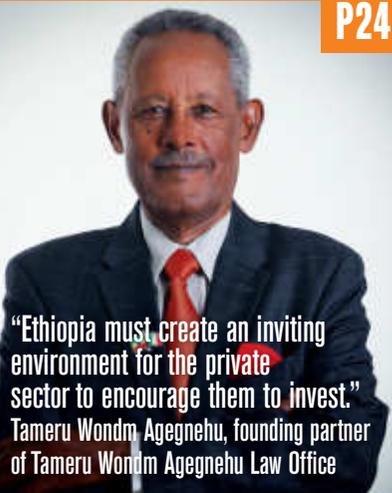
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"Ethiopia must create an inviting environment for the private sector to encourage them to invest."
Tameru Wondm Agegnehu, founding partner of Tameru Wondm Agegnehu Law Office





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Cover picture: Smart city concept

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Editor's Note

Welcome to our special genset buyers' guide issue where we put you in touch with the power companies that can make your business succeed on the continent, page 32. Alongside the guide, we have a report on backup power gensets and how there has been an uptick in business in the last year, despite the Covid pandemic, page 30.

Looking to the future, our cover story looks at how technology will drive the exciting development of smart cities, with Kenya and Egypt already ahead of the game. Egypt's New Administrative Capital is taking connectivity to new heights, with optical fibre connecting every building using FTTX technology, page 16.

Elsewhere in the issue, we tackle other power-related developments, such as the rising growth of renewables thanks to their reduced costs. Moin Siddiqi provides a succinct report from the International Energy Agency on renewables-based electricity generation in Africa now and until 2040, in comparison to the USA and Europe, page 27.

Finally, where would the foundations of Africa's roads be without the crusher machines available to help make the vital aggregates necessary? Check out the latest crushing and screening equipment on page 46.

Samantha Payne, Editor

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The growth of smart cities is rising in Africa. Orange Business Services has been commissioned by the Administrative Capital for Urban Development (ACUD) to build a data centre in Egypt's new city.



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A new Mali law has come in to reform its mining industry. Business law firm Bourgeois Itzkovitch provides *African Review* their verdict and the merits it brings to boost investor confidence.

AfDB signs 109 million euros agreement to transform rural sewage coverage

The African Development Bank Group (AfDB) has entered into financial agreements with the Egyptian government, worth 109 million euros, to undertake the Integrated Rural Sanitation in Upper Egypt-Luxor (IRSUE-Luxor) project, a rural sewage expansion that is set to increase coverage from 6% to 55% regionally.

The financing agreements consist of a 108 million euro loan from AfDB and a grant of one million euros from the Africa-wide Rural Water Supply and Sanitation Initiative (RWSSI), a programme hosted by the AfDB.

Around 22,000 households, representing 240,000 inhabitants, will benefit from the facilities installed as part of the IRSUE-Luxor project, increasing the region's sewage coverage almost tenfold by the time of its completion.

Malinne Blomberg, the bank's deputy director general for North Africa, said, "This intervention is not just about infrastructure development. An essential part of the project is supporting ongoing sector reforms."

IRSUE-Luxor will contribute to the National Rural Sanitation Program, an initiative kickstarted by the Ministry of Housing, Utilities and Urban Communities, which set a target of sanitation access from 34% to 60% by 2030.

Beyond its role in the National Rural Sanitation Program, the project will also complement the nationwide Haya Karima (decent life) initiative that targets rural communities throughout Egypt with essential infrastructure services, with an aim to improve their livelihoods and conditions in the long term.

Rania Al-Mashat, Minister of International Co-operation, who signed the agreements on behalf of the Egyptian government, explained, "Promoting efficient, equitable and sustainable economic development through integrated water resources management is a priority for the government of Egypt. The IRSUE-Luxor initiative unlocks the socio-economic development potential for inclusive and green growth."



Image Credit: Adobe Stock

Sewage coverage will be boosted from 6% to 55% regionally upon the project's completion.

SUEZ CANAL BANK OPT FOR TEMENOS DIGITAL PLATFORM

Egypt-based Suez Canal Bank is set to enhance its digital service, drive sustainable growth and nationwide financial inclusion with the Temenos Infinity digital platform.

Temenos Infinity provides an all-inclusive digital platform for online banking, covering the entire customer lifecycle from onboarding and account opening to digital servicing. The platform will allow the bank to bring customer services to market at a much faster rate than previously possible, accelerate the customer onboarding process and increase efficiency across the board. All of these achievements will help the software provider and Suez Canal Bank expand and drive growth in a nation where 40 million people still remain without a bank account.

In making more banking services and products more accessible and optimised for mobile devices, whilst leveraging technologies, such as AI for customer services, Suez Canal Bank hopes to accelerate the shift of in-branch customers from physical banking to digital channels. This will help the bank enlist customers from remote areas and deliver more value.

Hussein Refaie, chairman and managing director of Suez Canal Bank, explained, "We are delighted to partner with Temenos to take our digital banking to the next level. Temenos is the market-leader in digital banking technology and has a strong local presence and record of success with banks in Egypt and the MEA region.

"Enabling and building engagement with our customers via digital channels is a key growth driver that will help Suez Canal Bank to attract a new generation of customers. This is a priority to support our growth plans but also as a boost to financial inclusion in Egypt."

Arab Investment Bank, Egyptian National Post Organisation (ENPO) and Banque du Caire has adopted Temenos Infinity.

ISDB AND ICD SIGN THIQAH AGENCY AGREEMENT

The Islamic Development Bank (IsDB) and the Islamic Corporation for the Development of the Private Sector (ICD) have signed an agency agreement, taking full advantage of IsDB's group business forum, THIQAH. Signed by IsDB president, Dr Bandar Hajjar, and ICD CEO, Ayman Sejny, the agreement reflects THIQAH's mission to attract foreign direct investment in member countries including Libya, Sudan, Tunisia and Algeria, and share trade and insight across various forums. Sejny explained, "THIQAH organised and promoted more than 100 events last year. It will build on its experience to organise several forums this year as part of the agency agreement to support the IsDB's 'Restore Program' and Member Country Partnership Strategy 2.0. THIQAH formalises its cooperation in promoting and maximising cross-border investment and trade among member countries to be supported by IsDB Group's financial products and services."

BRIEFS



Image Credit: Adobe Stock

The bond offering will fund a number of national projects.

Congo launches bond offering

The Republic of Congo has completed the launch of its public bond offering. The initiative, EOCG 6.25% NET 2021-2026, aims to raise 100 billion CFA francs. The securities will be listed on the Central African Market Exchange (BVMAC). The offering period was open from 12-20 March. Monies raised will help to establish financial development and debt stabilisation for the country as well as fund important projects in infrastructure, energy and forestry.



Image Credit: ABB

ABB's initiative for Toshka's new agricultural area is targeted by 2024.

Egypt's resilient power supply

ABB has provided a number of key technical solutions to deliver power reliably and continuously to Toshka's new agricultural area. The initiative aims to reclaim an area of more than 2,200sq km of desert by 2024 in the South Valley of Toshka. It will boost agricultural production and create job opportunities through agricultural activity and associated urban activities. The development will also establish new and integrate existing communities in parallel to the Nile Valley.

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AfDB purchases temporary bridges to replace infrastructure destroyed in cyclones

The African Development Bank (AfDB) has finalised the purchase of 26 modular steel bridges to replace infrastructure that was destroyed in weather disasters in Mozambique. The modular bridges are due to be installed in the coming months after the appointment of local contractors. The goal is to restore transport connections to the isolated regions of Manica, Sofala, Nampula and Cabo Delgado. An estimated 500,000 people are expected to benefit.

With a service lifespan of up to 100 years, the bridges will provide a temporary solution in areas that are vulnerable to extreme weather while the government invests in climate-smart permanent bridges.

“We are delighted to be able to deliver this important contribution to Mozambique and respond to the recent climate disasters while investing to building back better,” said Pietro Toigo, the African Development Bank’s country manager for Mozambique. “The bank will remain at the forefront of the fight to mobilise climate finance for adaptation and contribute to climate justice for the African continent.”

The bridges are funded under the Post Cyclone Idai and Kenneth Emergency Recovery and Resilience Programme, which was approved in the wake of these two cyclones that struck Mozambique, Zimbabwe and Malawi in 2019 and affected around three million people in the three countries.

João Osvaldo Machatine, Minister of Public Works, Housing and Water Resources, said, “The government of Mozambique is delighted to be working with the African Development Bank to help build resilience to climate and disaster risk management in the country.”

Central Mozambique has been hit by extreme climate events in recent years. Cyclones Idai and Kenneth passed through the same region of the country in March and April 2019, also affecting neighbouring countries. Disaster struck again with Tropical Storm Chalande in December 2020 and Cyclone Eloise in January 2021. Mozambique is regarded as one of the world’s most climate-stressed countries. In its 2018-2022 Country Strategy Paper for Mozambique, AfDB identifies climate change as a major development challenge and has directed roughly US\$120mn to strengthen the country’s climate resilience.



Image Credit: Adobe Stock

The bridges will provide a temporary solution in areas that are vulnerable to extreme weather.

ACCELERATING DIGITAL LITERACY IN MADAGASCAR

ACELERON, the UK developer of circular economy lithium-ion batteries, and Jirogasy, the Malagasy solar start-up, have partnered to deliver solar-powered computers to 10,000 children a year across schools in Madagascar and East Africa.

The computers will go to schools that do not have access to reliable power, helping to reduce the gulf in digital literacy that lack of energy access is creating.

The Jirodesk 2, designed and produced in Madagascar, will support and enrich learning, as well as equip younger generations with the vital digital skills to build the continent’s digital economic future.

Yann Kasay, CEO of Jirogasy and the French Africa Foundation’s Young Leader of the Year 2019, said, “Every part of this project is championing economic growth in East Africa. The computers are built here in Madagascar, supporting the development of local digital and engineering jobs. The batteries are enabling the growth of a skilled green jobs economy in Kenya. Together, they are delivering key educational resources to Malagasy schoolchildren, boosting digital literacy and offering a route for largely non-electrified communities to connect to new economic opportunities.”

The batteries that power the Jirodesk 2 are built in Kenya from repurposed waste solar lanterns and lithium-ion battery cells. UK-based Aceleron works with local technicians in Nairobi to develop and build high quality, second-life batteries, creating a local workforce of battery manufacturers and engineers, and empowering people with skilled jobs.

Jirogasy has selected Aceleron as its delivery partner because of the African-built credentials of its batteries, and the shared mission to advance green economic growth in East Africa.

OSINO RESOURCES DRILLS TWO NEW HIGH-GRADE SHOOT AT TWIN HILLS GOLD PROJECT, NAMIBIA

Osino Resources Corp has provided an update on the resource and exploration drilling at Osino’s Twin Hills gold project including shallow high-grade intercepts at clouds and further shallow, wide and consistently mineralised intercepts over 1 g/t from infill drilling at Twin Hills Central (THC). The eastern portion of the clouds mineralisation will be brought into the Twin Hills resource estimate planned for completion by the end of Q1 2021.

Dave Underwood, Osino’s vice-president exploration, commented, “The discovery of two high-grade shoots at clouds is an exciting development at the Twin Hills project and is the first indication of the potential for really high-grade zones. The intercepts of 8m at 12.70g/t, 4m at 13.71g/t, 12m at 5.24g/t etc. are the highest-grade intervals drilled at the Twin Hills Project to date.”

► BRIEFS

Hitachi Construction Machinery Zambia selects DSI’s ScanWorkX for scanning abilities



Image Credit: Adobe Stock

Hitachi Construction Machinery is currently on a digital transformation journey to optimise its global supply chain.

Hitachi Construction Machinery Zambia has selected DSI’s ScanWorkX solution to provide scanning capabilities while future-proofing their migration path from Microsoft AX to Dynamics 365. Hitachi Construction Machinery is on a digital transformation journey to optimise its global supply chain, focusing on innovation and customer satisfaction. They needed a solution to track inventory while adhering to regulatory compliance.

Mozambique’s economy set to rebound by 2022



Image Credit: Adobe Stock

The country’s real GDP is estimated to have declined by 1.3% in 2020.

Mozambique’s economy is expected to gradually recover from 2021 but substantial downside risks remain due to uncertainty surrounding the path of the pandemic. While the economy registered its first contraction in 2020 in nearly three decades, growth is expected to rebound over the medium-term, reaching about 4% by 2022. A report by the World Bank noted that the pandemic has hit the country’s economy as it was recovering from the debt crisis and the tropical cyclones of 2019.



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Solar powered batteries to be recycled at Hinckley's facility in Nigeria

Dutch-based firm Lumos, a market leader in home solar systems in Nigeria, has announced a new partnership with Hinckley Recycling to recycle Lumos batteries.

Current battery end-of-life management across Africa is not environmentally sustainable, with limited lithium-ion recycling or repurposing. Hinckley's Nigerian facility is one of just two examples, across the entire continent, of local re-purposing.

The partnership will initially see Lumos' waste batteries recycled at Hinckley's facility in Ojota. Hinckley works with international blue-chip companies, such as HP, ExxonMobil, KPMG and Nestle, and its Ojota facility has an annual capacity for 20,000 tonnes of e-waste.

Alistair Gordon, Lumos Group CEO, said, "Energy is a core pillar of economic growth and will be a strong catalyst to sustainable economic recovery, post-Covid-19. Africa's battery demand is growing hugely, as they are vital for the continent to achieve clean, reliable energy access. This requires a sustainable battery supply chain. It is extremely important, and we are proud to be the first company in our sector to take this major sustainability step."

"We have been an enthusiastic supporter of Hinckley's development, culminating in today's partnership. We hope it encourages the adoption of similar sustainable practices across Africa."

Batteries are vital for delivering clean, reliable energy access. They enable off-grid users to optimise consumption of solar/wind energy; and increase reliability of power for users of weak grids.

Lumos was the first major company to introduce lithium-ion batteries as a standard in its solar home systems, providing users with a better energy storage solution. Today, Africa's battery demand is forecast to increase sevenfold, from 2GW in 2015 to 15GW by 2030. Full energy access would require double the 2030 figure.

Adrian Clews, managing director, of Hinckley Recycling, said, "We are delighted by Lumos' sector-leading commitment to sustainability, and we are honoured to partner with them. Lumos has been incredibly supportive of Hinckley, and this partnership cements the relationship even further."



Solar batteries increase power access in remote areas without the grid.

VISTA BANK GUINEA GRANTED LINE OF CREDIT

Vista Bank Guinea has been granted a US\$11.9mn line of credit by the ECOWAS Bank for Investment and Development (EBID) to increase its capacity, support and medium-term funding for small and medium-sized enterprises (SMEs) and small and medium-sized industries (SMIs) in Guinea.

"Vista is determined to be a force for good in driving Guinea's economic development and prosperity, and our growth plans are geared towards this objective. The credit facility from EBID will enable us to increase our provision of finance to Guinean SMEs and SMIs, which will strengthen their capacity, increase their participation in value chains, and promote Guinea's industrialisation," commented Yassin Bayo, managing director of Vista Bank Guinea.

The line of credit is part of EBID's commitment to support the government of Guinea's implementation of its 2020-2025 Development Plan to develop the private sector and transform the economy.

The agreement for the line of credit facility was signed by Dr George Agyekum Donkor, president and chairman of the board of directors of EBID and Yassin Bayo.

Vista Bank Guinea, part of the Vista Group, is supporting customers' financial recovery from the Covid-19 pandemic and providing a full range of accessible banking facilities to everyone, especially women and SMEs who have long been impeded by a lack of access to finance. It intends to be the premier source of mesofinance, trade and supply chain finance for SMEs, and is driving financial inclusion, economic growth and national prosperity, in its mission to become the bank of choice. The group operates in Sierra Leone and The Gambia. The bank grants loans for the development of the Guinean private sector, offering financial advisory services, finances expansion, diversification and rehabilitation projects.

KWIK DELIVERY LAUNCHES SERVICE IN ABUJA

Kwik Delivery has officially made available a just-in time delivery service to businesses, government agencies and merchants in Abuja. The on-demand delivery platform offers one-hour delivery through its fleet of bike delivery partners, providing access to a host of reliable four-wheel vehicles.

"As the political centre of Nigeria, Abuja is in strong demand for speedy, efficient delivery of goods and services," explained Yinka Olayanju, co-founder and chief operating officer of Kwik Delivery.

Kwik's breakthrough delivery platform will enable businesses and government agencies to gain productivity and to optimise logistical expenses in Abuja. Using the Kwik Delivery app, customers can request a delivery vehicle and track their shipment in real-time. "Kwik's breakthrough delivery platform will enable businesses and government agencies to gain productivity and to optimise logistical expenses in the nation's capital," explained Romain Poirot-Lellig, founder and CEO of Kwik Delivery.

BRIEFS



A jetty has been built in Lekki by Dangote Petroleum Refinery and Petrochemicals.

Dangote builds jetty in Lekki

Dangote Petroleum Refinery and Petrochemicals have constructed a jetty in Lekki using Sandbar breakwater technology to reduce coastal erosion and protect the shorelines, according to reports. Rajnish Kumar Gupta, general manager (Survey), Dangote Oil Refining Company, explained that the Sandbar breakwaters will not disrupt wildlife habitats and the facility can handle large vessels of up to 16,000 mt. The road will provide a route for personnel and equipment to the refinery site.

Katsina Project in Nigeria set for commissioning



Katsina Wind Farm Project is set for commissioning by the end of March 2021.

Nigeria's Katsina Wind Farm Project was due for commissioning by the end of March 2021, as announced by Eng Sale Mamman, the Minister of Power in Nigeria. The implementation of the project was started in 2005. He noted that the components of the project would include engineering, procurement, construction (EPC), and installation of 37 units of GEV MP, with 275kW power capacity of wind turbine generators. It includes step-up transformers for each turbine.



Sudan

Sudan is located in East Central Africa. It is bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, South Sudan to the south, the Central African Republic to the southwest, Chad to the west, and Libya to the northeast. Sudan is the third largest country in Africa, after Algeria and DR Congo. Sudan's total land area amounts to some 1,886,068km², with 18,630km² of irrigated land.

After agriculture, oil is Sudan's major natural resource. The country also has significant deposits of chromium ore, copper, iron ore, mica, silver, gold, tungsten, and zinc.



Mining Operations in Sudan

Operating and running a mining site with high efficiency is a very challenging job, especially in a country as vast as Sudan. Operators face many obstacles and difficulties, which may well hamper or even totally eliminate your efficacy and effectiveness.

Poor infrastructure is one of the key challenges facing the mining industry in Sudan. The state of the country's transport infrastructure creates an impediment which contributes to inefficient logistical operations by raising cost and creating delays. There are many other factors which also play a role in creating challenges in running an efficient mining site; such as ensuring uptime, providing spare parts for machines, providing fuel for your fleet, providing skilled operators, and managing these cost effectively.

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Hani Girgis

Sales & Business
Development Manager
DAL Mining



Making commercial vehicles affordable for customers in Kenya

NCBA Bank Kenya PLC has signed a partnership deal with Tata Africa Holdings (K) Ltd to finance Tata vehicles throughout Kenya.

Under the deal, customers will be able to acquire a range of commercial vehicles offered by Tata, with up to 95% financing from NCBA Bank for up to 60 months. In addition, buyers will also enjoy low deposits, low monthly installments plus competitive insurance rates when purchasing vehicles from Tata Africa and its authorised dealer network across the country.

Lennox Mugambi, Ag. group director of asset finance and business solutions at NCBA Bank, commented, “Businesses in Kenya have been severely impacted by the Covid-19 outbreak and so this partnership comes at an opportune time and will go a long way in supporting businesses in the construction and distribution sector. We are encouraging businesses to take advantage of this partnership to bolster their economic livelihoods.”

According to the 2020 Economic Survey by the Kenya National Bureau of Statistics, the construction sector expanded by 6.4% in 2019, with an upward growth trajectory projected in the following year, Covid-19 pandemic effects notwithstanding.

For his part, Kamal Rohira, auto business head at Tata Africa Holdings, added, “The partnership targets individuals, small-to-medium sized companies and large commercial businesses that have been hugely impacted by the Covid-19 pandemic. Currently, Tata has an active population of around 15,000 commercial vehicles in the country, which is served by 11 service stations and 23 part retailers. In this partnership, we go hand in hand with customers in making Tata commercial vehicles very affordable.”

Tata Kenya has recently opened Tata Authorised Service Stations (TASS) in Eldoret & Kisumu, a move aimed at ensuring customers can get access to a specialised service post-purchase, given the rising demand for vehicles used in construction across the country.

The pact between NCBA Bank and Tata Africa Holdings comes into effect immediately and will last until 3 September, 2021.



Lennox Mugambi and Kamal Rohira at the press launch held at Tata motors headquarters.

Image Credit: NCBA Bank

RAXIO BEGINS CONSTRUCTION ON FIRST EVER DATA CENTRE IN ETHIOPIA

The Raxio Group (Raxio), a pan-African data centre developer and operator, has held a ceremony to formally kick-off the construction of the country's first private Tier III carrier neutral colocation data centre at the ICT Park in Addis Ababa.

Once commissioned, the data centre is expected to offer its customers an optimised environment for their IT equipment in a state-of-the-art, modular facility, fully equipped with industry best in technology, security, AC/DC power compatibility and redundancy, making Raxio Ethiopia an integral backbone to the country's digital economy.

Robert Mullins, president of Raxio, gave his vision of the facility as a cornerstone to Ethiopia's digital economy by providing a critical and missing part of digital infrastructure in the country. “After extensive design development, we are excited to put a spade in the ground and begin construction of what we expect to be our first of several facilities in Ethiopia. We have kept our customers, both inside and outside Ethiopia, at the heart of our design process and are building a facility to accommodate the expected demand surge over the coming years for truly world-class digital infrastructure in the country. This also marks a big milestone for the industry: Raxio's data centre will support the growth of the IT sector and will be a catalyst for highly skilled job creation in Ethiopia,” Mullins added.

