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AUGUST 2023

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"The Angolan Government anticipates economic growth of 3.5% between 2023 and 2027; that is driven by economic diversification."

Manuel Francisco Pedro, chairman of the board of directors of the Luanda-Bengo Special Economic Zone

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Cover picture: The Ségoula Mine in Côte d'Ivoire, which celebrated first gold pour in May 2023

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Cover Inset: Manuel Francisco Pedro, chairman of the board of directors of the Luanda-Bengo Special Economic Zone (ZEE)

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Editor's Note

Welcome to the August issue of African Review, equipping you with the relevant, required knowledge to thrive in the exciting world of African business.

The increasing global attention towards Africa continues to highlight the potential of a vast continent blessed with an ever-expanding youthful population, a wonderful foundation for renewable power generation and an abundance of mineral resources below its surface. In this context, and within this issue, we study Angola as Manuel Francisco Pedro, chairman of the board of directors of the Luanda-Bengo Special Economic Zone (ZEE), explores the country's aim to diversify its economy and the investment opportunities this is opening up (page 16).

For the continent to reach its potential, reliable power will be essential and uninterrupted power systems will undoubtedly play their part (page 21). As will hydropower, a view expressed by BII's Richard Charlton as he explains why his company is putting its faith in this trusted source of energy (page 22).

Amongst our construction section is an assessment of new air compressor innovations on the market (page 39), a look at the efforts being made to decarbonise concrete and cement (page 40), and our Construction & Mining Buyers' Guide (page 27).

Finally, our issue closes with a report on West Africa's blossoming mining sector (page 42), a dive into drilling demand and the companies ready to meet it (page 44), and glimpse at the golden graphite opportunity (page 46).

We hope you enjoy the issue, and be sure to check into our website and social media platforms for up-to-date information and opinions.

Robert Daniels, Editor

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The maritime sector has set its sights on achieving climate-friendly transportation, with a number of leading shipping companies spearheading the charge to net-zero operations.



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Uninterruptible power supply

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West Africa Mining

With gold production leading the way, the mining industry in West Africa is maturing rapidly, with a wave of new projects and investment following suit.

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Explosives

Worker safety is an ever-growing concern for Africa's mining community, making the need for danger-free detonation more urgent than ever.



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Škoda secures significant deal to modernise and maintain Egypt’s locomotive network

Škoda Group has agreed contracts worth more than €1bn (approx. US\$1.08bn) with Egyptian National Railways (ENR) to modernise and maintain at least 280 of the network’s electro-diesel locomotives.

The project, which marks Škoda Group’s foray into the African modernisation and maintenance market, is comprised of two contract agreements.

Primarily, the agreement sees the group overhaul ENR’s locomotives over a period of nine years.

The partnership’s second component is a full-service maintenance agreement, extending up to 15 years following the initial overhaul.

Škoda Group intends to conduct the bulk of the work in-country in support of localisation and job creation across Egypt. Along with the job creation and localisation missions, the contracts underscore the group’s emphasis on providing holistic full-service and modernisation to transit networks.

Didier Pflieger, CEO of Škoda Group, celebrated the agreements, commenting, “These contracts mark a historic milestone for Škoda Group. With our strong record of accomplishment in servicing and modernisation, we are uniquely positioned to deliver superior locomotive rehabilitation and overhaul services. Our aim is to use our skills and experience to build lasting relationships and make a long-term contribution to improving the quality of the rail sector in the Middle East and Africa.”

The initial phases of the project will see two prototype locomotives modernised at the Škoda Group’s production and service site in the Czech Republic. In gathering expertise from a prototype phase, Škoda will roll out the remainder of the modernisation, overhaul and maintenance in Egypt, with all staff members completing training on both the prototypes and on-site.

Škoda’s modernisation of the locomotives will see the drives and pneumatic parts overhauled, with braking systems and electric wiring comprehensively modernised. Driver’s cabs will be transformed with new control panels installed and the train control system will be assessed and modernised before a major design makeover to the locomotives.

“The success of being awarded with this project is further confirmation of our strategy of expanding into foreign markets,” Pflieger concluded.



Image Credit: ŠKODA GROUP

Two prototypes will be updated at Škoda’s Czech Republic site before the in-country project begins.

CABLE COALITION ANNOUNCES CONSTRUCTION KICK-OFF

Alcatel Submarine Networks, Elettra Tlc, Medusa and Orange have announced the beginning of construction on the Medusa Submarine Cable System.

The milestone kicks off the ambitious project that aims to boost connectivity across the Mediterranean and will establish crucial connectivity links between Morocco, Portugal, Spain, France, Algeria, Tunisia, Italy, Greece, Cyprus, and Egypt.

The subsystem, named Via Tunisia, is a key component of the Medua Cable, linking France and Tunisia. As earlier confirmed by Orange, the project is co-funded by the European Union under the Connecting Europe Facility programme.

Upon completion, the network will span a distance of over 8,700 km, cementing it as the Mediterranean Sea’s longest cable and enhancing North-South and East-West connectivity.

The construction contract has been awarded to Alcatel Submarine Networks and Elettra Tlc.

Built with state-of-the-art 24-pair fibre optic Open Cable technology, the Medusa system aims to reach a 20TB per second minimum capacity per fibre pair. Elettra Tlc will conduct survey operations, with equipment manufacturing and installation planned for 2024 and 2025. Orange will provide the landing infrastructure in France, Tunisia and Morocco.

Paul Gabla, chief sales and marketing officer of ASN, said, “The Medusa submarine cable system marks a major step in telecommunications infrastructure. ASN is honoured to be at the forefront of this ambitious project, which will bring high-speed Internet connectivity and seamless communication to the region, unlocking a world of opportunities for businesses, communities and individuals.”

GULF-TO-EUROPE PIPELINE NO LONGER PIPE DREAM

A joint study between RINA, the inspection, certification, consulting and engineering multinational, and AFRY, a European engineering, design and advisory specialist, suggests a Gulf-to-Europe, low-carbon hydrogen pipeline may be a transformative opportunity to unlock the Gulf’s potential.

The concept, a hydrogen pipeline connecting Qatar, Saudi Arabia, Egypt and Europe (via the Mediterranean Sea) has indicated feasibility in early assessment stages. Analysis suggests such a pipeline could transport 100TWh (approximately 2.5mn tonnes) annually. Holistically, the report indicates impressive potential to unlock the Gulf’s potential as a cost-effective source of low-carbon hydrogen for Europe and North Africa.