To complement its internal team, Raxio has appointed experienced technical partners to construct the centre, such as Future-tech, as the lead consultant, and Yema Architecture, appointed as the local architect to manage design localisation, permitting, and construction supervision.

Development of the facility is underway and commissioning is due by the end of 2021.

CHANGE OF MANAGEMENT AT BUCKREEF GOLD

Tanzanian Gold Corporation operating through its wholly owned subsidiary Tanzania (Tanzam2000), and its joint venture partner, the State Mining Company (STAMICO) have appointed Isaac Bisansaba and Gaston Mujwahuzi as co-acting general managers at Buckreef Gold Company (Buckreef).

Collectively, Bisansaba and Mujwahuzi have more than 35 years of experience in the gold mining industry, with former roles at AngloGold Ashanti, Barrick Gold, Teranga Gold, PanAust and various consulting firms. Together, they will be directly responsible for monitoring and improving the mining and processing operations at Buckreef.

Tanzania Gold Corporation is in the process of updating all levels of administration and operations for Buckreef, and will shortly begin the process of identifying an experienced and suitable candidate for the position of general manager.



Image Credit: Adobe Stock

The new facilities will complement other projects already completed or underway.

The French Development Agency (AFD) has pledged US\$12mn to extend the collective sewerage network of Djibouti's capital city. According to AFD, this grant is the second tranche of initial financing agreed in 2019 in partnership with the EU. The new facilities will enable wastewater to be transferred to the Douda wastewater treatment plant, avoiding the discharge of effluent into the Douda River.

UNEP launches electric bike pilot in Kenya



Image Credit: UN Environment Programme

The pilot was launched in the presence of Kenyan government officials and business leaders.

The UN Environment Programme's (UNEP) pilot programme will first initially launch in four locations across Kenya in an effort to improve national energy security, create green jobs and expand the effort to reduce air pollution. The pilot includes a host of local partners and national and sub-national authorities, and uses bikes donated by Shenzhen Shenling Car Company. It will last 6-12 months and is replicated in Uganda and Ethiopia.

Invest Africa webinar debates future of East Africa

At the Invest Africa webinar entitled, 'East Africa Outlook 2021' panellists discussed the region's experience over the last year and its future prospects. The participants outlined that when Covid-19 struck in March last year demand across all sectors initially declined, but this was sharply followed by demand expansion in the second and third quarter.



The panellists shared their insights on the current and future state of the East African economy.

By the final quarter, in some sectors, revenues were actually higher than the same quarter in 2019, suggesting the disruption was caused by restrictions on movement rather than permanent behaviour.

With the virus in decline, foreign tourism, travel, education and technology have all started to pick back up and this is indicative that the pandemic has caused a short-term, rather than long-term, disturbance.

The panellists also touched on the importance of limiting political disruption to business) and the impact of AfCFTA which is expected to allow the free movement of people, link markets together and encourage trade across the region.

DANAKALI IDENTIFIES RENEWABLE ENERGY FOR INCORPORATION INTO SOP PROJECT IN ERITREA

Danakali has completed an early assessment on the energy potential of solar and wind for its Colluli Sulphate of Potash (SOP) project in the Danakil Depression region of Eritrea. The company has confirmed that both of these renewable sources of energy can be incorporated into the future generation of power for the project.

Danakali will now, with its preferred power provider Aggreko, work on further developing these renewable solutions, a decision which is in line with Aggreko's ambition to be carbon net zero in alignment with the Paris Climate Agreement.

Seamus Cornelius, executive chairman of Danakali, said, "We are determined to embrace renewable energy and run our business in a way that delivers positive environmental impacts for Eritrea and the world. Our initial goal is to create a responsible, environmentally friendly, zero-carbon, premium fertiliser business that clearly links Colluli SOP with the production of nutritious crops, bolsters global food and nutrition security, and improves millions of lives. We know very well that with an asset like Colluli, the extensive studies we have done to date provide us with a useful baseline and the ceiling won't even be glimpsed until after many decades of growth."

The project is owned by the Colluli Mining Share Company, a joint venture between Danakali and the Eritrean National Mining Corporation.

Image Credit: Invest Africa



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MAY

20-22

POWER & ENERGY RWANDA 2021

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https://expogr.com/rwanda/powerenergy/aboutus.php

25-26

BOTSWANA MINING AND ENERGY 2021

Gaborone, Botswana
www.bwminingandenergy.com

JUNE

8-10

ENLIT AFRICA

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www.enlit-africa.com

14-16

MIDDLE EAST ENERGY

Dubai
www.middleeast-energy.com

24-26

7TH LIGHTEXPO AFRICA 2021

Nairobi, Kenya
www.expogr.com/lightexpo

JULY

1-3

THE 7TH SOLAR AFRICA 2021

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24-25

POWER & ELECTRICITY WORLD AFRICA

Johannesburg, South Africa
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POWERAFRICA 2021

Virtual
https://ieeee-powerafrica.org/

SEPTEMBER

7-8

ANNUAL AFRICA SOLAR ENERGY FORUM

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https://leadventgrp.com/events/2nd-annual-africa-solar-energy-forum/details

Middle East Energy 2021: A hybrid event to power the global energy industry

The 46th edition of Middle East Energy (formerly Middle East Electricity) has evolved into an exciting hybrid format for 2021, providing an interactive digital and live platform for professionals to engage with industry leaders and ensure business continuity during an era of unprecedented transformation for the energy sector.

In the run up to the in-person MEE exhibition, which will be held along with Global Energy & Utilities Forum (GEUF) on 14-16 June at Dubai World Trade Centre, will be a series of virtual conferences, from 17 May to 7 June.

The region's leading event for the power industry – organised by Informa Markets – saw US\$5bn worth of deals signed at the 2020 show. The evolution of MEE into a hybrid event for 2021 provides a unique opportunity for energy professionals to develop and secure new business through virtual and in-person networking while learning about new opportunities.

Middle East Energy online conference series

Each themed week of the virtual conference series will offer an array of opportunities for business development, connecting attendees with government authorities, utility companies and key stakeholders through unique artificial intelligence (AI) networking tools.

Digital events will include tech talks, interactive roundtables, panel

discussions, thought leadership sessions and remote interviews. Networking opportunities will include hosted buyer meetings as well as fireside chats, breakout sessions, personalised meetings and speed networking sessions. The sector themed weeks will include **renewable energy**: week commencing 17 May, **transmission and distribution**: week commencing 24 May, **critical and backup power (power generation)**: week commencing 31 May, and **energy consumption & management**: week commencing 7 June.

Middle East Energy Live at Dubai World Trade Centre

Taking place between 14-16 June at Dubai World Trade Centre, UAE, the live and in-person Middle East Energy exhibition and Global Energy & Utilities Forum will provide an opportunity to network and exhibit within the traditional framework of MEE, with rigorous health and safety protocols and measures in place. The exhibition offers the chance for public and private sector entities to showcase products, innovative technologies that are driving forward the energy transition and solutions to meet ambitious clean energy and net-zero targets.

"We're excited to bring you the expanded MEE Live & Online," said Gareth Rapley, group director of Energy & Utilities, Informa Markets. "Digital consumption is increasing in our business and personal lives – this was more evident in 2020 than ever before. As remote working enters the mainstream and traditional work practices become more fragmented, we are looking to offer a more robust suite of digital solutions to complement our in-person events. This new online version will overcome geographical obstacles, enabling Middle East Energy to reach a much broader customer base. We believe that combining the best of face-to-face and digital interactions will provide a platform for the global energy community to network, learn through content and find solutions to help meet the world's increasing demand for clean, affordable and reliable energy."



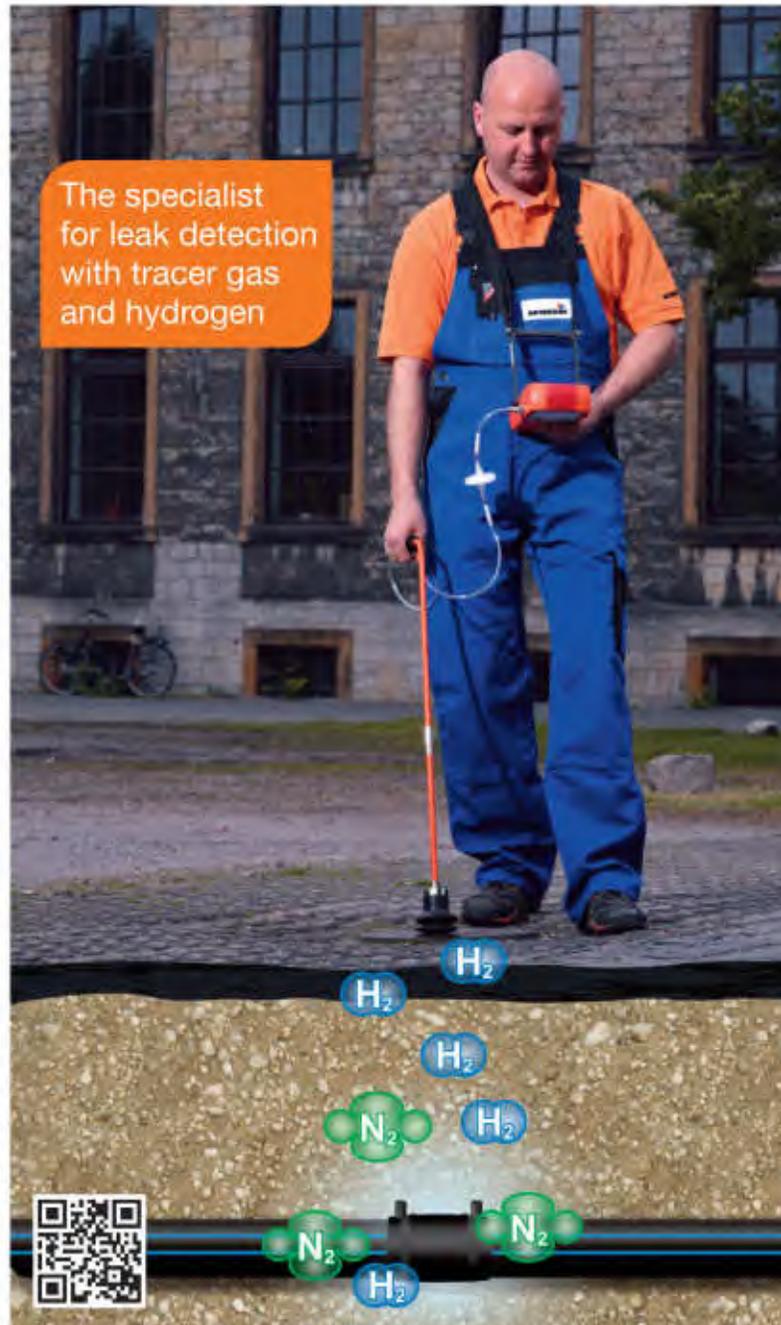
Online: 17 May-7 June
Live: 14-16 June 2021

MEE will take place as a hybrid event this year, providing an interactive digital and live platform.

For more information visit www.middleeast-energy.com

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“ Ethiopia has a young, dynamic and trainable workforce, as well as supportive policies to enable the launch of a project such as the Orange Digital Center. We therefore welcomed this initiative with great enthusiasm and have been supporting it since day one. Young Ethiopians will have the opportunity to develop world-class technological skills here. Young people, innovation and technology are key to shaping the future of Ethiopia.”



Image Credit: Ethiopian Investment Commission

H.E. LELISE NEME
Commissioner of the Ethiopian Investment Commission

“ AI growth can help in creating additional high value and decent jobs, diminish poverty, increase the productivity of firms, preserve the environment and foster better living conditions. Research has shown that AI has the potential to solve some of the most pressing challenges facing Africa and drive sustainable development in agriculture, health, infrastructure, financial and public services and climate change.”

VERA SONGWE
UN under-secretary-general and executive secretary of the Economic Commission for Africa (ECA)

“ To begin with, we need to be able to articulate clearly what the need is for energy across the diverse African countries and what the different opportunities are. Where possible and appropriate, we must tap into local sources of funding as well as other largely unexplored sources of funding, such as pension funds. There is appetite for African infrastructure projects, but we must think of encouraging innovation to meet multiple objectives; developing infrastructure and traditional energy sources, while also furthering the transition to renewable energy. The chamber, its partners, members and wider network must connect opportunities to funding opportunities.”

ROLAKE AKINKUGBE-FILANI
Chief commercial officer at Mixta Africa on the AEC Investment Committee's commitment to facilitate funding for African energy projects

“ The EU is working to revamp our cooperation with our African partners to tackle the common challenges that affect people's lives, in particular the youth. We want to build back better together from the Covid-19 pandemic to guarantee a sustainable, green and just recovery. The SME sector is a lifeline for employment, including for the most vulnerable populations and in particular, in critical sectors, such as agriculture.”

JUTTA URPIAINEN
EU commissioner for international partnerships

“ Another big plus of the AfCFTA agreement is that fellow Africans will see an African-owned company like us that is well-organised and accomplished and our success will rub off on them. Overall, the trade agreement provides a platform where trailblazing African companies can set the marker for the rest to emulate.”

MONGEZI MNYANI
Chief executive officer of Khato Civils

“ While we see immediate improvements in skills and innovation through these programmes, the real win is establishing a framework for lasting change. This will equip communities in Africa to anticipate and plan for the challenges posed by climate change, urbanisation and economic development. The continent is transforming rapidly, and those engineering its future need the skills to think on their feet.”



Image Credit: Royal Academy of Engineering

YEWANDE AKINOLA
Steering committee member of GCRF Africa Catalyst Programme, Royal Academy of Engineering, on the initiative's progress

Power struggles: Data centre growth and the need for reliable power

A new report from the African Data Centre Association has highlighted the need for significant investment in data centres in the region. With data centres dependent on



Image Credit: Crestchic Loadbanks

With power business-critical, most data centre operators will have robust strategies in place to deal with blackouts.

access to reliable power, Paul Brickman from Crestchic Loadbanks explores the role of load testing to ensure continuity of service.

Embracing the data centre opportunity

More than two-thirds of the continent's data centre capacity is located in South Africa. To operate at a comparable level, the rest of the continent would need the equivalent of 3.5 million square metres across 700 facilities. This huge opportunity is being driven by demand for connectivity, with broadband connections and digital adoption becoming more prevalent in African markets – and the pandemic serving to accelerate growth in a relatively short period of time.

Intrinsic to the success of data centres everywhere is uninterrupted access both to mains power and backup power supplies. With a promise of high uptime and availability – as well as a need to keep IT equipment at a constant operating temperature – interruptions in power supply have the potential to cause operational chaos.

The critical role of backup power

With power business-critical, most data centre operators will have robust strategies in place to deal with blackouts – particularly in regions where power supplies can be intermittent. Generators are universally accepted as critical business infrastructure, providing robust and reliable access to emergency back-up power when blackouts occur.

Wherever a generator is installed, there is also a need for a load bank – to test, support, or protect a critical backup power source and ensure that it is working optimally should an outage occur. In carrying out regular testing and maintenance, system issues can be uncovered in a safe, controlled manner without the cost of major failure or unplanned downtime.

The role of load banks in data centre continuity

In Africa, where electricity supplies can fluctuate, load shedding means that backup power systems are run at full power on a regular basis. In this situation, testing can provide full diagnostics of the performance of the generator and its component parts, with the resulting data providing insights that are crucial to ensuring that generators operate effectively when required.

Load banks can also be used to heat load test air conditioning systems to ensure they can cope with the heat output of the servers and keep server halls at stable temperatures and humidity levels. The distributed heat can then be measured, to ensure that airflow is evenly distributed and that there are no “hot-spots” around vital equipment enclosures.

While backup generators and UPS systems are tested at the point of manufacture, climatic conditions and transportation can affect operation once in situ. Testing backup power systems in actual site conditions is, at the very minimum, an important part of the commissioning and installation phase.

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The future of African smart cities

Africa is keeping pace with the global enthusiasm towards developing smart cities with Egypt's New Administrative Capital – the continent's crowning jewel. Robert Daniels reports.



Image Credit: Adobe Stock

Smart cities offer a number of advantages to improve the quality of life for residents.

As the capacity to produce, store and interpret data has increased with the unwavering advance of technology, the benefits of digitalisation have become more appreciated and, across most industries, companies have turned to embrace this. The phenomenon incorporates smart cities, where urbanisation challenges are met through the latest information and communication technologies (ICT) and intelligent networks of connected bodies capable of transmitting data to be analysed and managed in real time through cloud-based IoT applications.

The advantages of this are seemingly endless and can improve the quality of life for residents through predictive policing and controlling traffic for faster response times for emergency services; more efficient management of transportation services to reduce commute times; identifying health

risks more quickly; reducing emissions through systems such as building automation, electric pricing, mobility applications; reducing water consumption through digital feedback; enhancing community communication and the ability to correspond more easily with local officials.

It is no surprise, therefore, that a number of cities across the world, have already embarked upon their smart city journey, and this number is rapidly growing. According to a report from Research and Markets,

the global smart cities market size is estimated to grow from US\$410.8bn at a CAGR of 14.8% to reach US\$820.7bn by 2025. This trend is typified by the exponential increase in traffic for companies promoting wireless connection and smart cities. Wi-SUN Alliance, for example, a global exosystem of member companies driving the proliferation of interoperable wireless solutions for use in smart cities and other IoT applications, have announced that in the last twelve months alone it has seen a 20% rise in membership,

now accommodating 300 members in 46 countries across the globe. The conglomerate has noted a growing interest from organisations in Africa as well.

Smart cities on the rise in Africa

In a report entitled: 'Deriving value for safe, smart cities', Leona Mentz, regional operations manager of Asia, Middle East and Africa at BT, stated, "Digital disruption is already having an effect across Africa, and it will play one of the most significant roles in shaping connected cities for the future."

Continuing the report, Mentz explained how cloud computing, social media and machine-to-machine computing is opening up new digital possibilities for smart cities and governing bodies on the continent, driven by the desire to enhance services, implement social change for the betterment of society and increase sustainability.

“ Digital disruption is already having an effect across Africa, and it will play one of the most significant roles in shaping connected cities for the future.”

LEONA MENTZ, REGIONAL OPERATIONS OF ASIA, MIDDLE EAST AND AFRICA AT BT

According to Deloitte, in many ways the continent is actually at an advantage when it comes to moving along the path to smart cities due to rapid urbanisation, a growing middle class, a prevailing entrepreneurial mindset and the ability to leapfrog older technologies to implement the new.

Some cities, such as Nairobi, Kigali, and Cape Town touted as some of the most advanced cities on the continent currently, are beginning to connect to IoT and make progress towards becoming truly smart cities. In a recent state of the nation address the South African President Cyril Ramaphosa spoke of his government's intentions to build new cities that will enable them to break with apartheid's spatial development, and pointed to projects such as the Lanseria Smart City. The draft masterplan for this smart city was completed in November 2020 and aims to become home to between 350,000 and 500,000 residents, who will be able to enjoy benefits such as all-inclusive 5G connectivity and a mobile application to find the nearest ATMs, pay fines and track parcels, etc.

Additionally, the Lagos State Government is moving ahead with its smart city initiative which seeks to connect human and social capital, increase the quality of life

for citizens and achieve more sustainable development through the implementation of ICT infrastructure.

The New Administrative Capital

While new plans are emerging for smart cities across Africa, perhaps none are as ambitious as the New Administrative Capital in Egypt, which is expected to house more than 6.5 million residents, covering 700sq km with features, such as a new parliament building and presidential palace, an airport, the tallest tower in Africa, and a giant urban park. At the heart of this new complex is the integration of smart infrastructure, featuring monitored traffic and utilities, CCTV, control sensors and smart buildings to identify ways to save resources and provide a healthy environment, IoT usage to save power consumption across the city, and optical fibre connecting every building using FTTX technology. The government has also announced its intentions to make this the first completely cashless city in the country.

As progress on the city continues to steadily advance (despite delays caused by the Covid-19 pandemic), the government has begun the process of awarding contracts to support the digital infrastructure. Orange Business Services has been commissioned by

“It is expected to be one of the largest centres in the Arab world and Africa, and aims to host all smart cities platforms of the New Administrative Capital.”

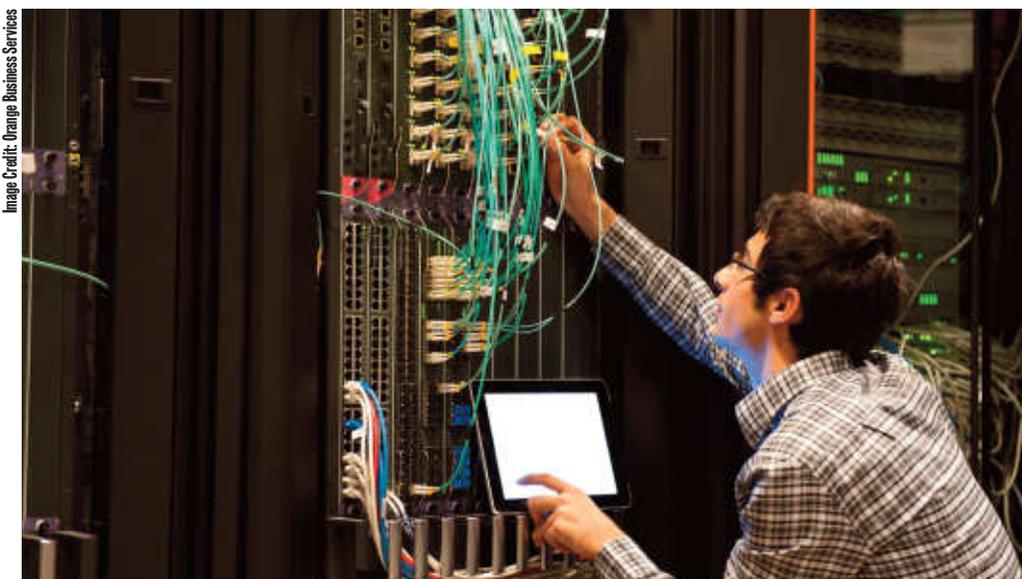
HISHAM MARHAN, ORANGE EGYPT CHIEF ENTERPRISE LINE OF BUSINESS OFFICER

the Administrative Capital for Urban Development (ACUD) to design and build a data centre to provide cloud services for the city. Construction is planned to begin in the first half of 2021 and, once completed, Orange Egypt will then manage and operate the new data centre to host and run smart services for the private sector, as well as citizens, for five years. Aside from services such as traffic management, this contract will also include innovative solutions such as cloud-on-demand for companies and triple-play services for residents. Commenting on the centre, Hisham Marhan, Orange Egypt chief enterprise line of business officer, said, “It is expected to be one of the largest centres in the Arab world and Africa, with investments of more than US\$135mn, and aims to enhance data and host all smart city platforms of the New Administrative Capital in a secure and integrated way.”

Another big IT player, Microsoft, has also been roped in with the Egyptian Cabinet, approving a contract between the Ministry of Communications and Information Technology and the company to provide licences and services needed to operate the unified data centre. The contract will also include cloud computing services, accompanied by the transfer of ministries and government agencies to the new government district.

The Ministry of Communications and Information have also considered adding Vodafone to the mix, after speaking with the CEO of Vodafone Group, Nick Read, on the potential to utilise its 5G technology to launch a network across the New Administrative Capital. President Abdel Fattah al-Sisi is reportedly considering working with Vodafone after being presented with their successful experience providing 5G services in South Africa.

While these projects are in development, the first steps on the journey to become a smart city have already been taken by a, perhaps unlikely, source: Bee'ah, responsible for waste management and city cleaning operations. After recently commencing operations, Bee'ah is introducing advanced waste and recycling systems with more than 30,000 waste collection points in an effort to achieve an 80% waste diversion rate target. While it may only be a tentative dip into the world of smart cities, it marks the beginning of a project lining up to be one of the biggest and most advanced smart city on the African continent and, indeed, the world. ■



Orange Egypt will manage and operate the new data centre in the New Administrative Capital.

Delivering the data

Investment in new data centre capacity is increasingly rising as Africa plays catch up with the rest of the world. Martin Clark reports.



Image Credit: Adobe Stock

The opening of data centres is attracting investment.

Investment in new data centre capacity across Africa is expected to rise sharply in the coming years. These facilities can help companies, utilities and governments to process, use and manage vast amounts of data from increasingly sophisticated industries, from energy to finance.

It follows the opening of new facilities in recent years which has brought with it inward investment from some of the corporate world's largest names – the likes of Microsoft, Huawei and Amazon Web Services.

These cloud-based data centres, predominantly concentrated in

South Africa, are able to accommodate increasing volumes of digital data and solve traditional data centre shortages.

One of the primary drivers is simply Africa's demographic explosion, according to the African Data Centres Association. According to UN estimates, Africa has the fastest-growing population in the world. On current pace, nearly a fifth of all humans will be living in the African continent by 2030; the region's population is projected to double by 2050. This has brought with it a surge in internet use and data output.

"African broadband is booming; the number of connections has passed the 200 million mark and should grow by an average of nearly 20% over the next five years," notes Xalam Analytics in an industry report (*African Data Centre Rises – How the Race to the Cloud is Transforming African Colocation Markets*). It highlights other key potential markets outside of South Africa, including Kenya, Nigeria, Morocco and Tunisia.

Teraco is another company that is active in the burgeoning South African market, with ambitious plans for the future. It is currently

rolling out a huge new facility in Ekurhuleni, east of Johannesburg, that will be the largest single-site data centre in Africa when it opens in Q1 2022.

In Ghana, African Infrastructure Investment Managers (AIIM), one of Africa's largest infrastructure-focused private equity fund managers, is extending its presence in the emerging data centre market there.

Together with the management team of the new Onix Data Centres Limited (Onix DC) platform, AIIM has acquired a majority stake in Ngoya Etix DC (Ghana) Ltd, a carrier-neutral data centre with a current capacity

of 170 racks (expandable to 680 racks). Located in the Greater Accra region, the facility – to be renamed Onix Accra 1 – is the only Tier IV data centre in the country. It is expected to be the nation’s largest operational data centre once fully ramped up, providing physical space, power, cooling, connectivity and security to customers.

Ed Stumpf, AIIM’s investment director, said data centres underpin and enable the digital economy and present strong growth prospects for long-term investors.

“Whilst we have seen considerable interest in the African data centre sector, the evolution of in-country capacity in many markets outside of South Africa, remains nascent and inadequate to meet rising data demands, migration of enterprises to the cloud, and the need for content closer to end consumers,” he said.

Liquid Telecom, which recently changed its brand name to Liquid Intelligent Technologies (LIT) to encompass its network, cybersecurity and cloud and data centre services, has received US\$400mn worth of investment for new data centres in South Africa, Nigeria, Kenya and Egypt over the coming months. LIT has already installed more than 70,000km of fibre across Africa and operates five data centres in South Africa, Kenya and Rwanda.

It has also installed a high-capacity fibre link connecting East and West Africa and just last month, it deployed a 2,500km longhaul fibre network in the Democratic Republic of Congo.

The Raxio Group, a premier pan-African data centre developer, also announced the first in a series of state-of-the-art, privately owned, carrier neutral, data centres in the

DRC. Set to be commissioned in Q2 2022, Raxio Kinshasa will offer customers an optimised environment for IT equipment in a state-of-the-art facility, equipped with industry-leading technology and security. It comes after the government outlined its goals to digitally transform the DRC through a National Digital Plan - Horizon 2025, highlighting the need for the establishment and modernisation of infrastructure, such as secure data centres, broadband infrastructure, and access to ICT-related incentives.

“Internet traffic continues to grow exponentially in the DRC, with a doubling of daily traffic in the last year alone,” said Raxio’s president Robert Mullins.

It is bringing with it significant new investment to improve connectivity, the digital backbone, availability and access to content in the country. Mullins said Raxio

Kinshasa will be the DRC’s first Tier III carrier-neutral data centre and provide a critical and missing part of the country’s digital infrastructure, needed to support the digital growth with affordable, high quality, co-location environments.

“Our data centres will facilitate internet traffic amongst content providers locally and internationally and make the internet experience faster, more resilient, and more affordable for all digital users,” he said.

The Kinshasa venture will be the group’s third data centre after Raxio Uganda, built on the outskirts of Kampala, and Raxio Ethiopia, where construction started earlier this year in Addis Ababa. The company expects to complete up to 10-12 data centres across Africa to meet the increased demand for high quality local storage and data hosting in the region. ■

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Revolutionising warehousing in Africa

Nawa Mutumweno looks at the pioneering companies behind the continent's warehousing developments.



Africa needs to transform its warehousing facilities, says Geoffrey White, CEO of Agility Africa.

Image Credit: Adobe Stock

Warehousing is a cardinal function for businesses that import, export, transport and manufacture goods.

Having a central location for products gives a company control over merchandise and helps to ensure that customers receive their orders on time. Keeping everything in one place can also save money and boost productivity.

The beauty about warehousing is that it enhances the inventory process as orders are fulfilled efficiently; there is value addition to the operation; and risk to products is reduced.

While Africa contains a number of the world's fastest growing economies, many multinationals are not keen to invest large sums of capital in the continent's facilities due to perceived risks and poor infrastructure development. However, many still need to build a local presence to tap into these markets.

The huge warehousing gap has seen providers struggle to keep pace with demand in the logistics

market, which has been driven by growing e-commerce activity, increasing intra-regional trade, and rapid urbanisation.

High quality warehousing is not only needed for storage and distribution but also for the packing, processing, assembly and light manufacturing of goods; the foundations of any economy. Warehouses help businesses access markets faster and keep capital costs to a minimum, but more often than not, are a neglected part of logistics and infrastructure.

"To reach its true potential, Africa

needs a formidable warehousing transformation from low-quality makeshift warehouses that tend to lack basic secure and safety features to facilities that meet international standards with consistent, reliable, IT connectivity and power," said Geoffrey White, CEO of Agility Africa (a leading global provider of integrated logistics and related infrastructure). He said this transformation will improve agricultural value chains and reduce food losses, help the growth of African SMEs, accelerate e-commerce and drive economic

growth, trade and job creation.

"International standard warehouses will also create a wide variety of jobs, building skills and prosperity and adding to the continent's competitiveness as it develops its export potential for global markets," White continued, in a press statement .

Industrial real estate demand is estimated at more than 15 million square metres in Africa's highest potential markets. This shortage of quality warehousing is increasing the price of goods and stifling business growth.

Bolloré Transport & Logistics Zambia offers various services in the logistics industry including warehousing.

"Our strong knowledge and understanding of the constraints of the market and constant focus on achieving optimised logistics planning, costs and solutions for our clients is the main reason we are ranked high in the business," a statement from their website said.

Located 40km from the

“Imperial Logistic's purpose is connecting Africa and the world and improving people's lives with access to quality products and services.”

MOHAMMED AKOOJEE, GROUP CHIEF EXECUTIVE OFFICER, IMPERIAL LOGISTICS

Kasumbalesa border with DRC in the north of Zambia, Bolloré Transport & Logistics Zambia's Chingola Hub facility is a transit warehouse dedicated to transshipment of commodities from the DRC Katanga region and re-agents (sulphur, lime, magnesium oxide) from southern and eastern countries. It comprises 70,000 sq m – including 15,480 sq m of bonded warehouse – and 2,880 sq m of open storage for final cleared cargo, the company stated.

Innovations

Imperial Logistics recently enhanced its digital supply chain offering in Africa with the introduction of Vitalliance, its joint venture with technology provider One Network Enterprises, which has been selected to steward the OpenLMIS platform serving nine countries in Africa beginning last month.

OpenLMIS is a leading electronic logistics management information

system (LMIS) purpose built to manage public health supply chains in low- and middle-income countries, including Angola, Benin, Cameroon, Ivory Coast, Guinea, Malawi, Mozambique, Tanzania and Zambia.

This partnership will also augment OpenLMIS through new service tiers that offer rich capabilities and services, which will further its ability to reduce stockout rates and enable health workers to provide better patient care.

“OpenLMIS is excited to begin this next phase of supply chain evolution with Vitalliance and the management expertise they bring from Imperial Logistics and One Network Enterprises,” said OpenLMIS director Brian Taliesin.

Also, effective from 1 February, 2021, Imperial Logistics has acquired 60% of eCommerce logistics business, ParcelNinja, which offers an outsourced warehousing and fulfilment business to South African online shops, using its custom-

developed best-of-breed warehouse system and fulfilment network to ensure that clients benefit from scalable infrastructure and an innovative costing model.

“Imperial Logistic’s purpose is connecting Africa and the world and improving people’s lives with access to quality products and services,” said Mohammed Akoojee, Imperial Logistics’ group CEO.

ParcelNinja has been on a rapid growth trajectory since its formation in 2014. Now picking and packing more than 18,000 items for around 3,000 orders daily, the 6,100 sq m warehouse in Johannesburg hosts upwards of half a million items on behalf of online shops across South Africa.

Kenya-based 20cube Logistics offers short-term bonded and non-bonded warehousing capabilities to stock clients’ consignments till delivery. The benefits of their flexible storage facilities include racking, shelving options and bulk

storage facilities. The firm is strategically positioned to take care of warehousing needs as well as coordinate with the global supply chain.

“Our warehousing facility meets the international quality and safety standards and ensures the safety of your consignment. With our warehousing services, you save more than 20% direct cost on warehousing and transportation. In addition, we also provide pick and pack and door to door service. Our digital warehousing management system ensures that the inventory is in place to avoid last-minute delays in supplying the demanded commodity,” said 20cube Logistics general manager, East Africa, Tusar Nairi.

With support from governments and investment from the private sector, a warehousing transformation can revolutionise African supply chains, helping the continent fulfil its immense potential and purpose. ■

CAT EP-CB ELECTRIC RANGE EXTENDED FOR HEAVIER JOBS

Cat Lift Trucks has added 3.0 and 3.5 tonne 72V models to its EP-CB 4 wheel electric counterbalance forklift range.

Response to the smaller 1.5 to 2.5 tonne 48V lift trucks, launched last year in Africa, the Middle East and CIS, has been very positive. The range promised to boost profits by cutting operating costs and giving drivers the right conditions and equipment to work more productively.

Since that launch, customers in the AME and CIS markets have been eager to see the same truck characteristics applied at higher capacities. The two new models answer their need with extra lifting power for the heaviest applications. With those additions, there are now nine economical and easy-to-handle models covering everything from light, medium and heavy warehouse duties to outdoor tasks.



The new EP-CB 3.0t 72V model has a range of additional optional features to meet the user's needs.

Rapid and refined performance

Drivers of Cat EP-CB forklifts can work quickly, comfortably, confidently and smoothly thanks to a high-stability design and a host of ergonomic features. They include refinements such as pitching control, which

minimises shaking of loads when travelling over uneven or humped surfaces.

Lower costs and increased profits

By making drivers more productive and reducing the total cost of ownership, EP-CB trucks

increase business profitability.

Energy consumption is lowered – and battery runtime from each charge extended – through the ECO performance mode, efficient regenerative braking and an auto power off feature. Repair and maintenance bills are minimised by the trucks’ robust design while an easy-to-read liquid crystal display (LCD) encourages correct usage and servicing.

High productivity and safety

Manoeuvring is fast, precise and safe, with advanced electric hydraulic steering. Automatic safety systems – some standard, some optional – continuously monitor the truck’s activities and adjust travel, lift and tilt speeds when necessary.

For information on Cat forklifts, warehouse equipment and related services visit www.catlifttruck.com.

Meets the need, makes the move: Hyster UT series

In 2020, Hyster expanded customer choice with the launch of the new UT series of counterbalance forklifts and warehouse trucks. James Newman, area business director, Middle East and Africa for Hyster, shares its success.

Hyster already had more than 140 models of counterbalance trucks, warehouse, and container handling equipment. Why was another truck series added?

We are seeing ongoing demand for straightforward, durable, reliable solutions that are also uncomplicated to maintain. This trend applies to IC and electric lift trucks, plus warehouse equipment. However, affordability is key, and it is important that businesses can select the right truck for both their needs, and their budget.

The new Hyster UT series responds to this growing market demand for affordably priced solutions that get the job done. They are particularly well suited to lower intensity applications and when matched with the right application and the right operating volume, businesses find these trucks straight-forward, durable, reliable, and uncomplicated to maintain.

The lift trucks are affordable, but how else can they help reduce costs?

The Hyster UT forklift series is designed to provide strength, reliability, and a low total cost of ownership. Hyster UT trucks are built to deliver a long working life, and where needed, replacement parts are readily available. The series is also covered by our standard Hyster warranty.

In addition, we are seeing businesses that are looking to self-service, benefitting from reduced service time and costs. The trucks across the series are designed with simple wiring and durable components, alongside easy service access and straightforward maintenance.



The Hyster J1.5-3.5UT four-wheel electric truck.

Image Credit: Hyster

The series launched with IC counterbalance forklifts. How has the range expanded?

The Hyster H2.0-3.5 UT IC lift trucks were the first of the series to launch, ideal for stacking in the warehouse or loading lorries in the yard. In the future, we expect to introduce further IC trucks in the UT series to meet the need for higher capacities too.

However, many businesses in the Middle East and Africa want to switch from IC trucks to electric forklifts, so it was important for us to meet this demand too. Last year,

nine new three- and four-wheel forklift models for lifts up to 3.5 tonnes joined the Hyster UT series. The Hyster J1.5-3.5UT four-wheel and J1.6-2.0UTT three-wheel electric forklifts are designed to be simple to use and easy to maintain, for affordability and reliability across industry.

What about options for cost-effective warehouse equipment?

The UT range has also expanded to include warehouse equipment that will suit many applications, with an affordable alternative for lower

intensity operation. This includes the Hyster P2.0UT S Platform Pallet Truck, the S1.5UT Pedestrian Stacker and the S1.5UT S Platform Stacker.

For example, the Hyster P2.0UT S Platform Pallet Truck is ideal for operations requiring pallet transportation or for lorry loading and unloading. For stacking pallets in the warehouse, and some picking operations, applications may choose the Hyster S1.5UT Pedestrian Stacker truck. Alternatively, a Hyster S1.5UT S Platform Stacker offers an affordable solution for those transporting stock in warehouses and manufacturing operations. With a fit-for-purpose foldable platform, it helps to enhance operator comfort. ■

“ Many businesses in the Middle East and Africa want to switch from IC trucks to electric forklifts.”

For more information on the new UT series, visit www.hyster.com or contact your local Hyster dealer.



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& DISTRIBUTION



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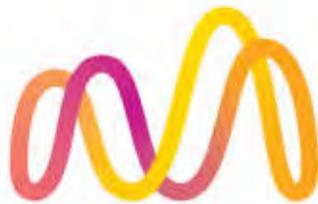
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Building trust in Africa from a legal/business standpoint

Tameru Wondm Agegnehu, founding partner of Tameru Wondm Agegnehu Law Office, in cooperation with BonelliErede, talks on the progress of legal reforms in Ethiopia and the wider opportunities that has opened up on the continent through AfCFTA.

We live in a world that is shrinking into easily accessible neighbourhoods with every passing day. Borders are cracking open; laws are relaxing; communications by land, air, sea and telecom networks are loosening; and movements are becoming the rule rather than the exception. And above all, new concepts of laws and business are growing in a way to match the new, inclusive development trend mushrooming all over the world.

International institutions, including the UN, EU, AU, ECA and WTO, are major instrumentalities that pave the way for harmonising legality and business development among nations. The latest major step taken by African leaders in that direction is the adoption of the African Continental Free Trade Area (AfCFTA) which has the effect of opening up Africa to itself. Such opening-up requires common trends, concepts, understandings and ways of doing business, including harmonisation of laws. We have seen concrete examples along that line among the West African communities, which have agreed to adopt nine validated uniform acts. Such acts serve as the basis for building legal and business trust among the people not only within a country but also among neighbouring members of the Organisation for the Harmonisation of Corporate Law in Africa, (OHADA) community. They aim to harmonise business laws in Africa to guarantee legal and judicial security for investors among its members. They also serve as a vehicle for economic

development and social understanding, which are instrumental to create peaceful coexistence with common expectations from each other. AfCFTA opens that door even wider not only in terms of countries but also areas covered. The broad objective of AfCFTA is to create a single continental market for goods and services with free movement of business and investments, and thus pave the way for accelerating the establishment of the continental customs union.

The potential impact of AfCFTA, as portrayed by many experts, includes boosting intra-Africa trade, manufacturing exports and job creation (with a focus on youth) and alleviating poverty. Such free movement in Africa is likely to reduce massive migration and brain-drain away from Africa. Other examples include the New York Convention, which Ethiopia acceded to recently and is another vehicle to build legal/business trust among all parties to the convention in the matters covered therein.

There are many other international conventions, treaties and instruments binding nations and countries together on various areas to work together or to create joint legal or business pacts among neighbours. These are good

beginnings, but there is still more to be done in that direction. Africa needs to emulate the EU in many areas. The AfCFTA is a step in the right direction, with a vision for a market open to over a billion people. In other respects, a lot remains to be done in terms of harmonising domestic laws in Africa, which are further beset by systemic differences. Again, the OHADA model could serve as a good example to follow. On the other hand, there are monetary, financial and infrastructural hurdles that Africa needs to harmonise. All are important, but the infrastructural hurdle, which has kept Africa impregnable for over 100 years, deserves primacy. The motto 'Cairo to Cape Town' advanced by British Colonial powers was paralleled by the French 'Djibouti to Timbuktu' plan, until both exploded in the Fashoda incident of 1898 between the forces of the two powers. Efforts have been made by African countries to improve land and air links between them since independence. Ethiopia, which has built good road links with most of its neighbours, rail links with one of its neighbours and air links with the majority of African countries, could be taken as a good example. So too is the air link connecting Africa, end-to-end and originating from Addis Ababa,

thanks to Ethiopia's world-class airlines. Ethiopia is further planning to extend its rail connections to the rest of its neighbours.

Ethiopia, as a seat of the AU, enjoys many advantages that put its capital Addis Ababa in the limelight. It handles many AU sessions and hosts many meetings that many diplomats from all over Africa attend, and as a result the country is expected to play a pivotal role in promoting more uniting treaties and agreements in the continent. This is, of course, in line with the history of Ethiopia and with all the efforts made in the line up towards the formation of the African Union.

Ethiopia must also create an inviting environment for the private sector, to encourage them to either invest or professionally engage, jointly or alone, in a defined economic or professional sector. It is clear that many areas are open, and the recent adoption of the LLP mode of business formation for professionals who, if licensed lawyers in other lands, can appear with local practitioners in court is a recent trend and an important step in the right direction. So too, is the new law that allows lawyers to organise themselves into law firms, 69 years since when licensing started, which opens up an opportunity to forge relationships with law firms of other lands.

Finally, building trust in Africa from a legal/business point of view must be encouraged to proceed in the public and private sector, and the trend so far is encouraging but requires more effort and commitment to speed up its pace. ■

“ Building trust in Africa from a legal/business point of view must be encouraged to proceed in the public and private sector.”

EAIIF supports Burkina Faso solar plant

The Emerging Africa Infrastructure Fund (EAIIF) is lending 29 million euros to support construction of a 30MW solar plant in Burkina Faso.

Located some 250km south east of the nation's capital city of Ouagadougou, near the town of Pâ, the new solar energy plant will supply all the electricity it produces to Burkina Faso's national power utility, La Société Nationale D'électricité Du Burkina Faso (SONABEL).

The EAIIF, a member of the Private Infrastructure Development Group (PIDG), is lending the project's developer, Urbasolar SAS, 80% of the capital needed for the construction of the new facility, with the total development cost being 35 million euros. Financial close is expected by the second quarter of the year. Urbasolar will build and operate the plant, and construction is forecast to be completed within 18 months.