Andrea Bombardi, executive vice president at RINA, said, “Together with AFRY, we have identified a potential stable corridor to bring supply and demand together.”

Image Credit: Adobe Stock



Power capacity has already seen demand boost due to increasing temperatures.

MENA energy systems: a climate challenge

The International Energy Agency has suggested that the Middle East and North Africa can expect more serious challenges to its energy systems amidst the climate crisis. In the last 42 years, average temperatures have increased by 0.46°C per decade, over double the world’s average. Higher temperatures have already demanded increased electricity capacity for cooling, and power systems are expected to be stretched further across the Middle East and North Africa.

Image Credit: Brilliant Planet



The large-scale site will include an algae production facility.

Carbon capture collaboration

Brilliant Planet, the high-integrity, nature-based carbon capture specialist, has confirmed a partnership with WSP, led by its African Maritime division, to support the former’s large-scale modular carbon dioxide removal facility in Morocco.

WSP will develop the marine infrastructure associated the facility, principally on the algae production base, including seawater intake and outfall systems.

Alstom aims to bolster Morocco rail industry

Alstom, a manufacturer which operates in rail transport markets worldwide, has announced it will construct a second rail plant in Morocco which will make driving cabs for regional and underground railway trains.

Alstom Morocco has only recently announced the expansion of its plant in Fez which, in 2021, was also boosted with the construction of a second production line. The Fez site provides electrical wiring and Mitrac transformers.

The new site, which will be constructed through a significant investment from the company, will make driving cabs and is in-keeping with the group's commitment to developing the Moroccan rail ecosystem and building local rail expertise. It is expected that the new investment will create around 200 direct jobs between now and 2025.

Mehdi Sahel, managing director of Alstom Morocco, commented, "We are extremely proud to be building a new industrial site. This is a prime example of our strategy to design and develop a local ecosystem. I would like to thank all the teams for the remarkable job they have done over the last few months to make these projects a reality."

Mama Sougoufara, managing director of Alstom MENAT, added, "We are once again demonstrating our commitment to building a rail industrial base in Morocco; the Alstom Group has now decided to take its investments in Morocco a step further by creating a second site in Fez, to manufacture cabs for regional and underground railway trains.

"Thanks to the transfer of unique technology from our international sites we will be able to create a Moroccan rail centre with world-class expertise. We are an established local player and we have confidence in the future of Morocco."



The investment is expected to create around 200 direct jobs until 2025.

LAND ALLOCATED FOR 10GW WIND PROJECT

ACWA Power, a private water desalination company and energy transition leader, has signed a memorandum of understanding (MoU) with the New and Renewable Energy Authority (NREA) to assign land for a 10GW wind project in Egypt.

Approximately 3,000 sq m of land West of Sohag has been allocated for the project that is expected to generate around 50GWh of clean energy annually. This will provide electricity to around 11mn households and mitigate the impact of an estimated 25.5mn tonnes of carbon emissions each year. Moreover, it will provide the Egyptian economy with an expected US\$6.5bn savings in annual natural gas costs in addition to creating up to 120,000 job opportunities (in direct and indirect construction and in operation and maintenance once complete).

Mohamed Shaker Al-Marqabi, Egypt's Minister of Electricity and Renewable Energy, commented, "Egypt has adopted an ambitious programme to advance the electricity sector in various fields, which includes maximising the utilisation of new and renewable energy resources, encouraging investment in these fields to enable energy independence from fossil fuels, continuing to reduce carbon emissions, and increasing renewable energy capacity in the energy mix up to 42% by 2035.

"This focus also aligns with Egypt's Vision 2030 and the National Climate Strategy 2050 with a view to mitigating the impact of climate change challenges and achieving sustainable economic growth.

"We foresee that the positive contributions with financing institutions and development partners, as well as the comparative advantages of Egypt in terms of the availability of land, will show that Egypt has what it takes to produce renewable energy for domestic consumption and export."

TUNISIA TO PURSUE SCHOOL CONSTRUCTION

The European Investment Bank (EIB) has signed a financing agreement to provide EU€40mn (approx. US\$45mn) to Tunisia which will be used to construct 80 modern primary schools in Tunisian coastal towns and in central and southern areas of the country.

The new schools will be built in line with bioclimatic and energy-saving design principles such as the installation of solar panels. The EIB has suggested the announcement reflects its strong commitment to supporting the Tunisian Government in its efforts to ensure inclusive and equitable education.

Samir Saïed, Tunisian Minister of Economy and Planning, commented, "The financing signed for the Ministry of Education is part of the Tunisian Government's efforts to strengthen inclusive education and to reduce school dropouts. This project demonstrates Tunisia's willingness and commitment to ensuring a better future for its young people."

BRIEFS

Shell supplies Morocco with LNG

Image Credit: Arabia Stock

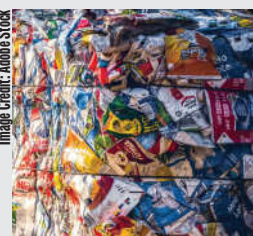


The LNG will be initially transported using a gas pipeline.

The Moroccan Energy Minister has announced that Shell will supply Morocco with an annual 0.5bn cubic metres of LNG to help water utility ONEE operate power stations in the North and East of the country. According to media reports, the LNG will be initially transported from Spanish ports using a gas pipeline that links the two countries, until Morocco builds its own LNG terminals.

Successful conversion of oil from plastics

Image Credit: Arabia Stock



The aim of the project is to create circular solutions for plastic waste.

Aramco, TotalEnergies and SABIC have successfully converted oil derived from plastic waste into ISCC+ certified circular polymers for the first time in the Middle East and North Africa. The plastic pyrolysis oil was processed at the SATORP refinery and was used as a feedstock by PETROKEMYA to produce circular polymers. Mohammed Y. Al Qahtani, Aramco's president of downstream, said, "This achievement illustrates the importance of the petrochemical sector in creating more sustainable products and solutions."

BMW group announces investment in South Africa's Rosslyn plant

Founded 50 years ago as the first BMW Group plant outside Germany, the BMW Group Plant Rosslyn site has been a stable constant in the company's worldwide production network ever since.

To mark this anniversary, Milan Nedeljković, member of the board of management of BMW AG for production and chairman of the board of management for BMW Group South Africa, announced the electrification of the plant.