Paromita Chatterjee, an investment director at EAIIF's managers, Ninety One, said, "Harnessing Burkina Faso's sunshine to improve its future prospects will bring many benefits to the country and make an important contribution to fighting global warming. This project is a perfect example of how EAIIF's public-private partnership model can have lasting economic, social and environmental impacts while mobilising private capital and enterprise to create new infrastructure."

EAIIF has now supported 20 renewable energy projects across Africa. It has provided US\$350mn of loans to private sector developers, bringing Africa 825MW of clean, renewable energy.

Burkina Faso has one of the world's lowest rates of electrification. Because of a shortage of installed energy generation capacity, the country needs to import electricity from neighbouring states. Urbanisation, structural changes to the economy and recent strong GDP growth have increased demand for energy. Currently relying mainly on fossil fuel power stations, the country has embarked on a programme of attracting private capital and expertise to build renewable energy capacity. The Urbasolar project is one of the first of the new green energy plants. Around 280MW is expected to be commissioned over the next three years.



Image Credit: Adobe Stock

The new plant will supply electricity to the national power utility.

SOLAR PHOTOVOLTAIC PLANT FOR MALAWI

InfraCo Africa, part of the Private Infrastructure Development Group (PIDG), and its project partner, JCM Power (JCM), have announced their commitment to finance the construction of the 20MWAC Golomoti Solar project with a 5MW/10MWh lithium-ion battery energy storage system (BESS).

Golomoti Solar will be the first commercial-scale solar photovoltaic plant in Malawi to include a BESS, and along with its sister project, Salima Solar, Golomoti is among the first commercial-scale solar photovoltaic plants in the country.

Located in Dedza, approximately 100km south east of Lilongwe, the Golomoti Solar plant will facilitate delivery of clean power to Malawi's national grid. The project will incorporate a 5MW/10MWh lithium-ion BESS, which will enable the plant to provide reliable power and improve network stability, reducing reliance on hydro and diesel generation, while ensuring that grid stability is maintained.

ABB POWERS EGYPT AGRICULTURE PROJECT

ABB has provided electric power solutions for the Toshka new agricultural area in Egypt. The initiative aims to reclaim an area of more than 2,200 sq km of desert by 2024 in the South Valley of the Toshka area, boosting agricultural production and creating job opportunities.

It will support the efforts to assure food security and achieve wheat self-sufficiency for Egypt. ABB supplied all medium voltage primary and secondary switchgear, UniGear and UniSec, along with compact substations for the first three phases of the project.

The total contract value is US\$4.8mn and will guarantee the power supply for irrigation systems and related services stretching across more than 400 sq km of reclaimed land in the Toshka desert. ABB has also delivered complete solutions to provide reliable, energy-efficient operation for the project's 57 pumping stations. This included the installation of hundreds of motors, variable speed drives (VSDs) and soft starters.

"We are proud to be part of this mega project which aims to create sustainable development and a better future for the people of Egypt," said Loay Dajani, country managing director, ABB, Egypt. "We are glad to provide the latest technology for the communities of Toshka which will help them achieve balanced economic success, environmental stewardship and social wellbeing to benefit their present and future."



Image Credit: ABB

ABB has supplied power solutions for the Toshka new agriculture area in Egypt.

BRIEFS



Image Credit: Adobe Stock

The plant will be built at Kom Ombo in Upper Egypt.

AfDB finances Egypt project

The African Development Bank has approved US\$27.2mn in loan financing for the design, construction and operation of a 200MW photovoltaic solar power plant at Kom Ombo, in Upper Egypt on the River Nile.

The European Bank for Reconstruction and Development, the Green Climate Fund (GCF), Arab Bank and the OPEC Fund for International Development will also contribute funding. The plant is owned by ACWA Power.



Image Credit: Bboxx

Bboxx shop in Katito, Kenya.

EDF invests in Bboxx Kenya

EDF has invested in Bboxx's Kenya business to accelerate access to solar home systems for off-grid communities and businesses, bringing clean energy to more than two million people in Kenya by 2025. This builds on Bboxx and EDF's joint venture in Togo since 2018.

Bboxx manufactures, distributes and finances decentralised solar powered systems in developing countries, and has been operating in Kenya since 2011.

Tlou Energy plans to raise US\$3.5mn for Lesedi project

Tlou Energy, an ASX, AIM and BSE listed company, has proposed its intention to undertake an equity placement of US\$3.5mn to secure funding for the Lesedi project.

The proposed placing by Tlou Energy will be mainly applied towards the construction of a 66kV transmission line from the company's Lesedi project to the existing electricity grid at Serowe, Botswana towards field operating costs and ancillary equipment.

Tlou Energy has been working with a number of parties to secure funding for the Lesedi project. The most advanced project finance discussions are currently with a very reputable Botswana based entity, who are proceeding to get a third-party review of the project as part of their due diligence process.

The Lesedi project is set to be developed in two phases. Phase one involves transmission line construction, sub-stations, grid connection, electricity generators and potentially, the drilling of additional gas wells. Funding required for phase one is US\$10mn, which can be staged if necessary.

Phase two funding is for the expansion of electricity generation up to 10MW. This is planned to include drilling of gas wells and the purchase of additional generation assets. The funding required for phase two is worth US\$20mn. Upon successful completion of phase one and two, the company plans to expand the project beyond 10MW.

Shore Capital Stockbrokers will be conducting an accelerated bookbuilding process in respect of the placing. Shore Capital has entered into an agreement with Tlou Energy under which, subject to conditions, Shore Capital will agree to use its endeavours to procure subscribers for placing shares at the relevant price.



Image Credit: Adobe Stock

Tlou Energy has proposed to raise US\$3.5mn for the Lesedi project.

AFDB FUNDS US\$530MN PROJECT IN ANGOLA

The African Development Bank (AfDB) has committed US\$530mn for the construction of a 343km and 400kV central-south transmission line that will connect the north and south transmission grids in Angola.

The north of Angola has a surplus of more than 1,000MW of mostly renewable power, whereas the south relies on expensive diesel generators, supported by government subsidies.

Transmission capacity will increase by 2,250MW and eliminate the need for polluting, diesel-powered generators in southern provinces. The project, once operational in 2023, will avert the consumption of 46.8 billion litres of diesel per year in the south, cutting 80 megatonnes of CO₂ emissions. The government of Angola will save more than US\$130mn per year in diesel subsidies.

The finance package, approved in December 2019 by the board of directors of the AfDB, consists of US\$480mn in financing from the bank, along with US\$50mn from the Africa Growing Together Fund, a US\$2bn facility sponsored by the People's Bank of China and administered by the AfDB.

The funding covers the first phase of the Energy Sector Efficiency and Expansion Programme (ESEEP) in Angola, which will assist the government to connect the country's transmission grids and tackle limited operational capacity within the Angolan power distribution utility, ENDE.

According to AfDB, the transmission line will become the backbone for the power distribution to the southern provinces of Angola and Namibia and will enable power trading between countries in the region.

The funding follows other recent bank contributions to Angola's energy sector strategy. In 2015, the bank approved a US\$1bn loan for Angola, which resulted in the creation of an independent regulator.

BATTERY DEMAND FORECAST TO RISE SHARPLY

The market penetration of electric vehicles is increasing rapidly as a result of the accelerating energy transition, and demand for batteries is expected to skyrocket going forward for both transportation and grid storage, according to Rystad Energy's latest Energy Transition Report.

The report reveals that the share of EVs in global new passenger car sales is set to quadruple in 2026 from 4.6% last year and exceed 50% from 2033 onwards. New battery electric vehicle (EV) sales, excluding hybrid vehicles, are expected to record consecutive annual growth going forward.

In 2021, Rystad Energy expects EVs to take up around 6.2% of global passenger car sales, with the share climbing to 7.7% the following year. Passenger cars will be, by far, the best market for new batteries, accounting for around 70% of total demand in the long term and for almost all demand until 2025. From then, Rystad Energy expects battery adoption will also increase in heavy transport, shipping and aviation.

► BRIEFS

Feasibility study for South Africa's Hydrogen Valley



Image Credit: ENGIE

Sébastien Arbola, ENGIE executive vice president in charge of thermal generation, energy supply activities and hydrogen.

ENGIE has signed a pact with South Africa's Department of Science and Innovation, South African National Energy Development Institute, Anglo American and Bambili Energy, to carry out a feasibility study to create a "Hydrogen Valley". It will be located on the Bushveld Complex and around Johannesburg, Mogalakwena and Kwazulu Natal. The project's aim is to identify three hydrogen hubs - zones with high hydrogen demand, with access to green hydrogen, that act as a hydrogen eco-system.

Potain MCT 58 placed by helicopter on hydroelectric dam



Image Credit: Manitowoc

A helicopter lifts the components to assemble the Potain MCT 58.

Manitowoc dealer GLI has erected a Potain MCT 58 tower crane using a helicopter on the island of La Réunion in the Indian Ocean.

The MCT 58 was purchased to replace an old Potain 427 E that was manufactured in the 1970s and installed in the 1990s on a hydroelectric dam over the Rivière de l'Est at the EDF Sainte-Rose power station in La Prise d'eau des Orgues. EDF required the crane to dismantle the old crane and carry out general maintenance on the dam.

The future pathway of Africa's power system

Economist Moin Siddiqi unveils the massive potential of renewables to transform the continent's energy capacity, through detailed analysis from the World Energy Outlook – the IEA's flagship publication.

Africa is the continent with the highest untapped 'technical' renewable energy resources: solar, hydro, wind and geothermal power. These resource potentials, (all scalable energy options), far exceed both current and projected power consumption of the continent. Cleaner energy should be high on agenda. Despite this, funding constraints; underdeveloped grids and infrastructure; lack of scale and competition; high transaction costs as well as unstable off-taker financial arrangements, and in some countries, an uncertain regulatory environment and low institutional capacity have, so far, hindered the growth of renewables compared to other regions. Driven by technological innovations and cost reductions, renewables have reached price and performance parity with burning fossil fuels. The cost per megawatts-hour (MWh) for solar PV has fallen from US\$600 a decade ago to match coal's production cost at around US\$100. Renewable power capacity in Africa increased from 28 gigawatts (GW) in 2010 to 50GW in 2018, equivalent to

20.4% of total installed generation capacity, according to the International Energy Agency (IEA). Non-hydro renewables comprised only 15GW, or just 6% of Africa's total generation output in 2018. The International Renewable Energy Agency (IRENA) study in 2014 assessed the potential of various renewables technologies in Africa.

* **Sunlight:** Solar photovoltaic (PV) could provide over 620,000 Terawatts hour (TWh) of electricity per year, with highest theoretical potentials in east Africa and southern Africa (see bar chart). The potential of concentrating solar power (CSP) was assessed at 470,000 TWh/year, mostly in eastern and southern Africa. The continent's solar PV 2018 installed capacity was reported at 4.5GW.

* **Wind:** The International Renewable Energy Agency (IRENA) estimated wind resources close to coastal locations and other natural channels in eastern and northern regions could produce 460,000 TWh of electricity/year. Algeria, Angola, Egypt, Madagascar, Mozambique,

Growth in renewables-based electricity generation in selected regions, 2018-2040 (TWh)

	Solar PV		Other * renewables
India	1,000	European Union	990
Africa	500	Africa	800
United States	490	India	700
European Union	200	United States	500

*Includes hydro, wind, geothermal and concentrating solar power (see energy terms 1-5).

Source: World Energy Outlook (IEA) 2019.

Somalia, South Africa, Sudan and Tanzania boast strong wind energy potentials. Installed wind power 2018 capacity was 5.5GW (mostly in South Africa). In 2020, the Global Wind Energy Council estimated total wind power capacity across Africa at 6,468MW.

* **Geothermal:** Resources are mainly concentrated in the East Africa Rift System, where total production could exceed 15GW (Geothermal Energy Association, 2019). This potential remains largely untapped. Only Kenya has installed about 700MW of capacity, with plans underway to develop further 1,000MW from three sites (Geothermal Development Co. 2019). New developments totalling more than 1GW are planned in Djibouti, Eritrea, Tanzania, and Uganda. Ethiopia also possesses vast geothermal resources.

* **Hydroelectric:** The full (optimal) technical potential for hydropower is estimated at 1,120 TWh in just 12 countries, which represents more than eight times the current level of hydropower generation across Africa. The Congo River and Nile Basin make these ample resources more economical to develop. A 2018 study on *Geospatial Assessment of*

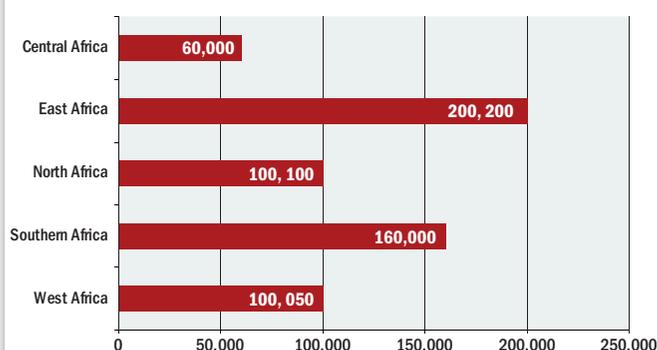
Small-Scale Hydropower Potential in sub-Saharan Africa indicated that smaller-scale and mini-projects in the region could add 21,800MW and 3,400MW, respectively, of extra hydropower capacity. According to the International Hydropower Association, only 11% of Africa's total technical potential [to date] has been utilised.

Cleaner energy targets

South Africa seeks to procure 15GW from the Renewable Energy Independent Power Producer Procurement Programme, which has attracted around US\$15bn in power sector investment. The National Development Plan 2030 envisages at least 20GW of the additional 29GW of electricity needed by 2030 from renewables and natural gas, and decommission of 35GW of coal-fired capacity.

Ethiopia aspires to be a 'power hub' for the Horn of Africa by expanding national generating capacity by 25,000MW by 2030, of which 22,000MW, 1,000MW and 2,000MW, will derive from hydro, geothermal and wind respectively. It has set an ambitious target to supply 100% of its domestic energy demand through renewable energy by 2030.

Solar energy resource potential* per year in Africa, (TWh)



Source: World Energy Outlook (IEA) 2019.

*The vast Sahara Desert has the world's highest solar potential (see footnotes 1-2).

Angola established targets for renewable energy sources to 2025: 500MW of biomass; 370MW of small and medium hydro; 100MW of solar PV; and 100MW of wind. It aims at reducing greenhouse gas emissions by 35-50% by 2030.

Senegal seeks to achieve 200GWh hydropower capacity in electricity generation output.

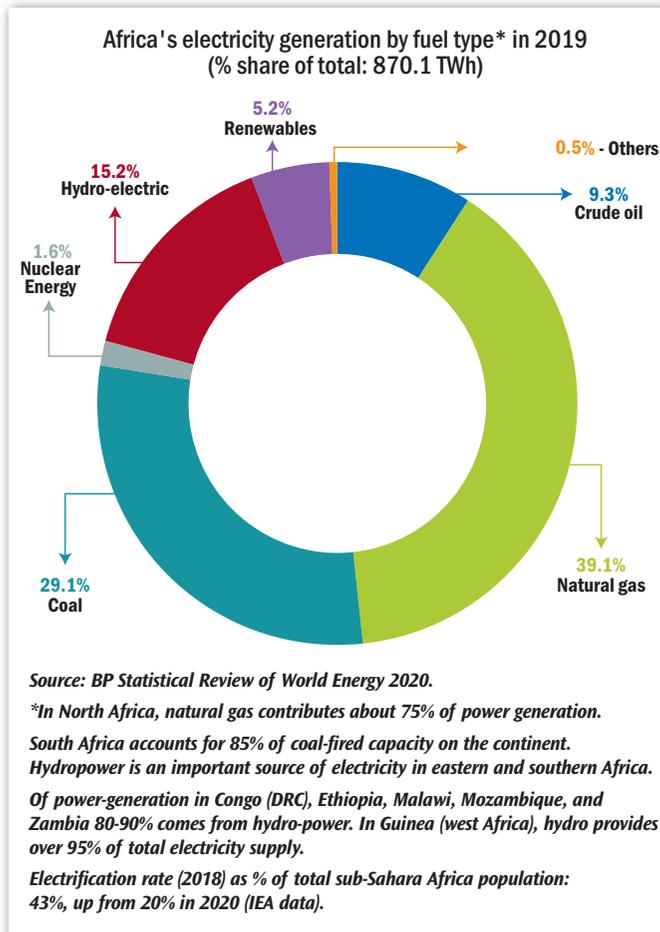
Kenya aims to develop 2,275MW of geothermal capacity by 2030.

Ghana set targets of 10% renewables in the national energy mix and 20% solar power in agriculture by 2020.

Tanzania aimed to increase power generation capacity from 1,500MW in 2015 to 4,910MW and achieving 50% energy from renewable sources by 2020. The Covid-19 outbreak and subsequent falls in infrastructure investment probably affected targets for Ghana and Tanzania.

Major low-carbon projects

Hydropower: The Grand Ethiopian Renaissance Dam due



online by 2023, generating 15.1TWh/year at full-production; the Inga 3 dam (Congo, DRC) with planned installed capacity of 4,800MW; the 2.2GW Caculo-Cabaca dam (Angola) due online in 2024; and Guinea's Souapiti 450MW – 90% finished. Over two-thirds of the 17GW of hydro projects under-construction in Africa are due online by 2025 (IEA data).

Solar: B&S Power Holding PTE, a Singapore renewable energy corporation, and Sunnyfred Global, a Nigerian investment entity, concluded arrangements to design, develop, finance and construct West Africa's largest solar PV farm south of Delta state, with a capacity of 200MWh.

Wind: A 100MW Assela wind farm is planned in Ethiopia – comprising of 29 SG3.4-132 wind turbines. The project will generate around 300,000 MWh/year. In Kenya, the 100MW Kipeto wind farm was recently connected to the national grid.

Future generation mix
The contribution of renewables to



Olkaria II geothermal power plant in Kenya.

Image Credit: Adobe Stock

Africa's electricity supply is expected to surge in the next two decades.

Non-hydro resources (solar PV, geothermal and wind) could account for almost one-third of aggregate power generation by 2040. Installed solar PV capacity increases are projected at 160GW in 2040 (IEA data) – becoming the number one and second-largest electricity source, respectively, in terms of installed capacity and

generation output in Africa.

Deployment of geothermal (especially in Kenya) and wind (South Africa and Ethiopia) is envisaged to increase, but hydro-electric will remain the bedrock of the region's power system – with generation almost tripling by 2040. Congo (DRC) notably boasts colossal hydropower capacity estimated at 100GW, which could generate 774TWh of electricity/year for the

continent. To unlock Congo's vast potential requires integration of regional power networks and closer inter-state cooperation.

In sum, reliable electricity supply is pivotal to future industrialisation of Africa. With the right policies and advances in renewable energy technologies and cost reductions, "Africa could be the first continent to achieve a significant level of industrialisation with cleaner

energy sources playing a prominent role, requiring much less energy and emissions to deliver economic growth than other economies in the past," said the IEA in 2019.

The IEA estimated that scaling up Africa's capacity to achieve universal access to energy by 2030 requires over US\$100bn/year, of which 40% would be dedicated to solar, wind, and other low-carbon power generation projects. ■

Wind power is a form of energy conversion in which turbines convert the kinetic energy of wind into mechanical or electrical energy used for power.



ENERGY TERMS

1. Photovoltaic (PV) is a system devised to supply usable power. It consists of several components, including solar panels to absorb and directly convert sunlight into electricity, a solar inverter to change the electric current from direct current (DC) to alternating current (AC), as well as mounting, cabling and other electrical accessories. When light shines on a (PV) cell – that light may be reflected, absorbed, or pass right through the cell.

2. Geothermal energy is the heat that comes from the earth's crust. Technologies include dry steam power; flash steam power; and binary cycle power stations. It does this using high-temperature (300-700°F) heat from the Earth, accessed by drilling hot water or dry steam wells in a process similar to oil drilling. This heat is trapped in between the rocks and other parts of the earth's crust. Due to excessive high temperature and pressure, rocks melt and behave plastically.

3. Wind power is a form of energy conversion in which turbines convert the kinetic energy of wind into mechanical or electrical energy that can be used for

power. Modern commercial wind turbines produce electricity by using rotational energy to drive a generator. This mechanical power can be used for specific tasks (such as grinding grain or pumping water), or can be converted into electricity by a generator. Wind power is cost-effective in many regions.

4. Hydropower is one of the oldest renewable energy sources for generating electricity from water, which may be harnessed for useful purposes. Electricity is produced from generators driven by turbines that convert the potential energy from falling or fast-flowing water into mechanical energy. It comes in many forms, from run-of-river to pumped storage to wave energy.

5. Concentrating Solar Power (CSP) technologies use mirrors or lenses to concentrate the sun's light energy and convert it into heat to create steam to drive a turbine that generates electrical power. CSP plants produce electric power by converting sunlight into high-temperature heat using various mirror configurations. The heat is then channelled through a conventional generator.

FOOTNOTES

1. The vast Sahara Desert boasts huge potential to be the world's biggest renewable energy source, according to professor Amin Al-Habaibeh of Nottingham Trent University (UK). The estimated solar energy available in the Sahara desert exceeds 22bn gigawatt hours (GWh) annually. Theoretically, if the entire Sahara were one giant solar farm, it would generate 2,000 times more energy than the largest operational single site solar project – the Noor Abu Dhabi (UAE) – with a total capacity of 1,177MW (end-June 2019).

2. The African Development Bank (AfDB) president Akinwumi Adesina speaking at an ECOWAS summit (2020) promoted the 'Desert to Power' initiative to provide 10GW of electricity to 250mn people in the Sahel region by 2025 by tapping into solar potential. Around 10 Terawatts - 81 times sub-Saharan Africa's installed capacity – can solve Africa's chronic power shortage. But this will require harmonised regulation/legislation among Sahel countries, regional security and substantial financing. AfDB estimated the 'Desert to Power' cost to be US\$153bn - more than the total annual infrastructure spending across Africa.

All systems go for Africa's genset makers

Africa's genset industry is holding up despite the exceptional events of the past year, with major players positioning their businesses for future growth. Martin Clark reports.

It has not been the easiest of years for any business or industry the world over, but demand for genset power in Africa has remained firm nonetheless.

In a 2020 round up, Portugal's Grupel reported that activity was up despite the unscripted events surrounding the Covid crisis and ensuing lockdowns.

In 2020, it was active in 70 countries – an increase of around a dozen over the previous year – across all continents, including Africa.

Marco Santos, its chief executive, hailed it as a “year to remember”.

Grupel's combined installed power was up 6.7% compared to 2019, he noted, while total customer numbers jumped to 800, some 57 more than the previous year.

Last year, the company was tasked with providing an emergency power source to the Azito Combined Cycle Plant, one of the largest thermal plants in the Ivory Coast.

The project consisted of five diesel generators of 3125kVA (STP) with MTU engine (20V4000G74F) and MECC ALTE alternator (ECO47MV-1L/4A) each of which was installed in a 40” container.

Operating as an emergency system, it will supply the necessary load to protect the plant's sensitive equipment in the event of a power failure.

Azito is currently undergoing a big extension that will boost its output to approximately 710MW, roughly a third of the country's total power supply.

The power plant in Abidjan is owned by a consortium of investors led by emerging markets specialist, Globeleq.

Mines and markets

The immense variety of applications for genset power plants is one of the chief reasons for their enduring



Tenke Fungurume Mining Corporation chose Caterpillar dealer, Congo Equipment, to provide 14 Cat DE550 diesel gensets to supply standby and prime power for its operations.

Image Credit: Caterpillar

success in Africa's challenging environment over many decades.

These mobile power plants have long supported Africa's major industries, from oil and gas to mining, and are increasingly finding new opportunities as well, as the information and digital economy expands and widens.

Himoinsa completed an important installation last year in Ethiopia, for the country's Information Network Security Agency (INSA).

The 3MW project comprises three generator sets, two HTW 1745 units and one model of HFW 250.

The work was undertaken by Himoinsa's distributor in Ethiopia, Leed Building Technology Trading, together with a contractor, Defense Construction.

The project will be vital to guarantee the continuous function of the main data systems that underpin the country, one of Africa's fastest growing economies.

Tenke Fungurume Mining Corporation recently selected Caterpillar dealer, Congo Equipment,

to provide power solutions for its copper and cobalt mining operations in the Democratic Republic of the Congo (DRC).

Congo Equipment installed and commissioned 14 Cat DE550 diesel gensets to supply a total of 7.7 MW of standby and prime power for mining operations, ore processing, crew support, and administrative functions.

The local dealer also provides on-site support to the mining company, with technicians available around the clock and operating a component rebuild centre. Tenke Fungurume Mining is Africa's leading copper producer and the world's top cobalt miner.

Opportunities

In an under-developed region plagued by erratic power supplies, Africa has long turned to companies such as Cat, Himoinsa and Grupel, to provide secure, stable and dependable energy; from mines to luxury hotels.

Larger deployments have also been utilised to provide temporary support for frail national grids and

utilities, which provide the energy backbone of any economy.

Zest WEG has played a key role in supporting a multitude of clients across the continent. From a powerful local manufacturing base in South Africa, it now maintains a growing footprint right across sub-Saharan Africa.

Juliano Vargas, the firm's chief executive, said this is the result of investing heavily in technology and skills development in recent years.

As a result, local content in the manufacture of transformers is now nearly 90%.

Aksa Power Generation, a part of Kazancı Holding, also extended its footprint this year, opening new offices in Kenya and Sudan, part of a broader plan to grow rapidly in Africa; it is planning to open a new site in Senegal soon as well.

In March, Cummins expanded its diesel genset series with the introduction of the C2750D5BE model to complement its successful QSK60 series, extending its standby power range from 2500kVA to 2750kVA for 50Hz markets. ■

AFRICA POWER SERVICES: NEW ENERGY FOR AFRICA

With the creation of JA Delmas' sister company, Africa Power Services, the group's long history continues to be written.

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You can now count on the expertise and experience of a solid new partner to assist you with your thermal, solar or hybrid power plant projects throughout Africa.

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For 20 years within the JA Delmas Network, the Africa Power Services team has built up solid experience in West Africa to meet the specific needs of mining customers, utilities and industries. Through all their accomplishments, they have learned to meet any challenge whatever the context, by showing ingenuity and combining high-performance technologies with tailored solutions.

The strength of a network

The expertise and standards of Africa Power Services allow us to rely on the best industrial partners in their field. From a technological point of view as well as in terms of experience,



Image Credit: JA Delmas

our network covers all the know-how necessary to ensure the optimal operation of a plant throughout its lifespan.

From the choice of maintenance for medium speed engines, which reduces maintenance costs and increases lifespan, to the implementation of renewable energy in the energy mix, our teams work together to address your long-term challenges.

Solutions to meet your requirements

From the simple delivery of spare parts to the full EPC of a hybrid power plant, with a full operation and maintenance contract, to technical assistance, advice, supervision,

training, Africa Power Services offers you safe, efficient and effective services for all types of energy needs.

If every project is a unique challenge, they all require dependability and performance. From early feasibility studies to construction, and then throughout the operation, we engage alongside our customers. The experience gained by our teams allows us to fully understand the situation, the requirements needed and the environment in which our customers operate.

Long-term human commitment

Our expertise does not only relate to equipment and installations, but also to the teams who operate them. Training and advice strengthen the autonomy and performance of our customers on each site.

Committed to our customers on the African continent, the women and men of Africa Power Services give precedence to reliability and performance over the duration of each project.

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SOLUTIONS TO MATCH YOUR CHALLENGES



GENSET Buyers' Guide

Section One: Suppliers

Section Two: Agents & Subsidiaries in Africa

Please mention African Review when contacting your supplier

Section One: Listings by Suppliers

ABZ-Aggregate-Bau GmbH & Co. KG

Gutenbergstrasse 11
Henstedt-Ulzburg
24558
Germany
Tel: +49 4193 90360
Fax: +49 4193 93473
Web: www.abz-power.com
E-mail: info@abz-power.com

ABZ manufactures, installs and services custom-built diesel gensets of 50kVA to 5000kVA capacity for continuous, stand by or peak load operation for all possible applications as stationary, mobile, containerized or canopied units. A wide range of control systems and switchboards for all kinds of operations is available.

Africa Power Services



46 Rue Ferrere 33000 Bordeaux, France
Tel: +33 556796294
Web: www.africapowerservices.com
E-mail: contact@africapowerservices.com

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Kempton Park
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Tel: +27 861 244 735
Web: www.aggreko.com
E-mail: Sibongile.Thobakgale@aggreko.com

World-leading provider of mobile modular power, temperature control and energy services, supplying portable equipment for a wide range of uses.

Aggreko specialises in serving eight key sectors: Oil & Gas, Manufacturing, Mining, Petrochemicals & Refining, Business Services & Construction, Events, Telecommunications/Data Centres and Utilities.

Agents:

Kenya - Aggreko Kenya
Nigeria - Aggreko Nigeria
Angola - Aggreko South Central Africa
South Africa - Aggreko Southern Africa
Tanzania - Aggreko Tanzania

AJ Power Ltd.

1 Charlestown Drive, Craigavon
Northern Ireland, BT63 5GA, UK
Tel: +44 28 38361000
Fax: +44 28 38361010
Web: www.ajpower.net
E-mail: sales@ajpower.net

AJ Power specialises in the volume manufacture and design of diesel generating sets from 10kVA to 4000kVA, associated equipment and HV solutions up to 13.8kV. The companies' strength lies in engineering excellence built on experience. Drawing on these skills and utilising the latest technology we provide a cost effective, reliable source of power with suitable solutions to cover a wide range of industries. All products are designed, manufactured and tested, in our UK factory using European components, fully supported by our dedicated engineering and after-sales team in partnership with our distribution network.

AKSA Jenerator San. AS

Rüzgarlibahçe Mahallesi Özalp
Çikmazı No:10, Beykoz/Istanbul
34805, Turkey
Tel: +90 216 6810000
Fax: +90 216 6815791
Web: www.aksa.com.tr
E-mail: aksa@aksa.com.tr

Aksa Power Generation manufactures gasoline, diesel, natural gas and marine generating sets range between 1 kVA to 3125 kVA as well as lighting towers and generator hardware with 3 manufacturing facilities in Istanbul (Turkey 20,000 m² of indoor space), Changzhou (China 120,000 m² of indoor space) and Louisiana (U.S.A., 10,000 m² of indoor space); and a trade center in Rotterdam-Dordrecht (The Netherlands 2000 m² of indoor space) has become a leader and pioneer within the sector. Aksa Power Generation exports to 173 countries 70% of its products and is among the top five global firms of the sector with 19 offices and 4 representative located in Asia, Europe, Africa and America.

Agents:

Algeria - EURL AKSA Générateurs Algérie
Ghana - AKSA POWER GENERATION (GHANA)
Kenya - AKSA POWER GENERATION (KENYA)
South Africa - AKSA POWER GENERATION (SOUTH AFRICA)
Sudan - AKSA POWER GENERATION (SUDAN)

Altaaqa Global Energy Services

Dubai World Central, Dubai, UAE
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Web: www.altaaqaqglobal.com
E-mail: info@altaaqaqglobal.com

Altaaqa Global Energy Services is a pioneering international energy services business providing cost-effective integrated power solutions, expert project consultancy and advisory services, and flexible contractual and project financing arrangements (including Build-Own-Operate-Transfer) to a diverse range of industry sectors, including mining, oil & gas, manufacturing, cement, utilities and process industries.

Agents:

South Africa - Altaaqa Global Energy Services

Ansaldo Energia Group

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8, Genova, 16152, Italy
Tel: +39 010 6551
Web: www.ansaldoenergia.com
E-mail: info@ansaldoenergia.com

Agents:

Algeria - Ansaldo Energia ALGERIA
Nigeria - Ansaldo Energia Nigeria
South Africa - Ansaldo Energia South Africa
Tunisia - Ansaldo Energia TUNISIA

Atlas Copco Power and Flow Division

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Muel (Zaragoza), 50450, Spain
Tel: +34 976145432
Fax: +34 976145431
Web: www.atlascopco.com
E-mail: export@atlascopco.com

Atlas Copco Power and Flow Division designs, manufactures and markets a wide range of mobile and energy-efficient generators, light towers and pumps. The products are used in all range of industries including construction, industrial, mining and rental. Divisional headquarters are located in Spain. Product development and manufacturing units are located in Europe, Asia, South America and North America.

Ausonia S.r.l.

Via Favara, 452, Z.I., Marsala (TP)
91025, Italy
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E-mail: ausonia@ausonia.net

Since 1932, we design, produce and offer a wide range of AC gensets up to 3000 kVA, available in different configurations (Open-sets, Soundproofed canopies or shelters, Mobile sets on trailers, No-Break Power Systems, Gas gensets, Cogeneration power plants, etc.). Within our power products portfolio, we also include customized solutions for very critical applications (Oil & Gas, Mining, Defense, Telecom), as well as Hybrid Gensets and High Efficiency DC Energy Solutions. OPEX model also available.

Balton CP Ltd.

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WD25 8HU, United Kingdom
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Web: www.baltoncp.com
E-mail: tk@baltoncp.com

Balton CP Ltd. Group, through its local subsidiaries in Sub-Saharan Africa, supply, install and maintain a comprehensive range of power generators from 5kVA to 2000kVA with Perkins Engines. Also included in our range are lighting towers, UPS/Voltage regulators and hybrid power generation units for the telecom industry. Solar Energy solutions and off-grid power solutions.

Agents:

Ghana - Dizengoff Ghana Ltd.
Rwanda - Balton Rwanda Ltd.
Uganda - Balton (U) Ltd.

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Fax: +49 40 3281122
Web: www.c-woermann.com
E-mail: info@c-woermann.de

Technical supplier for industrial machinery, workshop equipment and services, handling equipment, construction machines and agricultural equipment, forestry equipment, generators, spare parts.

Agents:

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Ghana - C. Woermann (Ghana) Ltd.
Nigeria - C. Woermann (Nigeria) Ltd.

Caterpillar Electric Power



Web: www.cat.com/demand_cat
E-mail: Electric_Power@cat.com

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COELMO spa



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Fax: +39 081 8039724
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Coelmo is one of the oldest European manufacturers of industrial and marine generators from 3kVA up to 4000kVA. Based in Italy, with a large stock of Generating Sets available to be shipped overnight to any destination in the world. Company profile, products and models are available online at www.coelmo.it

Crestchic Loadbanks



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Burton on Trent
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United Kingdom
Tel: +44 1283 531645
Fax: +44 1283 510103
Web: www.crestchicloadbanks.com
E-mail: sales@crestchic.co.uk

Crestchic design and manufacture AC & DC loadbanks and transformers for safely and accurately commissioning and maintaining power systems; including diesel generators, gas turbines and UPS. Our loadbanks are used for testing AC systems and are available in packages up to 150MW, at voltages from 380V to 36kV, 50/60Hz.

Cummins Southern Africa

114 Howick Avenue
Waterfall City
South Africa
2090
Tel: +27 11 451 3400
Web: www.stamford-avk.com

Cummins Generator Technologies designs and manufactures premium quality alternators up to 11,000kVA under the STAMFORD and AvK brands. Internationally renowned for built-in quality, its alternators set the standard for ruggedness, reliability and versatility. The company has several manufacturing facilities with superior customer support across the world.

Agents:

South Africa - Cummins South Africa

Deep Sea Electronics Ltd

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Tel: +44 1723 890099
Web: www.deepseaelectronics.com
E-mail: sales@deepseaelectronics.com
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Web: www.deutz.co.za
E-mail: info@deutz.co.za
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Doosan Portable Power (DPP)



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Level 18, ffile 1802, Dubai
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Tel: +971 4 2767206
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Web: www.doosanportablepower.eu
E-mail: gaby.rhayem@doosan.com
DPP is a leading manufacturer of portable Compressors, Generators and Mobile Lighting Systems for the African market.

Endcape Generators



Interpower House, Pickering
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Web: www.endcape.com
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Web: www.forestcitygenerators.com
E-mail: forestcity@compuserve.com
Supplier of diesel generator sets from 7.5kVA to 2700kVA with Perkins, Volvo and Cummins engines coupled to Mecc-Alte, or Leroy Somer alternators, soundproof canopies, control panels and automatic transfer switch (ATS) panels and all associated OEM spare parts.

Genmac S.r.l.

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Tel: +39 0522 222311
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Web: www.genmac.it
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Web: www.greenpowergen.com
E-mail: giovanni@greenpowergen.com
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• Lighting towers
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Hatz Diesel South Africa

52 Lake Road
Longmeadow North
Longmeadow Business Estate Ext 7
Edenvale, Postnet Suite 22
Private Bag X10010
Edenvale, 1610
Johannesburg, South Africa
Tel: +27 11 574-0900
Fax: +27 11 574-0939
Web: www.hatz.co.za
E-mail: engines@hatz.co.za
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E-mail: irem@irem.it
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Agents:

Kenya - Specialised Power Systems Ltd. (Kenya) - IREM S.p.A

IVECO

Iveco S.p.A., Via Puglia 35
Turin, 10156, Italy
Web: www.iveco.com/Pages/Iveco-brands.html
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Web: www.jcb.com/en-gb/products/generators
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Fax: +33 2 38846266
Web: www.johndeere.com
E-mail: jdengine@johndeere.com
John Deere Power systems develops, manufactures and markets diesel engines for a large variety of generator sets, compressors, industrial and agricultural applications. John Deere is one of the very few engine manufacturers that doesn't make gen-sets, this makes us unbiased partners with gen-set OEMs, offering them a robust power generation line-up from 30 to 500 kVA.

Agents:

Egypt - Orascom Trading Co. SAE
Morocco - Societe de Realisations Mecaniques
Nigeria - Stag Engineering (Nigeria) Ltd.
South Africa - POWER02

Jubaili Bros

Jebel Ali Free Zone, UAE
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Fax: +971 4 8832053
Web: www.jubailibros.com
E-mail: jbdubai@jubailibros.com
Jubaili Bros with over 40 years of experience, is a leading provider of Power Solutions in the Middle East, Africa and Asia. Jubaili Bros serves its customers by offering high quality diesel generating sets through 10 countries with 3 manufacturing plants and 29 branches & service centres that are dedicated to customer satisfaction.

Agents:

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KOHLER-SDMO

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29228 BREST Cedex 2, France
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Fax: +33 2 98416307
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E-mail: sdmo@sdmo.com
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Linz Electric S.p.A



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37040
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Web: www.linzelectric.com
E-mail: info@linzelectric.com

Linz Electric S.p.A is specialised in the production of alternators from 1.7kVA up to 1500kVA and rotating welders up to 500 amps. The main focus of Linz Electric is the customer's satisfaction through the top product quality, quick and complete service.

Lovato Electric S.p.A.

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Fax: +39 035 4282200
Web: www.lovatoelectric.com
E-mail: info@lovatoelectric.com

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MAN Energy Solutions SE

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86153
Germany

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Fax: +49 821 3223382
Web: www.man-es.com
E-mail: info@man-es.com

MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.

MB Crusher



Via Astico
30/A - Fara Vicentino (VI)
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Tel: +390445308148
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Web: www.mbcruisher.com
E-mail: info@mbcrusher.com

Italian company MB Crusher manufactures attachments for excavator and loaders for the recovery and recycling of inert waste at low cost and with minimal environmental impact. MB Crusher units make it easy to complete the recycling cycle directly on site, simplifying the operations of crushing, screening and handling of materials.

Mecc Alte International S.A.S.

Ze La Gagnerie
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Web: www.meccalte.com
E-mail: info@meccalte.fr

Mecc Alte design and build high performing alternator solutions for low, medium and high voltage power classes for standby and prime power applications. With manufacturing in Italy, the UK, China and India, their network of factories is supported by wholly-owned subsidiaries across the globe who specialise locally in the sales, distribution and aftersales for all Mecc Alte products. Combining independent thinking with agile supply and committed service, it delivers next generation products with intelligent capabilities for OEMS looking for greater efficiency and reliability.

Agents:

South Africa - Sub Sahara Power Pty

MTU Africa (Pty) Ltd.

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Fax: +27 21 5511970
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E-mail: info@ps.rolls-royce.com

MTU systems power the largest yachts, the strongest tugboats and the biggest land vehicles and provide energy for the world's most important mission-critical applications. Through advanced solutions such as microgrids, we integrate renewable energies and manage the power needs of our customers.

Perkins Engines Company Limited

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PHENIX Technologies, Inc.

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Tel: +1 301 7468118
Fax: +1 301 8955570
Web: www.phenixtech.com
E-mail: info@phenixtech.com

PHENIX Technologies designs and manufactures high voltage, high current, high power electrical testing equipment for testing cables, circuit breakers, generators, GIS/switchgear, insulation materials, motors, reclosers, transformers, utility worker's rubber protective gear. PHENIX Technologies offers a wide range of testing solutions, 40+ years of experience, and is ISO9001 quality compliant.

SAB, Standard Aggregatebau Evers GmbH & Co. KG

Oststrasse 11, 22844 Norderstedt
Germany
Tel: +49(0)40/522501117
Fax: +49(0)40/522501144
Web: www.generatingset.com
E-mail: info@generatingset.com

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SIEMENS ENERGY ENGINES

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Fax: +34 94 3865210
Web:
www.siemens-energy.com/gas-engines
E-mail:
engines.pgdr.energy@siemens.com

Siemens develops engines in its Power and Gas division business, Siemens Engine Business and is a leading international technology provider in both liquid and gas fuel engines for a wide range of applications and sectors of activity. The range of power offered by the SEB portfolio ranges from 150 to 2065 kW for gas

Teksan Generator

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Ansaldo Energia's success story in Tunisia

Ansaldo Energia's presence in Tunisia dates back to 1994, with the construction of the 2X170 MW Rades thermoelectric power station.

Borj El Amri/Mornaguia thermoelectric power plant in Tunisia.



Image Credit: Ansaldo Energia

Over the years, Ansaldo Energia successfully completed the 424MW Single-shaft Combined Cycle Power Plants of Sousse C (contract signed on 15/11/2010) and Sousse D (contract signed on 01/31/2013) in the Sidi Abdel-Hamid region in Tunisia.

To ensure the best availability of their power plants, they also operate long-term maintenance contracts after construction. They carry out such maintenance activity, to the satisfaction of Société Tunisienne de l'Électricité et du Gaz, (STEG), at two power stations in Sousse and at the power station in Ghannouch. Finally, they are also involved in the scheduled maintenance at Rades B power plant.

Ansaldo Energia consolidated its historical presence in Tunisia with the completion and entry into service of the first unit of Borj El Amri/Mornaguia thermoelectric power plant. In 2018, STEG awarded Ansaldo Energia a turnkey Engineering, Procurement and Construction (EPC) contract to build

a gas-fired open cycle thermoelectric power plant, rated 625MW, as well as a Long Term Service Agreement (LTSA) covering maintenance and service work, for the Mornaguia power plant, located south-west of Tunis.

The plant is equipped with two AE94.3A gas turbines, two

generators and auxiliary systems, all rotating machines, all of which are manufactured at Ansaldo Energia's Genoa production facility.

Plant construction

Several months went by from the bid presentation stage to the contract signing, which happened on 25 April, 2018 and came into force on 31 July of the same year. Immediately they started work: the initial implementation phase was fast-tracked because of the urgent need to deliver the power required to satisfy the energy demand in Tunisia. According to the agreements signed in 2018 with customer STEG, 300MW of power would be available before summer

“ We're particularly proud to have completed such an incredible project, which has shown us clearly what we are capable of.”

FRANCESCO ITALIANO, ANSALDO ENERGIA BRANCH MANAGER, TUNISIA

2019, completing the first unit of the power plant in record time. It was an ambitious challenge because the extensive civil works required excavations and backfills. Extreme weather events added additional complications in the race against time: three episodes of flooding, including one that put 80% of the power plant site under water, caused a 25-day delay to work. After the first flood, Ansaldo Energia built provisional defenses that saved the site from subsequent flooding in the autumn of 2018.