He said, "From 2024, we will produce the BMW X3 in South Africa as a plug-in hybrid and export it to the world. To this end, the BMW Group is investing US\$110.3mn in the site over five years."

With this investment in electrification and digitalisation, the BMW Group is further underlining its commitment to South Africa forged over five decades in the country. This secures the future of BMW Group Plant Rosslyn, as well as the livelihoods of more than 20,000 people directly and indirectly employed at BMW Group South Africa's facilities and within its supply chain. Additionally, it underscores the BMW Group's role as a key player in the South African automotive industry's move towards a green economy.

Plant director, Niklas Fichtmüller, is responsible for ensuring the Rosslyn plant's readiness for the new product. "BMW Group South Africa prides itself on building communities, opportunities, and sustainable solutions. More than that – we are committed to transformation and our associates' skills development with the implementation of a plant-wide training programme for the new model. In addition, more than 300 BMW Group Plant Rosslyn associates will receive specialised training to support the production of the next-generation BMW X3 Plug-in hybrid vehicle," said Fichtmüller.

The BMW Group remains committed to the long-term development of South Africa. The company is electrifying another location in its production network following the global BMW iFACTORY masterplan for automotive production. This further drives the development of high-quality, intelligent and resource-efficient manufacturing, which is central to BMW Group Plant Rosslyn's strategic direction and ensures that highly-skilled jobs are retained.



The next generation of the BMW X3 will be produced as a plug-in hybrid from 2024.

100MW SOLAR PLANT AHEAD FOR O&L NEXENTURY

Upon recently receiving its generation license and export license from the Electricity Control Board and the Ministry of Mines and Energy, O&L Nexentury – a subsidiary of the Ohlthaver & List (O&L) Group – will commence with its investment in a 100MW solar photovoltaic (PV) plant located just outside of Windhoek.

With an investment of US\$55.5mn, the plant is planned to be connected to one of Nampower's largest substations. The electricity generated is intended to be used locally by industrial energy users such as mining companies, regional electricity distributors and Nampower as well as part of it being exported to the southern African power pool.

With Phase I of the solar plant to be running by mid-2024, Bernd Walbaum, managing director of O&L Nexentury, said, "This is a most exciting project we are embarking on as we expand clean energy supply in Namibia and beyond our borders. As part of our O&L Group Purpose, 'creating a future, enhancing life', this project promises to be a positive contribution to the generation of renewable energy in the country and speaks to our commitment to expanding clean and sustainable energy solutions."

This comes at a time where the German company of O&L Nexentury was granted all necessary permits and licenses to build Germany's largest floating solar PV plant of 15MW on a gravel lake in the central part of Germany.

As a vertically integrated developer of renewable energy projects, O&L Nexentury is active in Namibia, South Africa and Botswana as well as West Africa and Europe. It offers EPC and operation & maintenance services and has a pipeline of projects including developing solar plants to produce green hydrogen.

DE BEERS AND BOTSWANA RENEW DIAMOND SALES DEAL

De Beers Group has agreed in principle with the Government of Botswana to renew their rough diamond sales agreement, which is expected to drive their joint venture Debswana, for ten more years through to 2033. In addition, the two parties have also agreed to extend the Debswana mining licences until 2054.

According to the new agreement, the share of Debswana sold through Okavango Diamond Company (ODC) will be progressively increased to 50% over a 10-year duration, with ODC receiving 30% of the mine's production, thereby ensuring a sustainable transition for both partners. The second aspect of the agreement is to establish Debswana as one of the leading producers of diamond in the world. Moreover, the focus is to expand the country's job market, both within the diamond industry and its emerging sectors, thus aiding in the development of a knowledge-based economy.

BRIEFS

AfDB approves grant from SEFA

The African Development Bank Group's board of directors has approved a US\$7.88mn grant from the Sustainable Energy Fund for Africa (SEFA) for the Africa Energy Transition Catalyst (AETC) Programme, which aims to increase renewable energy generation across the continent.



AETC consolidates six identified energy transition projects.

AETC consolidates AfDB's support for the acceleration of a just energy transition for Africa, defined as a low-carbon transition that is fair, inclusive, creates decent work opportunities and leaves no one out.

Scatec's solar projects reach financial close



The Scatec plants will have a total capacity of 273MW.

Scatec ASA has reached financial close for its three Grootfontein solar projects in South Africa. The solar power plants will be the first Scatec assets located in the Western Cape province of the country and have a total capacity of 273MW solar power. Once operational, the projects will deliver much needed renewable energy under a 20-year power purchase agreement. The three solar plants will lead to a combined abatement of 630,000 tonnes of CO₂ emissions annually.

Lobito Atlantic Railway takes over railway services for Lobito Corridor

A ceremony, hosted by the Municipal Administration of Lobito, marked the commencement of the transfer of the concession of railway services and support logistics of the Lobito Corridor to Lobito Atlantic Railway.

The company will take over the operation, management and maintenance of the rail infrastructure for the transport of goods for the corridor that runs for approximately 1,300 km, connecting the Lobito port to Luau, in eastern Angola, close to the border of DRC.

The Lobito railway extends across Angola for almost 1,300 km and then continues for 400 km into DRC to Kolwezi, the heart of the Copperbelt. It also connects with the extensive rail network run by the National Railway Society of the Congo (SNCC). The 30-year concession has been awarded to the Lobito Atlantic Railway consortium joint venture company comprising Trafigura Pte Ltd, a market leader in the global commodities industry; Mota-Engil Engenharia e Construcao Africa SA, an international construction and infrastructure management company; and Vecturis SA, an independent rail operator.

Angola's Minister of Transport Ricardo Viegas d'Abreu, stated that the Lobito Corridor is a powerful infrastructure which definitively marks the image of Angola to the world, namely with private investors and financial entities from the United States, Europe and other geographies.

Realising the full potential of the railway will require significant investment by the consortium. This will include securing 1,555 wagons and 35 locomotives for the Angolan side of the corridor alone. The concession is also committed to investing in training and skills – with dedicated training centres already in place at Huambo and Lobito. Overall, the consortium plans to invest US\$455mn in Angola and up to US\$100mn in DRC and there is the potential for additional investment in the future as the opportunity is explored to extend the line further into Zambia, thereby extending its benefits even further across the region. The development of the rail corridor also promises environmental and safety benefits by helping remove trucks from the road which should reduce border delays, the risk of road traffic accidents and road degradation, as well as cutting air pollution and carbon emissions.



The Lobito Corridor runs for approximately 1,300 km in Angola.

Image Credit: Adobe Stock

ANDRITZ TO UPGRADE PULPING LINE FOR MKHONDO PAPER MILL

International technology group, ANDRITZ, has received an order from Mpac Operations to upgrade a pulping line at its Mkhondo Paper Mill in Mpumalanga, South Africa.

The upgrade will boost the line's capacity and improve the strength properties of the product. This will help the customer respond to the strong domestic and international demand for high-quality sustainable packing solutions. As Brian Smith, project director, Mpac explained, "With the technological solution proposed by ANDRITZ, we can increase our mill's performance and make our production more sustainable at the same time. In addition, we get everything from a single source – three good reasons for choosing ANDRITZ as a partner."

ANDRITZ will upgrade the entire neutral sulphite semi-chemical pulping (NSSC) line, which processes eucalyptus and pine to provide fluting and linerboard for the production of containerboard. The comprehensive ANDRITZ solution comprises key equipment for the wood processing, cooking, washing and refining sections to increase the line's capacity from 225 bdmt/d to 365 bdmt/d and at the same time enhance product quality.

ANDRITZ will also provide the supervision over the erection, commissioning, and start-up as well as the training of the operating personnel. Start-up of the upgraded line is scheduled for the first half of 2025.

The upgrade to the pulping line is part of the bigger mill upgrade project where Mpac announced in December 2022 the approval of a US\$66.4mn capital investment project at its Mkhondo Paper Mill. It forms part of Mpac's portfolio optimisation and strategically positions the mill to meet the increasing demand for quality, sustainable, fresh produce packaging solutions driven by robust growth in the South African export fruit sector.

ALLEN & OVERY ADVISES ON HYDROGEN JV

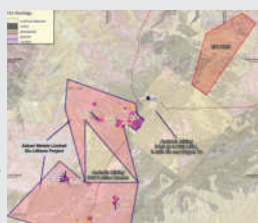
Allen & Overy, a top law firm with expertise in banking and finance, has worked with the African Legal Support Facility to advise the Environmental Investment Fund of Namibia on a joint venture (JV) with Climate Fund Managers, a Dutch for-profit investment manager, to undertake investments into commercially viable green hydrogen initiatives.

The investments would be taken through a newly established fund, SDG Namibia ONE, and represents another step forward for the Government of Namibia to realise the potential of transformative green hydrogen for the benefit of the population.

SDG Namibia One is a bespoke blended financing infrastructure fund, which will look to raise money from local and international institutional investors to develop Namibian green hydrogen projects and related infrastructure.

BRIEFS

Expansion of Uis lithium project



Geology map of the Uis Lithium Project.

Askari Metals Limited has announced its execution of a share sale agreement with the shareholders of Astral Dynamix Mining Investment CC, an entity registered in Namibia, Africa, in relation to the acquisition of the issued capital of Astral Dynamix, the 100% owner of exclusive prospecting licence (EPL) 7626 in Namibia's prospective Uis pegmatite belt. The company recently conducted an initial site visit to EPL 7626 and inspected several mapped pegmatites.

Tier IV data centre coming to Angola

Paratus Group will construct Angola's first Tier-IV by design data centre in Luanda to



Paratus owns and operates data centres in Angola, Namibia and Zambia.

complement the existing two Tier-III by design facilities that the pan-African telco already owns and operates in Angola. This is the fifth world-class certified and carrier-neutral data centre operated by the Paratus Group in South Africa.

Chief technical officer at Paratus, Rolf Mendelsohn, said this is the group's most ambitious data centre project to date.

AfDB loans US\$115mn to Nigeria for road development

The African Development Bank (AfDB) has approved a loan worth US\$115mn for a major road rehabilitation project in Nigeria's Abia state. The project would include road restoration, erosion control infrastructure, and the development of solid waste management facilities in Umuahia, the state capital, and Aba, the commercial centre.

The project will be funded with a loan from the African Development Bank, one from the Canada-African Development Bank Climate Fund (CACF), and a co-financing loan from the Islamic Development Bank. The Abia State Government would contribute US\$23.8mn in counterpart funds for project compensation and the implementation of a Resettlement Action Plan.

A total of 248.46 km of road – 58.03 km in Umuahia and 190.43 km in Aba – will be rehabilitated to asphaltic concrete standards at varied cross sections under the project, which is projected to be finished in 2029. Erosion sites in Umuahia and Aba will be restored, and preliminary studies for private sector engagement in solid waste management in the two cities will be conducted. Capacity building, project management, and the construction of social infrastructure, such as school renovation and the supply of sanitary facilities in schools, community markets, and hospitals, will also be part of the project. Umuahia and Aba face infrastructure challenges due to under-investment and rapid urbanisation, which are exacerbated by erosion and waste. When finished, the 1.37 million people who live in these two cities would benefit from shorter travel times, cheaper car operating expenses, and lower transportation costs. The project will also produce 3,000 temporary employment opportunities (30% of which will be for women) during the building phase, and around 1,000 permanent jobs during the operational period. The permanent jobs will assist the youth, who will make up 50% of the



Loko, Nasarawa Nigeria - road construction.

enterprise. Lamin Barrow, director general of AfDB Nigeria, said, "The results from implementation of the project will help expand access to economic and social amenities in the two cities, and thereby contribute to building sustainable and liveable cities."

GHANA TO CONSTRUCT COMMUNITY CENTRE FOR PWDS

Ghanaian Vice President Mahamudu Bawumia has laid the groundwork for a community facility for people with disabilities (PWDs).

It will be a 2,000 acre, 9,000-home Integrated Community and Empowerment Centre for Persons Living With Disabilities (PWDs) at Agortor-Kope in the Ningo-Prampam district of the Greater Accra region.

Known as the CEM Ability Village, it is the brainchild of the Charismatic Evangelistic Ministry (CEM) through the Church's Ability Village Charity, to support and empower persons with disabilities skills training and specialist healthcare to promote their full participation in all facets of society.

The facility will include a technical and vocational education training centre, along with a hospital designed to meet the unique requirements of people with disabilities. The hospital will also function as a referral space for PWDs, providing restorative surgery, aids and appliances, training, and serving as a research institution, among other things. There will be a technology centre, which will concentrate on software development as well as hardware assembly and maintenance. Overall, the community centre will focus on providing counselling, advice, and information services to people with disabilities across the country.