Thanks to the commitment and technical expertise of people involved in both erection and start-up stages, the target date was maintained, and the plant became officially operational on 13 June 2019. A special ceremony, attended by Tunisian authorities, marked the occasion. During the summer of 2019, electricity consumption peaked at a record of 4,250MW and Ansaldo Energia made a fundamental contribution to meeting this demand.

To build the plant, the onsite team of Italian and Tunisian engineers worked for 10 months jointly with STEG and local partners. The second half of the project schedule has been defined by the Covid-19 pandemic and its impact on the economy and healthcare sector.

Since the beginning of 2020, Ansaldo Energia took all the precautions needed to preserve their employees' health and, at the same time, guaranteed the operational continuity necessary to support the priority activities of electricity production in Tunisia.

The main measures adopted, concerned the use of all individual PPE, such as masks, gloves and special overalls. They upgraded hygiene measures by sanitising workspaces, introducing the use of hand sanitising gel and carrying out information campaigns to raise staff awareness on the matter.

However, they had to significantly reduce the number of staff. Construction activities of Mornaguia power plant were temporarily suspended, reducing personnel by about 500 units.



Borj El Amri/Mornaguia thermoelectric power plant.

Image Credit: Ansaldo Energia

Then, activities were gradually resumed, thus reintegrating personnel on site in the second half of 2020, in full compliance with the required precautions and provisions set by local authorities.

During the confinement period imposed from March to May 2020, Ansaldo Energia still obtained authorisation to continue working constantly on priority activities to ensure the production of electricity and meet national needs. The whole power plant was expected to produce 625MW of power for the summer 2020. On 26 June 2020, they signed the contract for Industrial Operation and on 10 November 2020, they signed the Provisional Acceptance Certificate (PAC), in full compliance with the contractual deadlines.

Logistics

The shipment of the first AE94.3A gas turbine was a historic event for Ansaldo Energia, because it was the first company to use the new dock in Genoa Cornigliano, where the final assembly facility for large gas turbines is located. The load headed to Tunisia on board the BBC Moonstone, operated by specialist company, BBC Chartering, consisted of a gas turbine weighing 338 tons and a 254-ton generator. The generator loading operation was made even more difficult for Ansaldo Energia because of the situation in the city after the collapse of the Morandi bridge (a motorway bridge that linked the

eastern part of the city with the industrial areas to the west), with exceptional transport carried out in partnership with Fagioli just a few days after the tragic event.

The logistics in Tunisia was also an ongoing challenge. Ansaldo Energia, together with STEG and the local authorities, had to arrange six exceptional transport operations for gas turbines, generators and transformers, which arrived at the port of Biserte Menzel Bourguiba and were transported to the site on 88-metre long, 32-axe trailers. The turbine alone, including the girder bridge, weighed a total of 554 tons. At an average speed of 5km/h, the convoys travelled a distance of round 80km on two consecutive nights, passing through several Tunisian villages and infrastructural works, including the El Batan dam bridge, built in 1690, which together with the neighbouring buildings is classified as a historic monument and protected by the Infrastructure and Culture Ministries.

Awards

Of all the acknowledgements received by the company for this challenging project, the most important was the Oscar for the "Best Institutional Collaboration". It was awarded to Ansaldo Energia on 21 September, 2019 during the Italian Business Oscar 2019 ceremony, which was organised by the Tunisian-Italian Chamber of Commerce and Industry in collaboration with the Italian

Embassy in Tunis. The event was aimed at rewarding and promoting the value of Italian entrepreneurship in Tunisia and consolidating the economic relations between the two countries.

Testimonial

The achievement of this goal and the thanks received from their client and the local authorities made all their efforts worthwhile over the last year, working as an integrated team together with STEG and local partners.

"The fact that we were able to maintain our 2018 commitment towards our customer STEG and the thanks we received, repaid us for all the efforts we have constantly made during the project's execution over the last two years," said Francesco Italiano, Ansaldo Energia Branch Manager, in Tunisia. "We worked together as an integrated team with STEG and local partners. We proved to fully understand the importance of achieving the objective and were wholly aware of the needs of both Tunisia and our customer. We didn't spare any effort to complete the Mornaguia project in record time, while ensuring the highest quality standards and full compliance with the technical requirements. Our commitment and determination overcame the difficulties we faced on a daily basis, and we are particularly proud to have completed such incredible project, which has shown us clearly what we are capable of." ■

Volvo CE launches EC75D compact excavator in Africa and the Middle East

Volvo Construction Equipment (Volvo CE) has launched the EC75D compact excavator in Africa and the Middle East, offering class-leading digging capacity, stability, serviceability and operator comfort.

The undercarriage of the seven-ton EC75D is wider and longer than those of its competitors, which ensures excellent stability and lifting capacity, together with high ground clearance and an extensive working range. Thanks to its larger size, the excavator can be used with a bigger bucket than similar machines in the same class, helping to increase productivity.

The boom and arm are made from high strength steel for maximum durability and uptime, and are fixed to the superstructure at the side of the cab for improved stability and visibility of the work area. The superior attractive force of the Volvo EC75D allows it to climb steep gradients with ease and travel over rough terrain. If specified with an optional dozer blade, backfilling and landscaping are also made easy. Meanwhile, the balance between the torque and swing speed permits fast and precise placement of the attachment, even when working on a slope.

The industry-leading Volvo cab offers operators a commanding view of the work area, combined with precise controls that together promote a high degree of safety on the jobsite. For added safety, an alarm sounds to warn bystanders when the machine moves. The spacious and comfortable cab features easy-to-access controls, an efficient climate control system and vibration and noise isolation. A large I-ECU monitor clearly presents machine information and puts the operator firmly in control. The operator and service technician can make quick visual and diagnostic checks, increasing uptime and productivity further.

When it comes to servicing, checks and maintenance are easy and quick. The machine features grouped service points and simple access to the engine compartment via the engine hood, which can be opened fully. The front step provides easy access to the main hydraulic check points. Tools and a grease gun can be stored inside a large toolbox located on the right front side of the machine. The hydraulic oil level can be seen from inside the cab.

For further information, please visit: www.volvoce.com



The EC75D compact excavator is now available in Africa and the Middle East.

Image Credit: Volvo Construction Equipment

METSO OUTOTEC LAUNCHES NEW CRUSHER AND SCREEN

Metso Outotec is adding two new products to its Nordtrack mobile crushing and screening range – the Nordtrack S2.5 mobile screen and the 1908 mobile impact crusher.

The Nordtrack S2.5 mobile screen is a small size, versatile scalping screen designed for small job sites and a variety of applications. With a compact and light-weight structure, a highly efficient two-deck screen and a wide selection of different screening media, it is the perfect solution for construction contractors with frequent changes in site locations or simply as a rental unit.

The second addition to the range is the Nordtrack 1908 mobile impact crusher. Its design is optimised for smaller-sized material reduction job sites, and it accepts different kinds of feed material – from asphalt recycling to concrete crushing, as well as traditional rock crushing. The same base model with an integrated screen on the chassis, the Nordtrack 1908S, was introduced earlier, and has been one of the best-selling Nordtrack units, especially in Europe.

“I am very pleased to say that the Nordtrack range has been extremely well received by our customers,” said Vesa Tuloisela, who heads the Nordtrack product offering at Metso Outotec. “It has proven to be a flexible solution meeting different requirements. Nordtrack sales have been developing very well despite the pandemic; in fact, we have exceeded sales targets in some areas.

However, we are always listening carefully to customer feedback. These two new products represent a concrete outcome of those discussions.”

“We want to grow our recycling customer base, offer attractive solutions for the rental business and for construction contractors globally,” she added.

The products, which were launched in the Nordtrack Liveroom, are available globally through Metso Outotec and distributors.

METITO TO BUILD AGRI WASTEWATER PLANT

Metito has won the design, supply, construction, operation and maintenance of El-Hammam agricultural wastewater treatment plant in a joint venture with Hassan Allam, The Arab Contractors and Orascom Construction.

The wastewater treatment plant has a capacity of six million cu/m per day, making it the largest of its type in the world, and the treated water will irrigate up to 500,000 feddans west of the Nile Delta area. Its delivery capacity will be achieved by collecting and transporting agricultural drainage water from the north of the Nile Delta to the plant through a 120km long course.

This project is part of the government’s strategy to expand Egypt’s agricultural area and develop the Western Desert. It is also expected to have a positive social and economic impact, including the development of new agricultural and population communities.

► BRIEFS



Image Credit: Adobe Stock

The centre will include a running track, among other facilities.

OlympAfrica Centre planned

The National Olympic Committee of Kenya (NOC-K) is set to build a multi-purpose OlympAfrica Centre in Nairobi, the first of its kind in the country. OlympAfrica has committed seed funding of US\$350,000 for the project.

The centre will include an indoor gym, running track, football pitch, swimming pool and tennis, basketball, volleyball and handball courts, as well as a restaurant, hostels, health centre and spectator stands.



Image credit: Adobe Stock

The railway line will run from Port Harcourt to Maiduguri.

New railway line for Nigeria

Muhammed Buhari, President of Nigeria, has virtually launched a US\$3.2bn project to reconstruct the 1,443km Port Harcourt-Maiduguri railway line from the south to the northeast of the country, along with new branch lines. The project also includes the construction of a railway industrial park in Port Harcourt and the development of the Bonny Deepsea Port on Bonny Island. A loan from Chinese financiers is funding 85% of the project costs.

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Building the way ahead

For decades, there has been a lack of financial investment into African transport infrastructure, such as roads, bridges and railways, but will the creation of a new infrastructure fund be the solution? Samantha Payne reports.

The continent suffers an annual infrastructure financing deficit of US\$60bn-US\$90bn, reported the African Union recently. In the words of Raila Odinga, the AU's high representative for infrastructure, in a recent interview with Reuters, "Africa is financially starved as far as the need for infrastructure development is concerned."

To rectify this, the AU has decided to create an infrastructure fund for roads, railways and power plants, financed by sovereign wealth funds, insurance and retirement funds across multiple countries in Africa. This is welcome news when there is declining donor support and huge debt pressures on domestic balance sheets.

The demand for infrastructure has never been so urgent to ensure the successful implementation of the African Continental Free Trade Area (AfCFTA), which is similar to a customs union like the EU.

"This infrastructure is urgent for the realisation of the AfCFTA, otherwise it is just going to remain on paper," Odinga added.

Road developments

In a step towards greater road infrastructure to promote economic development, many African countries have recently celebrated the inauguration of new roads and interchanges.

In December 2020, Ethiopian Prime Minister Abiy Ahmed and Kenyan President Uhuru Kenyatta inaugurated the Moyale One-Stop Border Post (OSBP) to boost trade between the two countries. According to press reports, Kenyatta said, "We want to see Moyale becoming the Dubai of this whole region."

At the same time, both presidents inaugurated a 500km stretch of highway, connecting the cities of



Image Credit: Adobe Stock

There is a US\$60bn-US\$90bn financing gap for infrastructure in Africa.

Nairobi and Addis Ababa.

Over in Uganda, the Yumbe-Manibe road in the Yumbe District has been given a US\$37mn upgrade by the government of Japan.

"This contribution has been made to upgrade 23.6km of the Yumbe-Manibe road in Yumbe District, where the condition of the road is bad and hampers transportation of goods and people," said Japanese Ambassador to Uganda, Fukuzawa Hidenoto, according to a report in Uganda's Daily Monitor.

Other bridges and feeder roads will also be built and improved as part of the national road project in refugee-hosting areas of the West Nile sub-region. The aim is to develop socio-economic infrastructure and promote smooth transportation.

In Tanzania, the Ubungo interchange has just been built. The multi-lane flyover is expected to reduce congestion, time and transport costs of moving goods to the Dar es Salaam harbour. The project was carried out by the China Civil Engineering Construction Corporation (CCECC).

Investing in roads and bridges is at the top of Nigeria's economic sustainability plan, which, in turn, will promote growth and jobs.

Deloitte's *African Construction Trends 2020* report, highlights the importance of one of the government's key projects: the Public Works and Road Construction Programme for urban and rural roads, prioritising the use of local materials, such as cement, granite and limestone, thereby reducing

costs of importing materials such as bitumen and asphalt.

The government has also recently deployed its fourth Sukuk issuance to fund the transportation, health, agriculture and education sectors, highlighting the prevalent role Islamic Finance still plays in the economic development of the country.

However, there are still major road projects in Nigeria, including Sukuk-funded roads, which are being delayed due to issues of appropriation at the executive and legislative parts of the government, according to a report by Vanguard Media.

Minister of Finance, Budget and National Planning, Zainab Ahmed recommended that the government should finish one project at a time before embarking on the next one.

"I wish that we get to a point when we sit down as government and agree that let us select a few projects, finish them in 2020, and then in 2021, we select the next. So that on a geopolitical basis, those selections are done as a collective process," she was quoted as saying to the media organisation. ■

“Africa is financially starved as far as the need for infrastructure development is concerned.”

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Bobcat offers largest loader portfolio in the world

The last year has been momentous for Bobcat, with a number of announcements resulting in the company now offering the largest loader portfolio of any manufacturer not only in Africa but also worldwide. As well as expanding the company's loader product portfolio, these developments have strengthened the company's position as the world leader in compact equipment.

To recap, the Bobcat loader line-up in Africa already included Backhoe Loaders (BHL), Skid-Steer Loaders (SSL), Compact Track Loaders (CTL), Mini-Track Loaders (MTL) and Telescopic Loaders (TL). Bobcat has now extended the loader range for Africa, with a new line of Small Articulated Loaders (SALs), more of which will be featured in the May issue of African Review.

New Generation R-Series B730 Backhoe Loader

Bobcat entered the backhoe loader market over four years ago and quickly gained market share throughout the continent, with the first generation of Bobcat machines achieving leading positions in several countries in Africa.

Last September, Bobcat launched the new generation R-Series B730 backhoe loader, replacing the company's first generation B700, B730 and B750 models, for sale in Africa. Available in a choice of different configurations for diverse applications, the new R-Series B730 backhoe loader is ideal for use in construction, utility, rental, roadworks, demolition, excavation, waste, recycling, landscaping, agriculture and many other industries.

The new R-Series B730 backhoe loader is powered by the best-in-class Perkins 1104C-44T 100 HP engine with a maximum torque of 408 Nm, delivering more than enough muscle for the most demanding applications. Along with the hydraulics, the B730 can therefore deliver all the power needed to finish work in a shorter time.

Since the launch, Bobcat has received orders for



The R-Series B730 backhoe loader.

Image Credit: Bobcat

the new R-Series B730 from all around Africa, with the first units recently delivered in South Africa.

Strengthening leadership of the compact loader market in Africa

Bobcat has also launched a new version of the company's market-leading S450 radius lift path skid-steer loader, introducing Bobcat's bold new branding scheme for the first time in Africa. The new Bobcat S450 skid-steer loader is designed to further strengthen its unrivalled number one position in its own class and in the African compact loader market overall.

The S450 continues Bobcat's better-built reputation with a range of features to minimise maintenance and to protect the machine, such as

machine shutdown protection, self-diagnostics and battery run-down protection. In addition, the S450, like all Bobcat skid-steer loaders, utilises the industry's only maintenance-free chaincase, which further reduces maintenance and provides even more peace of mind.

Nicolas Dumont, district sales manager for Africa at Doosan Bobcat EMEA, said, "The new S450 introduces a fresh look for our market-leading loaders in Africa. As well as being the most popular skid-steer loader in the region, the S450 is far and away the most reliable and as a result has the highest resale value on the market. A used S450 with 4 years/4000 h on the clock will typically sell for 60% of the original price, representing an unbeatable return on investment for our customers." ■

SMT OFFERS SDLG'S B877F BACKHOE LOADERS TO ITS MARKETS

In 2020, SMT Algeria delivered a fleet of SDLG's B877F backhoe loader to a customer specialised in public works in the city of Tiaret.

The backhoe loader is available in a range of configurations to best suit customer's needs. It is a versatile machine whether operating the excavator or loader, SDLG says.

It has a powerful 70kW Yuchai engine supplying the hydraulic system with enough power for a reliable and consistent job.



The delivery of SDLG's B877F backhoe loaders in Algeria.

Image Credit: SMT Africa

Its 55° steering angle provides excellent maneuverability when working in confined areas.

It has a spacious air-conditioned cab, with excellent visibility and enough space to choose the different excavator and loader modes.

It also comes with a range of attachments including buckets of different sizes, mechanical quick-couple flip-over forks and hydraulic breakers.

FRITSCH UNVEILS AUTOMATIC REPRODUCIBLE SIEVE STACK TENSIONING SYSTEM

The universal sieve clamping system TorqueMaster enables automatic and reproducible tensioning of the sieve stack on the sieve shaker during dry sieving with test sieves 200mm/8" diameter. Although the tensioning has a great influence on the sieving result, it is relatively undefined in conventional systems. With the electric and easy-to-use sieve stack tensioning system TorqueMaster, users can deliver a constant and reproducible clamping forces of 1 kN to the sieve stack, enabling the calibration of the sieve tensioning – essential when using a sieve shaker as an instrument for inspection according to ISO 9001.

The sieve stack tensioning system TorqueMaster consisting of clamping lid plexiglas for test sieves 200mm/8" dia and electrical tool 100-240 V/1, 50-60 Hz and can be combined with any sieve shaker.

Standardised for integration into a quality management system according to ISO 9001

The high performance Vibratory Sieve Shaker ANALYSETTE 3 PRO offers everything users need for fast determination of quantitative particle size distribution in the laboratory. As a shaking



Sieve Shaker ANALYSETTE 3 PRO with reproducible sieve stack tensioning system TorqueMaster.

sieve system the electromagnetic drive oscillates the sieve stack into regulated vertical oscillations – the ideal solution for sieving sample quantities up to 2kg and a measurement range from 20 µm to 63mm.

The ANALYSETTE 3 PRO is suitable for quality control of incoming and outgoing products, offers user-friendly operation and is low-noise,

robust and long-lasting.

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Your advantage: Guaranteed constant amplitude, meaning precisely reproducible sieving results in accordance with DIN 66165-1 and the possibility to calibrate and validate ANALYSETTE 3 PRO as an inspection instrument for measuring and testing equipment, according to ISO 9001.

Especially clever: All functions can be controlled via a RS232 interface. The interface and AUTOSIEVE allow inspection of the sieving process via an online comparison of the set and actual amplitude and therefore, an Auto-Validation of the sieving process.

By utilising the supplied software AUTOSIEVE all important functions such as amplitude, sieving time, intermittent mode and type of sieving can be entered comfortably via the computer or the clearly organised, ergonomic soft-touchpad with digital display.

For more information visit www.fritsch-international.com/sieveshakers

EARTHMAX: MADE IN BKT

BKT offers off-highway tyres which equip machinery operating in specialist environments in agricultural, earthmoving, construction, mining, industrial, port, gardening and ATV sectors. Whatever the application, the machinery or type of soil, BKT offers more than 2,700 products.

Among the numerous BKT tyres, the EARTHMAX radial tyre range for the construction, quarrying and mining world stands out.

EARTHMAX is specifically designed to facilitate better ground load distribution for dump trucks, wheel loaders, dozers, graders and some multi-purpose vehicles.

Over the years, the EARTHMAX product range has continued to grow to meet even the most specific requests and now the range includes 23 different tyre models, which are available in their turn in numerous versions and mixes that can easily get around on the toughest terrains,



Each EARTHMAX line comes in different sizes.

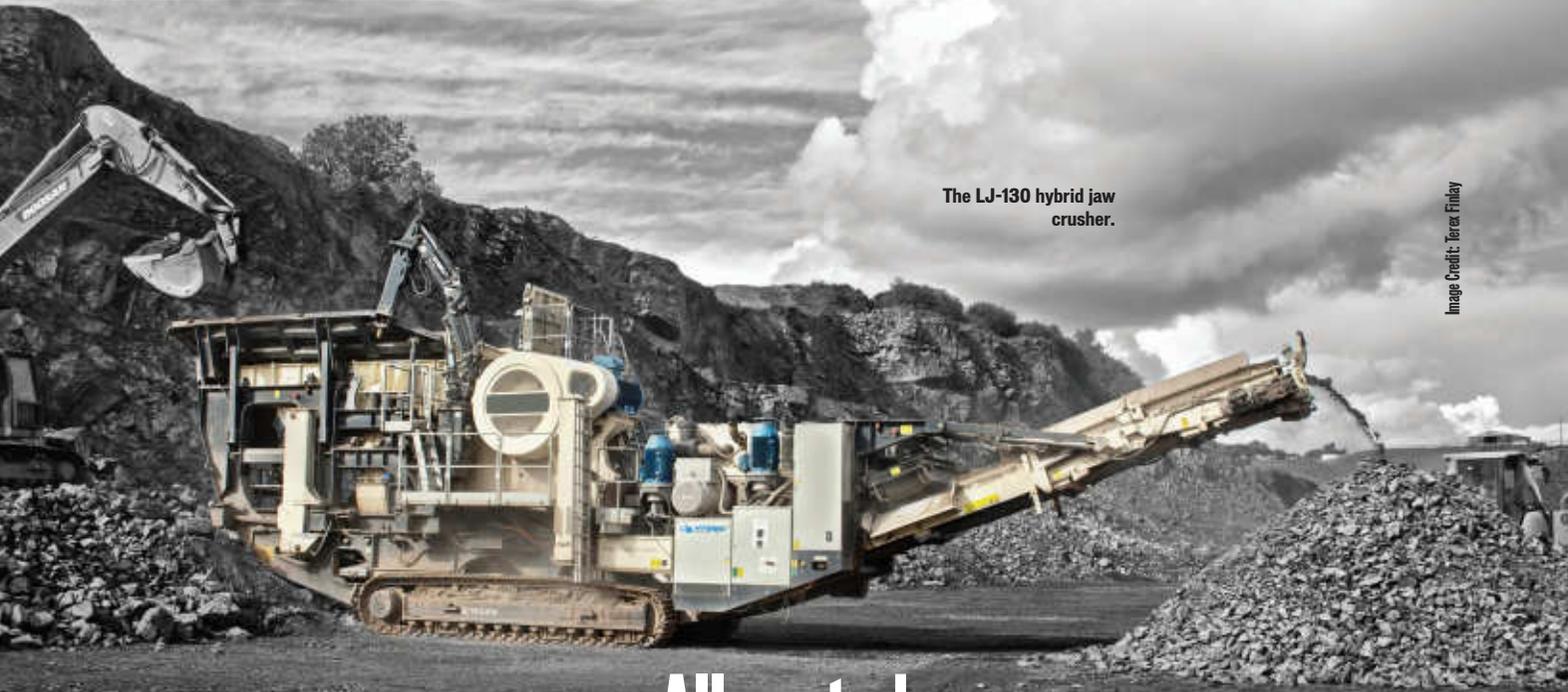
such as large worksites, quarries and mines.