It will also provide help with assisted living and inexpensive housing, and assist people with disabilities in entering agricultural and other economic endeavours.

All of this will be done in conjunction with development partners and corporate organisations.

Technical assistance from development partners and construction materials alongside equipment donations for the skills training facilities and the hospital have also been welcomed.

MOTA-ENGIL TO DEVELOP HIGHWAYS IN AFRICA

Portuguese conglomerate MOTA-ENGIL's African subsidiary has signed a contract in Guinea with Rio Tinto Iron Ore Atlantic Ltd. The value of the contract is US\$300mn and is associated with the Simandou project located in the southern region of Guinea, approximately 650 km from Conakry.

The agreement will include the initial land movement for the establishment of accesses. This will also include future industrial facilities of a mine, as well as sedimentation basins, spillways and the implementation of erosion control measures. The project will start in September 2023 and will have an estimated duration of 30 months. In Nigeria, MOTA-ENGIL and Africa Finance Corporation signed two concession contracts with the Federal Ministry of Works and Housing for highways connecting Lagos to the country's centre and southwest, and to the border with Benin. The first investment will be US\$260mn. Other smaller contracts for US\$143mn have been won in Angola, Mozambique, Rwanda, and Ivory Coast.

Image Credit: AfDB

► BRIEFS

Gold exploration continues in Côte d'Ivoire



The Tongon mine in Côte d'Ivoire.

Barrick Gold Corporation is continuing its exploration activities in the Tongon gold mine in Côte d'Ivoire. The mine has contributed US\$2.2bn to the Ivorian economy.

Exploration is also ongoing in the Seydou North, Tongon West and Djinni satellite targets, adding to the life of mine. Barrick has also been awarded a new exploration permit for Boundiali and drilling is ongoing at the Fonondara conversion project, said the company's general manager, Hilaire Diarra.

Zenith named Nigeria's top bank



Zenith Bank has retained its number one position in Nigeria for 14 years.

Zenith Bank Plc has kept its position as Nigeria's top bank by Tier-1 Capital in The Banker Magazine's 2023 Top 1000 World Banks Rankings. For the fourteenth year in a row, the bank has maintained its position as Nigeria's top Tier-1 bank, ranking 467th internationally with a capital of US\$2.54bn. The company also joined the exclusive group of stocks worth over one trillion in the third week of June this year.

Image Credit: Barrick Gold Corporation

Image Credit: Adobe Stock

Afreximbank signs MoU to develop dairy industry in Mauritania

The African Export-Import Bank (Afreximbank) and Al-Mahaliya Inc. of Mauritania have signed a US\$22mn financing agreement for the development of a 100-metric tonnes per day dairy processing and bottling plant in Nouakchott.

The agreement is expected to boost the local dairy sector and associated value chains in Mauritania and to help standardise the industry. According to the agreement, the development of the dairy processing and bottling plant will facilitate and provide financing for the manufacturing sector through agro-processing and light manufacturing.

Afreximbank also entered a working relationship with Digiloop, a limited liability company focused on enhancement and monitoring of external and internally generated revenues, for collaboration in revenue origination, enhancement and monitoring services as well as bankability reviews for African countries on behalf of the bank.

The MoU was signed by Kanayo Awani, executive vice president, Intra-African Trade Bank, for Afreximbank, and Sabelo Sivuyile Maqungo, managing director, Digiloop. It provides for Digiloop to track the facilitation of capital raise and enhancement of security loans on the back of existing or new streams of revenue for the bank.

The bank also signed two other MoUs, with Banque De Developpement Des Etats De L'afrique Centrale (BDEAC) and New Hayven Merchant Bank of Guyana. The MoU with BDEAC provides a framework for collaboration between Afreximbank and BDEAC for the promotion of trade and economic development.

The MoU with New Hayven Merchant Bank of Guyana provides for the Guyanese private sector and the Government to identify business opportunities and projects that would be profitable for investors and that would contribute to Guyana's growth and development. Such opportunities will focus on economically sound businesses and projects that would create manufacturing, agriculture, technology transfer and service jobs for Guyana.



Mauritania will see its dairy industry develop further.

ENDEAVOUR MINING SELLS BOUNGOU AND WAHGNION MINES

Endeavour Mining has completed the sale of its 90% interests in its Boungou and Wahgnion non-core mines in Burkina Faso to Lilium Mining.

The total consideration is expected to exceed US\$300mn and is comprised of upfront and deferred cash considerations and net smelter return royalties (NSR).

According to the agreement, Endeavour plans to receive US\$130mn in reimbursement of historical shareholder loans by July 2023 to strengthen its balance sheet.

Additionally, US\$25mn in deferred cash consideration will be payable in two instalments by Q4 2023 and Q1 2024. The deferred cash consideration will consist of 50% of the net free cashflow generated by the Boungou mine until US\$55mn is paid, expected to occur by Q4 2024.

The company expects an NSR on Boungou to generate US\$52mn in cash over its life of mine, and an NSR on Wahgnion to generate US\$41mn.

The transaction constitutes a class 2 transaction for Endeavour for the purposes of the UK Financial Conduct Authority's Listing Rules and, as such, does not require Endeavour shareholder approval.

Based on the economic terms of the transaction, Endeavour will perform its purchase price adjustments with effect from 1 May of this year.

Endeavour updated its 2023 production and AISC guidance to account for the removal of guided production from Boungou and Wahgnion mines. The full year 2023 production guidance decreased from 1,325 to 1,135 koz, while AISC guidance improved by US\$45/oz to US\$895-950/oz.

The asset sale is offset by ongoing construction activities, with production and AISC expected to improve next year.

AFRICA50 SIGNS MOU FOR SOLAR PROJECTS

Africa50, the pan-African infrastructure investment platform, and the International Solar Alliance (ISA) have signed an MoU to support and finance solar projects in Africa. This partnership advances the organisations' mutual goal of increasing the deployment of solar, to improve energy access, ensure energy security, and drive the energy transition around the world. The MoU was signed at Africa50's Infra for Africa Forum and General Shareholders Meeting in Lomé, Togo.

ISA is also initiating a solar finance facility to mitigate investment risk and a SolarX Startup Challenge to identify and support innovative solar projects for investment. Apart from this, the two organisations will also engage in mutual capacity building and seek to leverage each other's networks to mobilise funding and raise awareness of African solar projects in European and Indian markets. Africa50 works with African governments and project sponsors to develop bankable projects that can be financed by the private sector.

BRIEFS

ePac opens packaging plant in Ghana



The company has opened its latest plant in Ghana.

ePac Flexible Packaging has opened a Grade A 2,200 sq m production plant on the Spintex Road in Accra, Ghana.

ePac West Africa, launched in 2001, serves customers from Ghana, Nigeria, Senegal and Zanzibar, with fulfillment handled by ePac's plants in the UK and France. The company now hopes to serve CPG brands of all sizes throughout Africa, with competitively priced flexible packaging and industry-best turnaround times.

Cybastion signs MoUs with Côte d'Ivoire



Côte d'Ivoire is looking to strengthen cybersecurity.

Cybastion and Côte d'Ivoire's Ministry of Communication and Digital Economy have signed two MoUs along with a framework contract. The objective of the partnership is to fortify cybersecurity and operationalise the National Cybersecurity agency. The first MoU aims to develop a digital city, while the second MoU centres on the establishment of a wireless emergency network system, which will help the Ivorian emergency preparedness strategy.

Engineers from Uganda and SA win Africa Prize for Innovative Solutions

Edmund Wessels, a South African biomedical engineer, and Anatoli Kirigwajjo, a Ugandan electrical engineer, have jointly won the Royal Academy of Engineering's 2023 Africa Prize for Engineering Innovation.

Kirigwajjo wins with YUNGA, a local digital security network that connects neighbours to each other and police within a 20 km radius through a physical device, smartphone app or SMS service, providing security at low cost.

Nearly 1,000 households in 30 communities across central Uganda are already on the YUNGA network, which has successfully prevented around 130 break-ins and related crimes. The team is aiming to connect 32,000 households across Uganda in the next two years.

Wessels wins with FlexiGyn, a battery-powered, portable handheld device that enables gynaecologists to diagnose and treat women's uterine problems without anaesthetic or expensive equipment. It aims to increase women's access to reproductive healthcare, particularly in remote areas.

Typical hysteroscopy systems are rigid, leading to high levels of patient discomfort, requiring bulky additional equipment for visualisation. The innovative FlexiGyn features a flexible scope with built-in light and camera, offering a more comfortable and efficient experience for both patients and healthcare providers.

Africa Prize judge, Rebecca Enonchong, said "Home security is an every day issue for so many people across Africa – we see huge potential for Anatoli's innovation to transform lives and empower communities to secure their homes, so we are delighted to award YUNGA the Africa Prize. We believe Edmund's innovation has the potential to help so many women who struggle to access reproductive healthcare, and are very pleased to award FlexiGyn the Africa Prize as well. We look forward to seeing the impact of both innovations in Africa in the coming years."

The Africa Prize for Engineering Innovation, founded by the Royal Academy of Engineering in the UK, is Africa's biggest prize dedicated to supporting and upscaling engineering innovation.



Image Credit: Royal Academy of Engineering
Winners Anatoli Kirigwajjo and Edmund Wessels.

EIB TO PROVIDE CLEAN WATER AID TO DJIBOUTI

The European Investment Bank (EIB) will be providing a 25-year financing package to support water desalination, access to clean drinking water and wastewater treatment in Djibouti.

The EIB's first-ever support for water investment in the East African country will transform water access in the national capital, enhance resilience to climate change, is expected to secure access to clean water for more than 555,000 people and enable solar power renewable energy to produce clean drinking water as part of Global Gateway.

This investment through EIB's new development finance arm, EIB Global, will double freshwater production capacity at the Doraleh Desalination Plant and expand three wastewater treatment plants at Doraleh, Balbala and Douda. The long-term EIB loan to the Ministry of Economy and Finance of the Republic of Djibouti is guaranteed by the European Union's Neighbourhood, Development and International Cooperation Instrument (NDICI), and will be used alongside grant financing from the European Union, the French Development Agency (AFD) and support from the Djibouti Government.

The EIB's largest ever financing for investment in Djibouti was signed during a working visit to the Luxembourg headquarters of the EIB by Finance Minister, Ilyas Moussa Dawaleh, and Thomas Östros, vice president of the European Investment Bank, in the presence of Youssouf Aouled Faraf, director of the Prime Minister's Office and chairman of the national water agency, ONEAD, and Aden Mohamed Dileita, ambassador of the reubcli of Djibouti to the European Union and Benelux.

Dawaleh said, "The EIB's new support for water security represents a significant milestone in enabling Djibouti to adapt to a changing climate."

KAM AND ICCA LAUNCH RESPONSIBLE CARE KENYA

Kenya Association of Manufacturers (KAM), in partnership with the International Council of Chemical Associations (ICCA), has launched Responsible Care Kenya, a voluntary initiative for associations and industries which commit to safe, health, environment and security in handling chemicals.

Ministry of Environment, Forestry and Climate Change, Senior Assistant Secretary, Rodney Omari, said, "By adopting and appreciating Responsible Care, we are certain that we shall increase consumers' confidence in Kenyan products, thus increasing our global competitiveness and exports by expanding and creating new market for Kenyan products.

"The Government has enacted the Sustainable Waste Management Act 2022 which will transform Kenya from a linear to a circular economy. Subsequently, we shall enhance safety, promote efficiency, stimulate innovation, spur recycling and reduce waste."

BRIEFS

Molo Graphite mine gets solar farm



Image Credit: NextSource Materials

The solar farm at Molo Mine.

NextSource Materials has completed the construction of the solar farm for the solar hybrid power plant at its Molo Graphite mine in Madagascar.

The solar hybrid plant is owned and operated by CrossBoundary Energy (CBE) under a 20-year power purchase agreement and consists of the 2.6MW solar farm, a 3.1MW thermal facility, and a 1MWh battery energy storage system (BESS), which is expected to arrive in the next few weeks.

UKEF to support infrastructure projects in Zanzibar

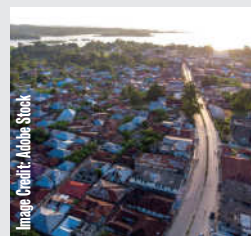


Image Credit: Adobe Stock

UKEF will enable two major projects.

The UK has enabled a huge financing package for transformational infrastructure projects driven by UK exporters across Zanzibar, Tanzania.

The financing was underwritten by UK Export Finance (UKEF), the UK Government's export credit agency, and enables two major projects: a historic upgrade to Pemba Airport and improvements to 103km of roads which will support connectivity across Pemba and Unguja islands.