All these models share an all steel structure, which provides

greater resistance on the casing and against any aggression, such as, for example, tears and penetration by foreign bodies, and better load distribution on the ground. These are important features when faced with obstacles on the ground which could expose the tyres to serious risks of puncture or damage to the casing.

Each EARTHMAX line is available in so many different sizes to meet the widest possible range of needs. In addition, EARTHMAX products are made with latest-generation BKT mixes which guarantee excellent product performance and duration and are available in different versions.

Among the latest innovations in this range there is a new product, the Giant: EARTHMAX SR 468, which has been designed for rigid dump trucks. So far, the prototype has been made in the 40.00 R 57 size and is in the test stage. It is the biggest tyre ever made by BKT.



The LJ-130 hybrid jaw crusher.

Image Credit: Terex Finlay

All sorted

The global market for mobile crushers and screeners was estimated at US\$2.3bn in the year 2020, and is expected to reach US\$3.2bn by 2027. Here are the latest crushing and screening machines taking the market by storm.

Terex Finlay has just launched a LJ-130 hybrid jaw crusher, the largest mobile crusher in their range, for large-scale quarry and mining operations. The machine can operate as a standalone primary crusher or integrated into a mobile or static crushing and screening plant.

It incorporates a Terex 1300 x 1000mm (51" x 39") high performance electrically driven single toggle jaw chamber. The large chamber inlet opening has been engineered to accept the coarsest feed, including large boulders in the feed material and the chamber cavity depth of 2.3m (7' 5"), provides high reduction ratios and maintains an efficient material flow through the plant.

The machine features a 13.5m³ (17.64yd³) hopper with an integrated pan feeder and heavy duty VGF feeder with automatic power monitoring to regulate and automatically increase or decrease material flow to prevent overload and ensure continuous choke feeding of the jaw chamber for optimum and uninterrupted productivity. The machine can be

powered either by the integrated 500kVA genset powerpack configuration or connected to an external power source. Both power options provide operators with significant power, servicing and maintenance cost savings in direct comparison to a diesel/ hydraulic powered plant.

When operated using the onboard genset the integrated alternator generates sufficient energy that can be used to power downstream screening plants or stockpile conveyors further improving overall fuel consumption and efficiencies of production trains.

"The LJ-130 hybrid jaw crusher has been developed to provide a robust and powerful mobile solution for operators seeking a highly productive machine for the most demanding and coarsest hard rock and ore applications. The Terex 5139 crusher is the largest jaw chamber we put on our tracked plants in terms of depth, width and length. The large cavity volume enables more material to be processed along the full length of the chamber, maximising productivity even with the coarsest

unprepared material at the primary crushing stage. For ease of transportation the machine has been engineered with a compact operational footprint and can be split down into two transportable components without the need for heavy crane assistance on site for setting up, tearing down and transporting between locations. The LJ-130 jaw crusher is perfectly complemented by our existing C-1554 cone crusher and large capacity screens, such as our 984 horizontal and 696 inclined screener models for operators looking for large capacity mobile crushing and screening train solutions." said Alan Witherow, Terex Finlay, lead technical support and product manager.

Crushing in Morocco

Since February 2020, the R1100D impactor with screen box and return belt has been creating valuable aggregate for CSB Mobile S.A.R.L. The easy handling and good performance of the crusher as well as the possibility of processing various materials were key criteria for the purchase.

The main benefit of the hydrostatic

drive is the constant crushing performance due to the continuous adjustment of the hydrostatic pressure to the power requirements of the crusher. This leads to a noticeably reduced diesel consumption per tonne of production. An additional benefit of having a crusher with hydrostatic drive is reduced wear costs in comparison to a conventional clutch system.

Another reason why CSB Mobile chose this Rockster crusher was the patented DUPLEX-system. The R1100D is DUPLEX-able and can be quickly modified from an impact to a jaw crusher and vice versa. This allows the customer to achieve maximum machine utilisation and rapidly adapt to different job requirements. Besides concrete and asphalt, CSB Mobile also crushes gravel, sand, and different types of hard rock.

Sand quarry

To crush heavily compressed sand in a sand quarry was a different task for a Rockster impactor. The sand is excavated with a vibro-ripper from an extremely strong quarry wall. "This ripper produces solid lumps of

sand. Then the excavator loads lumps into the crusher with a 5mm screen, and we get great sand,” says CSB Mobile owner Lurii Lisnichenko. With the screening system mounted onto the crusher, it is easy to produce an exact defined final grain size in one pass.

Modular approach

Moving with the times to support fast-paced project rollout, Pilot Crushtec’s full range of modular comminution equipment offers a quicker route to production, with eliminating prolonged timelines usually required to develop bespoke designs.

Instead, this technology and approach allows a complete plant layout and process simulation flow to be completed within a few days, according to Francois Marais, director sales and marketing at Pilot Crushtec.

“While there has been much said about the modular concept in comminution, its real potential is not often achieved,” says Marais. “Pilot Crushtec has, for the past 15 years, designed and manufactured a truly modular offering of comminution equipment for project requirements as small as 150 tph, right up to 2,000 tph.”

The company’s Pilot Modular range combines world-class Metso crushers and screens with Pilot Crushtec’s frames, conveyors, feeder bins, hoppers and accessories. The offering provides customers with an easy-to-understand selection of either single units or complete comminution modules. These can be incorporated into new or existing comminution plants, with plants up to 500 tph in some cases supplied within two to four weeks of commercial finalisation. In a first for the sector, these solutions come



Image Credit: Rockster

The final product produced by the Rockster R1100D is well shaped cubic grain of high quality, as was certified by laboratory.

with five-year equipment protection services (EPS) warranty on the Metso crushing and screening components.

He also highlights the forward-looking energy strategy incorporated in the range, with the company’s line of Metso dual-powered mobile crushers and screens allowing an alternative power source to diesel generators. Already, a dual-powered

solution has been supplied to a South African manganese operation, which will in future power the machines from its planned solar farm. Marais says these dual-powered machines will be offered on a much larger scale, to ensure that cost savings can be realised by companies with the vision to invest in renewable energy sources.

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“This is a strategically important contribution to the sectors in which we operate, particularly in South Africa where energy supply has become unreliable and expensive,” he says. “The dual powered approach opens the door not only to lowering the user’s energy costs but to reducing their carbon footprint.”

Energy efficiency is an important focus, with a move toward direct-drive diesel engines or electric drives to reduce the long-term inefficiencies of hydraulic drives. High efficiency electric motors have generally become a standard on the Pilot Crushtec range, as has the use of variable speed drives (VSDs) with automated electronic load control wherever possible.

The Pilot Modular range includes comminution equipment for primary crushing through to quaternary crushing, as well as screening, materials handling and stockpiling.

Cone crushers

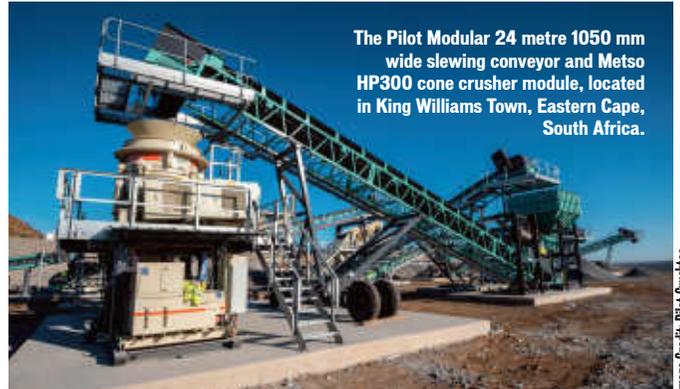
Cedarapids, a Terex Minerals Processing Systems (MPS) brand, has introduced a new range of cone crushers to their cone line-up. The new TG Series will be a Bronze Bushing Spider Bearing Cone complementing their current market

leading Cedarapids MVPX Series (Screw Type Cone) and the Cedarapids TC Series (Floating Bowl Cone). With this addition, they say they offer the most comprehensive cone range in the industry.

Depending on the type of material being processed and desired output in terms of tonnage or specification, customers could select any one of the three styles of cones from one single OEM, Terex MPS.

The Floating Bowl Cone, which is represented by the Terex TC Series, is ideally suited to most mining and quarrying applications, especially catering to the contractor clientele, from a secondary down to a quaternary position. The cone design performs consistently in a secondary position with an unscalped all-in-feed. This helps promote excellent shaped products through attrition crushing.

The Screw Bowl Cone, which is represented by the Terex MVP Series offering, is also ideally suited to mining and quarrying applications, but due to the fact that this style of cone offers the large tramp iron stroke clearance, it would be the better choice when looking for a cone in a recycle type application where there is the possibility of smaller metal contaminants. This



The Pilot Modular 24 metre 1050 mm wide slewing conveyor and Metso HP300 cone crusher module, located in King Williams Town, Eastern Cape, South Africa.

Image Credit: Pilot Crushtec

type of cone is also well suited to high tonnage applications, and for those where large reduction ratios are required, fine/sand products are to be made, or that require strict product shape and grading requirements. The Screw Bowl Cones can work in secondary, tertiary and quaternary positions.

The Floating Shaft (Spider Bearing) Cone, represented by the newly launched Cedarapids TG Cones, is also ideal for mining & quarrying applications, with similar characteristics found on the Floating Bowl cone. The large feed secondary TGS version of the new cone, which can accept a feed size up to 75% bigger than its Fine version, allows it the unique ability to be positioned in a control fed primary position for

sand and gravel applications.

The Spider Bearing range consists of four models for the aggregate and recycle industries; the TG120 (120hp), TG220 (220hp), TG320 (320hp) and TG420 (420hp). Each model is available in TG (Tertiary) and TGS (Secondary) versions. ■



The TG220 cone crusher is ideal for the aggregate and recycling industries.

Image Credit: Terex MPS

60 seconds with MB Crusher on the success of their bucket units

African Review: What’s the outlook for the crusher bucket market in 2021 compared to 2020 from MB Crusher’s perspective?

MB Crusher: 2020 was a strange year, but it has allowed operators and companies to evaluate and embrace new technology and ideas, as well as quickly change operational methods. We have helped those who had supply chain issues. If material could not be delivered on time or at all,

with an MB Crusher attachment they were able to create their own aggregates. We’ve created a solid base for ourselves to flourish in 2021.

AR: Does MB Crusher agree that mobile crushing is growing strong and fast and the company is helping to meet this demand?

MBC: Totally....Mobile crushing is the way forward, not only it simplify logistics but it cuts costs. To take material to be processed on an external plant involves huge planning, and the project costs are higher. Although not just crushing, the need for mobile processing, in general, is rising as well as screening and selecting onsite.

We are keeping up with the demand as MB Crusher continues to listen to our customers’ needs. We appreciate the feedback we receive from them, and respond by providing units that will help their operations to work better, faster and in total security.

AR: Would you say there is a real appetite for customers to purchase your solutions, compared to installing big stationary processing plants?

MBC: At the end of the day businesses want to make money. This is what the MB Crusher units provide: a solution that guarantees value for money.



The BF 80.3 recycling rocks at Conakry Port.

Image Credit: MB Crushers

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TOMRA Sorting Mining launches TOMRA ACT user interface

TOMRA has introduced the TOMRA ACT user interface, together with a new image processing pipeline and additional process data for cloud platform TOMRA Insight, enabling improvements in the overall sorting process for greater productivity and profitability.

The new TOMRA ACT graphical user interface (UI) heralds a fundamental change in the way customers interact with their machines, making it extremely easy to control the work flow in their sorting process with simple, intuitive, touch gestures and actions on the screen.

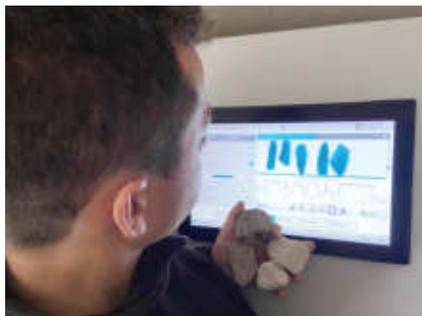
TOMRA ACT aims to provide sorting information and real-time process data at a glance through easy-to-understand graphics. With this clear information, the operator is able to better monitor the sorting process and make fast adjustments at any time. The quick feedback on the machine performance and throughput enables them to optimise the process, maximising productivity and efficiency.

Ines Hartwig, TOMRA product manager, explained, "With the new interface, customers interact with their sorters in a much more intuitive way and they have better guidance on how to improve the overall handling of the sorters. As a result, they will be able to improve the productivity of their sorting plant and the profitability of their mining operation."

TOMRA is introducing the new UI on all its current X-Ray Transmission (XRT) sorters, and is planning to extend it to other machines in its offering at a later stage. Upgrade packages to update previous models of its XRT sorters will also become available.

The new image processing pipeline analyses the data sent by the sorter's sensors and cameras. This solution provides TOMRA with even more flexibility to adjust and customise the image calculations, according to the application and the customer's specific requirements in order to achieve the best possible sorting results.

The new enhanced image processing solution also collects detailed process data, such as information on particle size distribution of the feed, belt occupancy which gives useful insights on feed tonnages, or data relating to the health of the sorter. All these statistics are fed to TOMRA Insight, adding to the process information it has already received.



Sorter optimisation tailored to customer's needs.

Image Credit: TOMRA Sorting Mining

T.M.Q.'S SECOND ROCKSTER CRUSHER IN BURKINA FASO

Based in Ouagadougou, Tropic Mining & Quarry (T.M.Q.), have been using a Rockster R900 impact crusher since 2008 and so, to significantly increase limestone processing, purchased a R1100S closed circuit impactor in autumn 2020.

Long-term customer satisfaction and high performance were two key factors, which persuaded T.M.Q. they said, to buy another Rockster crusher in Burkina Faso. The long-standing business relationship between Austrian manufacturer Rockster and T.M.Q. has been sincere and consistent from the very start.

Rockster impactors are mainly used to crush dolomite limestone, which is later used for production of cement.

In 2008, the first Rockster crusher was delivered to T.M.Q. who were enthusiastic about their purchase from the start. "The R900 was exactly the right crusher to start the processing business. It is very easy to use and maintain, and the performance is excellent," said managing director Al Hassane Sienou, who specialises in mining and quarrying.

Since then the business has grown and the capacities have had to be increased.

T.M.Q. decided to stay with Rockster and ordered another crusher from the Austrian manufacturer. "We are convinced in the robustness and longevity of these impact crushers and have therefore this time invested in a larger impactor from Rockster. Our R1100S also has a screening system, which consists of a screen box and return belt so we can produce a perfectly defined final product with an excellent quality. We produce about 300 tph of fine limestone 0/32 mm and can sell it to cement manufacturers very well," added Sienou.

Using their most recent fleet addition, T.M.Q. plans to produce 600,000 tons of final material per year.

COAL TO PROVIDE 59% OF SOUTH AFRICA'S ELECTRICITY GENERATING CAPACITY BY 2030

The South African coal mining sector, which employs more than 92,000 people, produced 254.3 million tons of coal, in 2019 and exported 78.6 million tons, with the combined value of local sales and exports totalling US\$9.34bn. In the latest Integrated Resource Plan, coal will be used to provide 59% of South Africa's electricity generating capacity by 2030.

The impact of the coronavirus pandemic on coal supply and demand, low economic growth in export markets, and growing international opposition to coal mining and coal-fired power generation because of environmental concerns, are some of the challenges faced by the coal mining sector. Over 70% of South Africa's primary energy needs, from electricity generation to steel production were provided by coal in 2019.

► BRIEFS

Steinert sets up testing plant at Navachab gold mine, Namibia



The gold mine is owned by private equity firm QKR.

Magnetic and sensor sorting solutions company Steinert has set up a testing plant at Navachab gold mine in Namibia - owned by private equity firm QKR. The test facility is available for testing in beneficiation and preconcentration processes. Located in Namibia and onsite, John Knowlds, Steinert's area sales manager for southern Africa, is happy to assist miners to test what sorting can do for their processes in the onsite test plant.

Deccan Gold granted three prospecting licences through subsidiary company in Tanzania



Tanzania is boosting its mining and mineral sector.

Deccan Gold Mines was granted three prospecting licences (PLs) via its subsidiary company DG Tanzania, by The mining authorities in Tanzania granted Deccan Gold Mines, via its subsidiary company, DG Tanzania, three prospecting licences (PLs), with another two PL applications expected to be granted as well. DG Tanzania submitted five PL applications and were filed at the Mines Office, Commissioner of Minerals and Mines, Dodoma.

Botswana Diamonds signs cooperation agreement to fast-track diamond exploration

Botswana Diamonds (BOD), the AIM and BSE listed diamond explorer, has entered into a cooperation agreement to fund exploration of its prospecting licence assets in Botswana with Diamexstrat Botswana Pty (DESB), which in turn has an alliance agreement with Burgundy Diamond Mines.

Under the agreement, the parties have agreed to utilise BOD's diamond exploration database, which it acquired in 2020 as part of the acquisition of Sekaka Diamonds Exploration Pty. The database contains the results of work undertaken by Sekaka's former owner, Petra Diamonds, since 2005, and includes airborne data, including the Falcon survey, and ground magnetic, including gravity and EM, in addition to heavy mineral sampling.

BOD's prospecting assets comprise the recently acquired Sekaka Diamonds Exploration Pty (Sekaka) database and prospecting licenses, as well as the prospecting licences held by BOD's subsidiary, Sunland Minerals Pty (Sunland Minerals).

DESB and its partner, Burgundy Diamond Mines can earn up to a 70% interest in BOD's Botswana Sunland Minerals and Sekaka's prospecting licences. BOD can earn a 15% interest in prospecting licences held by DESB (and partners) on the first US\$1.5m spent on exploration by DESB where BOD's database assists in the discovery of a primary kimberlite.

Image Credit: Adobe Stock



Botswana is one of the world's best addresses for diamond exploration.

On third-party prospecting licences where targets are identified in BOD's database, a joint earn-in will be negotiated at the time. For new Botswana prospecting licences, DESB and its partner, Burgundy Diamond Mines can earn up to 70%.

John Teeling, chairman, said, "Botswana is one of the world's best addresses for diamond exploration. The combination of a fresh approach and advanced technology, supported by a recovering diamond market, presents us with significant opportunities."

"This is a comprehensive agreement. On our ground, DESB (and partners) will get 51% of each licence by discovering a diamondiferous kimberlite rising, to 70% by completing a bankable feasibility study. Where our database is used to find targets on ground held by the partners, there is a free carry for BOD of 15% on the first US\$1.5m spent on exploration."

SHANTA GOLD ANNOUNCES FINAL RESULTS FOR ITS EAST AFRICAN ASSETS

Shanta Gold, the East Africa-focused gold producer, has announced its audited final results for the year ended 31 December, 2020 for its East African assets, including the New Luika Gold Mine and the Singida Project in Tanzania and the West Kenya Project in Kenya.

The company has defined ore resources at the New Luika Gold Mine and the Singida Project and holds exploration licences, covering approximately 1,100 sq km in the country. Shanta Gold also owns the West Kenya Project, with defined ore resources of 1.2 Mt grading 12.6 g/t and holds approximately 1,121 sq km wholly-owned exploration licenses, and 40 sq km partially owned licences in the country.

Shanta's flagship New Luika Gold Mine commenced production in 2012 and produced 82,978 ounces in 2020. The company has been listed on London's AIM market and has 1,048 million shares in issue.

As the Covid-19 pandemic spread rapidly across the globe, Shanta implemented safety protocols across its operations while increasing critical inventories at New Luika and forging partnerships to prevent disruption to the operations. As a result, New Luika had another steady year of production.

Booyco expands its coal footprint as Level 9 looms

Coal mines were among the first customers of proximity detection system (PDS) specialist Booyco Electronics, and the company continues to grow its footprint in this sector as mines work towards Level 9 compliance.

According to Booyco Electronics CEO Anton Lourens, the scale of recent orders from underground collieries and opencast operations are testament to the company's leadership in the sector.

"We support an extensive population of our proximity detection equipment on trackless mining machines (TMMs) in coal mines, and expect to see enthusiastic take-up of our new-generation Booyco CXS product," said Lourens. He highlighted that the customer base includes not only the Mpumalanga coalfields, but also those in KwaZulu-Natal province – supported by the company's network of branches including Witbank and Richards Bay.

Regulations currently demand that any electrically powered TMM in an underground mine must be equipped with a PDS, but many coal operations have a combination of diesel

Image Credit: Booyco



Booyco Electronics continues to grow its footprint in the coal mining sector as mines work towards Level 9 compliance.

and electric units. He emphasises that the regulatory framework will soon enforce Level 9 requirements – with more advanced collision avoidance capability – for both diesel and electric TMMs.

"We are working closely with many OEMs and mining customers on aligning and testing our respective equipment for Level 9 compliance," he continued. "It should be remembered, however, that the industry still has considerable

work to do on the application of PDS technology to surface diesel TMMs, which pose a range of technical challenges."

An active participant in the mining industry's Earth Moving Equipment Safety Round Table (EMESRT), Booyco Electronics collaborates extensively with stakeholders to support mines' safety and compliance efforts.