Mastercard and SomBank to promote digital payment solutions in Somalia

Mastercard, a global technology company, has announced a partnership with SomBank, one of the innovative financial institutions in Somalia.

The purpose of the partnership is to promote the adoption of digital payment solutions in the country, bringing more Somalis into the digital fold. The partnership allows SomBank to issue and accept Mastercard payments, providing customers with a safe and secure, payment solution for various transactions, including purchases, withdrawals, and online payments.

The SomBank Card, a Mastercard-branded debit card will offer a convenient payment solution for everyday transactions across Somalia offering access to a wide network of merchants and ATMs that accept Mastercard payments and through the bank's extensive network of branches and agents.

"As a global technology company with a deep commitment to financial inclusion, Mastercard is proud to partner with SomBank to bring digital payments to Somalia. This also supports our commitment to work with financial institutions to bring more people into the digital economy," said Shehryar Ali, country manager for East Africa at Mastercard. "By providing access to secure and convenient payment solutions, we believe that this partnership will help drive economic growth and improve the lives of millions of Somalis."

The card will initially be distributed to 100,000 SomBank customers in 2023, with plans to expand the programme in the coming years. "This is a truly remarkable day for us, as we take another step towards making banking more accessible for our customers. We are excited to partner with Mastercard to bring digital payment solutions to our customers," said Abdullahi Aden, CEO of SomBank. "Our partnership with Mastercard will enable us to offer our customers a seamless way to conduct transactions, whether they are purchasing goods and services, paying bills, or sending money to friends and family."

The partnership is a significant milestone in the ongoing effort to foster financial inclusion in Somalia. By providing access to digital payment solutions, Mastercard and SomBank are enabling more people to participate in the economy and access essential financial services.



Image Credit: Mastercard

The purpose of the partnership is to bring more Somalis into the digital fold.

OPEC FUND'S US\$60MN LOAN TO SUPPORT ENERGY SECURITY IN TANZANIA

A new US\$60mn loan by the OPEC Fund for International Development and partners is expected to significantly strengthen energy security in Northwest Tanzania.

The project will include the construction of a 166 km overhead transmission line connecting the Kagera region to the national grid, replacing the current energy supply from Uganda with local hydropower resources.

Tanzania has enormous potential in the field of renewable energy. As one of the countries bordering Lake Victoria, which is fed by the Kagera River, Tanzania is investing heavily in the expansion of its hydropower capacity with plants under development at Rusumo and Kakono in its northwestern region. The two new hydropower plants are expected to be operational in 2024 and 2030 with nominal capacity of 80MW and 87MW, respectively.

The financing of the project will be shared among several partners. The OPEC Fund with a US\$30mn loan, as a first tranche of a US\$60mn facility, will be joined by the Abu Dhabi Fund for Development (US\$30mn), the Saudi Fund for Development (US\$12.8mn) and the Government of Tanzania with US\$2.6mn. Other backers are set to finance a downstream distribution network that will connect many unserved communities to the grid in the country.

The construction of the new transmission line will allow Tanzania to reduce its dependence on energy imports. This diversification will enhance energy security and save costs by eliminating the need to pay for imports in foreign currency.

Furthermore, the expansion of hydropower generation will allow the country to shut expensive and polluting back-up thermal power plants, leading to a cleaner and cheaper energy sector in Tanzania.

AVANTI OPENS NEW OFFICE IN NAIROBI

Avanti Communications has announced the opening of its newly renovated office in Nairobi, Kenya.

The 276 sq m East African hub in Nairobi is Avanti's third site in Africa. The Kenyan office serves as Avanti's centre for East African sales and education hub. The company, which has already connected 245 schools, has plans to connect 5,000 schools over the next five years. Avanti's footprint in Africa now represents more than a fifth of the company's workforce, emphasising the company's commitment to building a strong presence in the region and reflects Avanti's ambition to make Africa its primary revenue source within the next two to three years.

Debbie Mavis, group HR director at Avanti, said, "As a customer-centric business, we understand the importance of having offices in the areas we operate to strengthen our on-the-ground relationships. Our education project is a core focus for Avanti and the local Kenya team are central to its success."

BRIEFS

Uganda gets first dedicated aquafeed plant



The facility will cater to the growing demand in the East African market.

De Heus Animal Nutrition has held a ceremony to celebrate the first dedicated aquafeed plant in Ugandain Njeru, near Jinja. At full capacity, the plant will have the capability to produce approximately 50 thousand metric tons of fish feed per year, catering to the growing demand in the East African market. The organisation is aiming to contribute to the nutrition and food security of Uganda, as fish plays a vital role in the country's diet.

Kenya and Senegal join IEA

The International Energy Agency's governing board has unanimously agreed that Kenya and Senegal will join the organisation as association countries, demonstrating its deepening engagement across Africa on energy and climate issues.

While Kenya is currently working with IEA on a wide range of topics, the organisation has worked closely with Senegal since 2019, including providing input into the design

Image Credit: IEA



Both countries will join IEA as association countries.

of market reforms to enhance governance in the country's energy sector.

Upcoming Events Calendar 2023

AUGUST

10-12

2ND UGANDA BUILDCON

Kampala, Uganda
<https://ugandabuildcon.com/>

29-30

DIGITIZING AFRICA

Johannesburg, South Africa
<https://africadigitrans.com/>

SEPTEMBER

5-10

IAA MOBILITY

Munich, Germany
<https://www.iaa-mobility.com/>

12-14

PROPAK WEST AFRICA

Lagos, Nigeria
<https://www.propakwestafrica.com/>

19-21

NIGERIA ENERGY

Lagos, Nigeria
<https://www.nigeria-energy.com/>

28

UK - AFRICA TRADE AND INVESTMENT CONFERENCE

London, UK
<https://african-chamber.com/uk-africa-events>

OCTOBER

9-13

AFRICA OIL WEEK

Cape Town, South Africa
<https://africa-oilweek.com/home>

10-11

GREEN ENERGY AFRICA SUMMIT

Cape Town, South Africa
<https://greenenergyafricasummit.com/home>

16-20

AFRICAN ENERGY WEEK

Cape Town, South Africa
<https://aecweek.com/>

17-19

MOROCCO SIEMA

Casablanca, Morocco
<https://www.siemamaroc.com/>

24-26

MANUFACTURING INDABA

Johannesburg, South Africa
<https://manufacturingindaba.co.za/>

POWERING WEST AFRICA'S ENERGY TRANSITION

One of West Africa's leading energy events, Nigeria Energy, will extend its 10-year legacy as it returns to the Landmark Centre in Lagos.