"Coal mines have a key role to play in the testing and application of collision avoidance systems, as the industry upgrades to ever-more effective safety protocols," said Lourens. "The Booyco CXS consolidates all we have learnt in our 15 years in business, taking that vital step from a warning system to a fully-fledged collision avoidance system."

He highlights that the Booyco CXS retains the intrinsically safe technology of previous generations, making it more cost effective and generally easier to manage. "The common alternative to intrinsically safe equipment is for suppliers to add a flameproof enclosure to house the PDS, which tends to be heavy and impractical," he added.

Shift towards sustainable mining accelerates

Nigel Beck, head of sustainable finance, and Mark Buncombe, head of mining and metals at Standard Bank Group talk about the actions miners are taking to meet their Environmental, Social, and Governance (ESG) targets.

The mining industry's shift towards a greener, more sustainable and more community-oriented business model is accelerating as mining groups seek to maintain their social licence to operate and position themselves for long-term growth. The continued focus on climate change and on the wellbeing of local communities, particularly in light of the Covid-19 crisis, has meant that many mining companies are responding by accelerating the reduction of carbon emissions and addressing social issues.

Anglo American, for instance, said in mid-2020 it was pushing ahead with plans to convert its mine haul trucks from diesel to hydrogen power. The group is launching a pilot project at its open-pit Mogalakwena operation in South Africa. It has already taken delivery of its first fuel-cell truck and intends to produce 'green' hydrogen onsite using solar energy.

BHP Billiton said early in 2021 it had invested in a company that is seeking to manufacture steel in a far more environmental way than is the norm.

With the industry now acutely aware of the need to operate sustainably, Standard Bank has seen a significant rise in interest in sustainable finance products, which are used to fund improvements in a firm's environmental, social and corporate governance (ESG) performance.

Targeting high-growth industries

The rise of electric vehicles, driven by consumer preferences for more environmentally friendly products, is expected to boost demand for minerals used in batteries and electric motors, such as lithium, graphite, copper, cobalt and nickel. Platinum group metals (PGMs) and rare earth minerals are also expected to benefit, with the growing hydrogen economy providing an additional boost. As the mining industry positions itself for this shift, it will play an important role in the transition to a more sustainable global economy. With 70% to 80% of the world's PGM resources sitting in South Africa's 'Bushveld Complex' and in Zimbabwe, southern Africa will have a massive role to play in the decarbonisation of mining and the global economy.

In addition to this, mining houses are taking steps to minimise their own carbon footprints and better manage scarce water resources. The largest



Nigel Beck.

Image Credit: Standard Bank Group

concern that the industry has its ability to meet the increased demand for certain commodities in a sustainable way.

The adoption of new energy sources used in extraction and production, such as hydrogen and solar, is already in full swing. The deep investments in cleaner technologies often result in efficiency gains, which is good for business. Regulators in South Africa are making it easier for mining houses to produce and procure their own energy. Given the country's ongoing electricity supply issues, alongside its vast solar resources and advancements in technology, solar solutions are coming to the fore. And equipment manufacturers are positioning themselves to fulfil the needs of the industry.

“Southern Africa will have a massive role to play in the decarbonisation of mining and the global economy.”

Upweighting societal and governance considerations

Miners are also seeking to play a greater role in the communities in which they operate. As such, they are considering funding instruments such as social bonds to facilitate the development of employee housing and local infrastructure.

Social upliftment has become an important consideration in South Africa's mining industry, given the country's inequality and developmental challenges, which have been exacerbated by the Covid-19 pandemic.

The industry has already made significant strides in terms of improving safety records. And mining groups have leveraged their success with managing infectious diseases, such as TB and Ebola to effectively curb the spread of Covid-19, both within their workforces and the communities in which they operate.

In countries where healthcare systems have struggled to cope with the pandemic, mining houses have played a particularly large role in safeguarding communities. This has the benefit of promoting their own long-term sustainability.

Sustainable finance solutions – which tie the cost of funding to improvements in ESG performance – will play an important role in helping Africa's mining industry to adapt and attract capital from an investor base that is becoming increasingly focused on sustainability.

Bankers, investors and other financiers are focusing more closely on the corporate governance pillar amid the pandemic, since supply chain disruptions and other challenges are testing management teams. Firms with stronger governance structures tend to manage these situations better, thereby reducing repayment risk and ultimately their funding costs.

Investors have become increasingly sophisticated in how they allocate capital. Boards and management teams are therefore spending considerable time on improving their ESG credentials, with a view to being re-rated by markets.

However, mining groups are prioritising different ESG pillars according to the risk profile of the commodities they produce and the geographies in which they operate. Ultimately, their efforts should be aligned to the various stakeholder groups that they work alongside. ■

Considering mine security

Security is a vital part in the operations of any successful mining venture. Valuable commodities, expensive machinery and mineworkers themselves, all have to be protected. Tim Guest reports.

Africa is a major supplier of precious metals and diamonds to the world. South Africa, for example, is the biggest platinum producer and a major gold supplier. The mining industry, however, faces some of the most challenging security issues of any sector, including perimeter intrusion, illegal mining, theft, harsh conditions, large areas, and high costs to install comprehensive security solutions. In deep mines, security equipment must operate in temperatures beyond 45°C, making its use impractical in many cases; mine tunnels can also be hundreds of kilometres long, which hinders use of such equipment. As well as theft from the outside, in diamond and gold mines, theft by employees is also very real.

What's at stake

Mine operators face major challenges to keep their high-value assets and extractions secure. Take Lucara Diamond Corp, for example, currently undertaking a US\$514mn underground expansion of the Karowe diamond mine in Botswana, known for its production of large, high-quality Type IIA diamonds. Lucara aims to recover an estimated 5.05 million carats from underground resources by 2040. Such investment and potential is not limited to Lucara, with De Beers, Petra and other mining operators like Rio Tinto, all operating in conditions that make security at their mines top priority. Specialist security companies like ADT, G4S, Fawcett Security, GardaWorld, Saladin Security in countries across Africa, offer specialist services in this regard, consulting with clients and designing security strategies to suit specific mines. While many elements of mine security overlap, no matter



The bulk sample plant/scrubbing plant at Petra Diamonds' Finsch mine in South Africa.

Image Credit: Petra Diamonds

the commodity extracted, others are very specific, e.g. the smuggling of diamonds off campus requires specialist procedures and security equipment, such as advanced body-scanning x-ray machines, for stolen gems smuggled inside the body cavities of employees leaving facilities after a day's work to be detected. In South Africa's gold mining sector, it is estimated 30% of the gold stolen never reaches the operators' bottom lines.

Security implementation

Implementing mine security is far more complex than can be described here, but in general and firstly, full security and risk assessments are conducted by operators with mine security companies. Using experienced consultancies ensures plans incorporate the right level of security, not too much, not too little, with the right number of people, the right amount of the right kind of equipment – at the right cost. Perimeter security to prevent

intrusion at mines, for example, is typically one of the first concerns, and while perimeter fencing is important, it is often impractical due to acreage and the difficult landscape of mine sites. This is where the latest day/night, infra-red, thermal imaging video surveillance solutions, in place of fencing, offer a robust layer of security that can integrate with other mining security systems to pinpoint potential risks for operators, in real time. Video surveillance is a proactive solution that can help avert crime and limit damage. Trained monitoring operators watching over a mine site can spot trouble before it happens and act, either calling onsite management and security, warning suspects over a loudspeaker, and/or calling the police. Access control of registered vehicles and drivers can also be handled using video surveillance; open-pit mines typically emphasise access control, while underground mines emphasise safety and people

location management.

Any mine security strategy must recognise at the outset that some employees will pose a threat to security. Employees know an operation's weaknesses, and can exploit them. Background checks should be undertaken and not seen as a sign of distrust, merely a standard operating procedure. Employee photo identification badges and entry points and procedures are crucial security issues, with clear guidelines also needed for visitors and clients; in some scenarios access control systems with biometrics, turnstiles, metal detectors, x-ray machines, time and attendance management and background checks, will help minimise theft.

A final thought is that some mines are located in dangerous regions, making the use of specialist mining security personnel, from companies like ISOG, essential to help protect against a range of extreme threats, including terrorist attacks. ■



The decree appears to be a step forward in enhancing investor confidence in the Malian mining sector.

Image Credit: Adobe Stock

Prospecting in Mali: A new mining decree

Charles Bourgeois, partner of business law firm, Bourgeois Itzkovitch AARPI, talks on how the government of Mali, has adopted a decree, supplementing the new mining code, to harmonise its legislation with other west African jurisdictions.

What are the key developments of this decree for mining companies prospecting in Mali?

i) An open and transparent cadastral system

Having understood the importance of making geological and permitting data available to potential exploration companies, the Malian government has implemented a detailed legal framework for its mining cadastral system.

By way of example, the decree provides that the mining authority must register in the cadastre all information relating to (i) any applications made for mining titles, (ii) any decisions made by the mining authority regarding any mining titles, (iii) any information regarding

any farm-in or purchase agreement, and (iv) any administrative, civil or judicial decision toward mining title holders.

Compared to the lack of provisions in the 2012 mining code, this appears to be a very good step forward in enhancing investor confidence in the Malian mining sector.

Although a physical copy of the mining land registry can now be

obtained by any person, it is to be regretted that the Malian government did not go even further and set up an electronic cadastral system enabling investors to obtain information from abroad.

ii) Acceleration of the period of review of applications for exploratory permits

Addressing another major concern of miners, the government of Mali

has tried to reduce the period of time for the review of license applications, notably applications for exploratory permits.

By way of example, an exploratory permit will be granted, renewed or extended by the Minister of Mines within a period of two months from the date when a complete application was filed.

The same will apply in the event of the purchase of an exploratory permit: the Minister of Mines has a period of two months within which to approve or refuse the transaction.

iii) Know Your Customer (KYC) with regard to persons applying for an exploratory permit

In order to obtain an exploratory

“ This appears to be a very good step forward in enhancing investor confidence in the Malian mining sector.”

permit in Mali, miners should be aware that the decree has extended the KYC requirements to include them.

In fact, in keeping with classical restrictions related to tax fraud, money laundering and corruption, the decree also provides that companies must not have any criminal record with regard to environmental damage or social and safety infringements.

These restrictions apply even if an applicant for an exploratory permit has been convicted for a criminal offence that is subject to appeal.

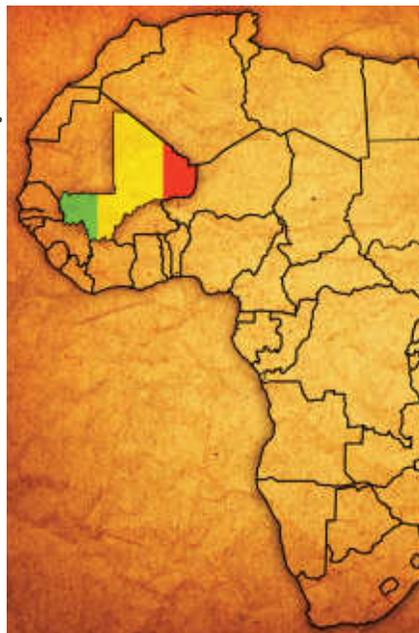
iv) A mining agreement to be negotiated with the state at the exploration stage

The decree requires all applicants for exploratory permits to negotiate with the Ministry of Mines the terms and conditions of a mining agreement that will set forth the parties' rights and obligations during both the exploration stage and the operating stage.

What is at stake?

Essentially the capacity of investors to negotiate with the mining authority the terms and conditions of an agreement that will govern the relations with the Malian government during the exploration and operation stages.

A model of this mining agreement is to be published by the government but we do not yet know whether miners will be allowed to negotiate a substantial part of any such agreement, notably the provisions regarding tax incentives, or whether the majority of the terms will simply be imposed upon miners.



The Malian government has tried to reduce the period of time for the review of license applications.

“ When the risk is at its highest, prospectors will be free to conduct their operations without strong local content requirements.”

v) Lack of local content requirements during the exploration stage

It is important to note that the decree does not stipulate any specific provisions regarding local procurement policies or local employment quotas during the exploration stage.

The only requirement for miners at this stage is to make an annual report to the mining authorities concerning the number of local staff and to “give preference to Mali personnel with equal qualifications”.

At a time when all African countries are willing to increase local content requirements in order to boost the economic benefits derived from their mining sector, the government of Mali is sending a message to the mining industry: when the risk is at its highest, prospectors will be free to conduct their operations without strong local content requirements.

vi) Exposure to liability after termination of the mining exploration activities

Finally, the decree provides interesting clarification regarding the extent of miners' exposure to liability after completion of the mining exploration activities.

In fact, the principle is that the miner will remain liable to the state and to third parties for any loss or damage resulting from a failure to comply with any applicable provisions during the exploration stage.

The list of potential claims after termination of mining exploration activities might appear interminable – for miners wishing to close operations and move on.

They could include damage to the environment, destruction of traditional sacred sites, social unrest and community health impacts related to the mining activities.

However, the decree seems to provide a way out of this conundrum, since holders of an exploration permit can avoid liability, if the mining title is assigned to another company and if the purchase agreement makes express and specific provision on this point. ■

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HIGH POWER GRUNDFOS CR PUMP HITS AFRICA

With the launch of the Grundfos XL CR 185 vertical stainless steel multi-stage pump, customers can achieve higher flow rates and delivery heads while still achieving optimal energy efficiency. The Grundfos XL CR 185 has wide application as a pressure booster in industry, mines and commercial buildings, as well as for water utilities requiring high pressure delivery.

“This extra-large addition to our well-known CR range pushes the limits of pumping capability,” said Niren Rohanlal, senior regional product and solutions manager-CBS Advanced Core & Systems – India, Middle East and Africa at Grundfos. The model’s maximum flow rate is 240 m³/h and it can generate pressures of up to 40 bar.

“The pump’s maximum head is a remarkable 400m, which is roughly the height of the Empire State Building in New York,” said Rohanlal. “To



Image Credit: Grundfos

A Grundfos CR 125-5 pump installed in a water boosting application at a wine farm.

reach these demanding heights, it can be fitted with an electric motor of up to 200kW in size.”

He highlighted that the design approach of this robust pump is based on reliability, quality and efficiency, aiming to ensure customers a significant cost saving in terms of energy consumption, maintenance and total cost of ownership.

“In today’s modern economy, the focus is on energy efficiency and lower carbon footprint,” he said. “We provide our own highly efficient Grundfos-branded motors up to 22kW, while the larger motors that we use with our pumps must be at least IE4 in terms of global efficiency ratings.”

An important advantage of the vertical orientation of this pump range is its reduced footprint. Where numerous pumps are employed in pump stations, this smaller footprint means that floor area can be made more compact.

HIGH FLEXIBILITY, LOWER COST WITH MOBILE PUMPHOUSE

Pumping slurry to tailings facilities requires a solution that can move as the dam expands to make room for additional tailings, making Weir Minerals Africa’s mobile pumphouse suitable for the purpose, it says.



Image Credit: Weir Minerals Africa

The Weir pumphouse can be used for mine dewatering and slurry transportation.

“A mobile pumphouse completely avoids the cost of any civil engineering for permanent on-site pump buildings,” said Marnus Koorts, pumps product manager, Weir Minerals Africa. “Instead, it is designed to be moved as required across the site, using its own specifically engineered, skid and jack-and-roll elements.”

Koorts said the offering is part of Weir Minerals Africa’s engineered-to-order (ETO) solutions, which also reduces the long term total cost of ownership. The three-point Warman Multiflo pump mounting system allows the base and skid to act independently. This minimises the risk of misalignment between the pump and motor shaft during operation and relocation. The unit incorporates an integral gland water supply system and a separate electronic house (E-house) for power control and remote communication.

West Coast miner Tronox Mineral Sands installs SlurrySucker for pond dredging

Following a successful one-week trial, heavy minerals company Tronox Mineral Sands took delivery of a SlurrySucker dredging unit from Integrated Pump Rental.

The SlurrySucker will remove sand from the process dams near the Tronox mining operation on South Africa’s West Coast. This installation enhances the safety and efficiency of the dredging process, which previously had to be carried out manually by a team of underwater divers.

“The pumping capacity of the dredging unit will ensure optimal operation of Tronox’s dams which need to be kept at the required storage volumes at all times,” said Ruaan Venter, rental development manager at Integrated Pump Rental.

The dredging unit will assist Tronox to regularly clean sediment from our process dams, reducing the risk of pump blockage or failure. This solution aims to provide rapid results on a cost-effective basis, while the remote operation raises safety levels.

To withstand the corrosive effects of salt water, the SlurrySucker has been equipped with a stainless steel casing as well as stainless steel components including wear plates and impellers.

The SlurrySucker dredging unit comprises a floating barge with an electric hoist operated from the side of the dam. This ensures a high level of safety with the barge being operated remotely, including the lifting and lowering of the pump. At Tronox, the SlurrySucker is designed to pump 150 cu/m per hour of sediment, with a solids content of 50%, back to the thickener in the plant.

“The electrically-driven unit also makes sure that there is no risk of contaminating the water in the dams with diesel or oil leakage,” Venter said.



Image Credit: Integrated Pump Rental

The SlurrySucker will remove sand from the process dams near the Tronox mining operation on South Africa’s West Coast.

TEREX LAUNCHES AQUAMIST DUST SUPPRESSION SYSTEM

Terex, a global manufacturer of lifting and materials processing solutions, has introduced ‘Aquamist by Terex’ – a dust suppression system that is now available across its materials processing brands: EvoQuip, Fuchs, Powerscreen, Terex Ecotec, Terex Finlay, Terex MPS and Terex Washing Systems.

The ‘Aquamist by Terex’ dust suppression system offers an improvement over conventional jets or water-sprays to manage the build-up of dust and better protect workers on jobsites by using a high capacity misting fan that produces finely divided water droplets in the size range 10-150 micron diameter. At this size, they easily combine themselves with dust particles of



Aquamist by Terex.

similar dimensions and precipitate them out of the air and, because water-mists “float” more than a conventional spray, they cover and envelop the dust cloud more effectively.

Paul Kearney, vice-president of parts and solutions for Terex Materials Processing, explained, “It is globally accepted now that airborne dust that is formed on jobsites can significantly contribute to respiratory illnesses. As increased legislation comes into place globally to mitigate this, more effective control of dust is needed. Our Aquamist system will better support worksite operations and strengthen our commitment to making the workplace a safe and healthy environment.”

Image Credit: Terex

CONCOR LEVERAGES GLOBAL STANDARDS TO LEAD IN MINING

Meeting international standards is not an end-goal but an essential step in continuously raising the performance bar, according to Concor Mining Services HSE and training manager, Neil Fourie.

With its quality, environmental management, and occupational health and safety management system certifications recently renewed, Concor has underpinned its world-class status, said Fourie.

“These standards represent the life blood of our business, as customers rely on our management processes to provide them with the highest quality of service,” he said. “Our certification in terms of ISO 45001:2018, ISO 9001:2015 and ISO 14001:2015 gives them the peace of mind that we operate a management system aligned to global best practice.”

He emphasised that a key element of the ISO



Good systems form the backbone for any mining services operator according to Concor.

standards is the principle of effective control and continuous improvement to company procedures and processes.

“Each year that we operate with these certifications in place, our management system

matures and improves,” he said. “This guides us into deeper levels of auditing, which in turn drives our efforts to become better at everything we do – including raising our productivity and compliance.”

Image Credit: Concor Construction

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SOMEVAM secures funding for 2nd CDE sand plant

SOMEVAM, a subsidiary of the Tunisian Sebri Group, a family-run quarrying business, has announced its plan to develop its second CDE wet processing solution for the production of high-specification silica sand products.



The new CDE silica sand wash plant will be the second SOMEVAM operating in Oueslatia.

Image Credit: CDE

With authorisation from the Central Bank of Tunisia, funding for the investment of a second wet processing plant was secured with the support of UK Export Finance, AF Capital, Apple Bank, and supported by the British Embassy in Tunis.

Sebri Group will work with its wet processing partner, CDE, to design and engineer the new plant, which will be located at SOMEVAM's quarry in Oueslatia, Tunisia.

Sebri Group has operated sand quarries in Oueslatia to serve the national construction market for the past two decades. At the SOMEVAM quarry it produces a range of sand and aggregate materials for the construction sector.

Its management team identified an opportunity to further diversify the business by expanding into the glass sands market to strengthen its commercial proposition in the

region, and in 2019, commissioned its first CDE solution at the site.

The state-of-the-art silica sand wash plant has the capacity to treat up to 200tph of sand, producing 100tph of silica glass sand for the glass industry, as well as a range of secondary products including fine silica sand for silica flour production, foundry sand, concrete sand and road base.

Investment in a second silica sand wash plant comes as SOMEVAM records significant interest in its future production output. The plant will produce silica sand, which has applications in paints, coatings and inks, adhesives and sealants,

pharmaceuticals, lighting and more as well as silica for flat glass applications such as windows, mirrors and flat glazing.

The glass industry accounts for more than a third of the total market for silica sand based on end-use, and market analysis projects a growth rate of 7.12% in the silica market over the forecast period 2019–2026, reaching US\$3bn by 2026. While North America has the largest market share, the Asia-Pacific region is anticipated to display the highest growth rate.

Commenting on the announcement, CDE's senior project

manager Bassem Idriss said, "We're very pleased to once again partner with Sebri Group on this exciting project that will significantly expand SOMEVAM's silica sand processing and production capacity. Its previous investment in CDE technology exemplifies our commitment to engineering excellence and is one of the most advanced plants of its kind.

"Sebri Group recognises that a superior product to meet the demands of the market requires an equally superior processing solution and as such, this investment will complement the existing CDE solution in Oueslatia to further strengthen its position and capitalise on growth opportunities in the glass sands market." ■

“ This investment will complement the existing CDE solution in Oueslatia.”

BASSEM IDRISSE, CDE'S SENIOR PROJECT MANAGER

For more information about CDE and its wet processing technologies, visit CDEGlobal.com

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