From 19-21 September, more than 5,000 energy professionals will have the opportunity to discover, network and trade with leading companies from around the world, as more than 100+ international exhibitors arrive on location. Key stakeholders from Nigeria and the wider region's energy sector will gather with government ministers, regulators, visionary innovators and more, in order to meet and develop reliable power solutions for peak energy demand and to pave the way for decarbonisation.

Key exhibitors this year include the likes of Huawei Technologies, JA Solar, JFO Energy Solutions, JMG Ltd., Jubali Bros, Xtra Power Equipment, Cleon Powertech Solution, Fronius International, Lucy Electric, and many more.

The event will unite the West African power community through four dedicated product sectors: Backup Generators & Critical Power; Renewables & Clean Energy; Transmission & Distribution; and Energy Consumption & Management.

The conference will also be defined by two conferences in the form of the Technical Seminar and the Nigeria Energy Leadership



Nigeria Energy 2023 will focus on addressing the critical challenge of energy access.

Summit. In the case of the former, the success stories around cutting-edge innovations and technologies that are changing the energy landscape will be explored and the platform will serve as a dedicated knowledge hub for energy professionals to learn and share industry best practices in the energy sector. Elsewhere, the Nigeria Energy Leadership Summit will gather stakeholders involved in the value chain

alongside government leaders; gas companies; independent power producers; generation, distribution and transmissions companies; technology providers; and agencies to facilitate the development of renewable and off-grid solutions.

Discover more information about the event at:
<https://www.nigeria-energy.com/en/home.html>

AFRICAN REVIEW / ON THE WEB

A selection of product innovations and recent service developments for African business
Full information can be found on www.africanreview.com

MDS APPOINTS ELB AS SOUTH AFRICAN DISTRIBUTOR



ELB already represents other Terex brands.

MDS, a global provider of heavy-duty rock trommels and conveyors, has appointed ELB Equipment (ELB), which offers a broad range of earthmoving, construction, mining, and quarrying equipment, as its official distributor for South Africa.

Raheel Qamar, MDS business development manager, explained, “ELB is a logical partner for MDS, since they already represent other Terex brands such as Powerscreen scalpers and screens, which already dominate the local market. The addition of our leading heavy-duty rock trommels will close the circuit for miners who are already familiar with ELB Equipment’s high level of service and minerals processing offerings.”

MDS tracked, static and recycling trommels can handle a wide range of media including blasted rock and riprap, as well as varying substrates such as clay, limestone and even recycled concrete rubble.

The rugged ability of the trommels means they can shorten the processing equipment chain onsite – either direct from blasting and loading or from a primary crusher or even recycled materials and composting.

ELB divisional director, Wakefield Harding, remarked, “The addition of MDS static and tracked trommels supports our growth strategy to expand our offering into new crushing, screening, and environmental industries, with products that complement our existing portfolio. This range is unmatched in the local market and is simply not available as standard produced machines elsewhere.”

FOREIGN DIRECT INVESTMENT FLOWS TO AFRICA FALL IN 2022



In 2022, the biggest increase in announced greenfield projects was in energy and gas supply.

UNCTAD’s World Investment Report 2023 has indicated that foreign direct investment (FDI) flows to Africa declined to US\$45bn in 2022 from US\$80bn in 2021.

The report has shown that the number of greenfield project announcements rose by 39% to 766 with six of the top 15 greenfield investment megaprojects announced in 2022 were in the continent.

Over the past five years, FDI inflows have risen in four of the regional economic groupings on the continent. FDI in the Common Market for Eastern and southern Africa grew by 14% to US\$22bn. Flows also rose in the Southern African Development Community to US\$10bn; the West African Economic and Monetary Union doubled to US\$5.2bn; and the East African Community grew by 9% to US\$3.8bn.

According to UNCTAD, intraregional investment remained relatively small, despite an increase over the past five years. In 2022, intraregional greenfield project announcements represented 15% of all projects in Africa (2% in terms of value), as compared with 13% (2% in value) in 2017.

However, looking at announced projects invested in by only African multinational enterprises, three quarters of their value remained on the continent.

In 2022, the biggest increase in announced greenfield projects was in energy and gas supply.

International project finance deals targeting Africa showed a decline of 47% in value but a 15% increase in project numbers, to 157.

FLOATING DOCK ON WAY TO EGYPT



A total of 380 modular axle lines of Cometto MSPE were assembled for the task.

A 260 m floating dock with a weight of 18,000 tons has begun its journey from South Korea to Egypt with help from Cometto SPMTs.

The huge floating dock is capable of lifting up to 35,000 tons. SangSangIn Ship Machinery signed a contract with Suez Canal Authority of Egypt to build the floating dock in 2021. The starting point for the vessel was the SangSangIn Industry GwangYang port where the floating dock had to be moved 300 m out of the installation location and loaded onto a barge ship. The steel colossus has a width of 62 m and a height about 22.5 m.

As a contractor, the competence of three South Korean heavy load specialists Anjeon, DaeMyung and Global came together. “A total of 380 modular axle lines of Cometto MSPE has been assembled, composed by sixty-two 6-axle units two 4-axle units,” explained Alberto Di Stefano, sales manager at Cometto.

The complete system was driven by 12 Power Pack Units with 335 kW each.

Di Stefano added, “Such projects are realisable thanks to the payload capacity of the Cometto MSPE which reaches a value of up to 70 tons per axle line... Additionally, the patented Cometto Dual-Link suspension offers an optimised force repartition in the suspension structure.”

The Cometto SPMTs in convoy were set to kick off the load-out process. First the position of the supports had to be adjusted a little, then the load-out project was successfully completed.

REGIONAL MEDICAL MANUFACTURING STRENGTHENED



The MoU was signed alongside the Africa Health Business Symposium.

The Africa Centres for Disease Control and Prevention (Africa CDC) has launched a memorandum of understanding (MoU) with The United States Pharmacopeia Convention (USP) to expand access to quality-assured medical products in Africa.

The MoU, signed at the Africa Health Business Symposium, promises to increase regional manufacturing, strengthening enabling regulatory and market environments, and bolstering clinical and public health laboratory networks.

USP has committed to supporting Africa CDC’s efforts to improve health equity through expanded manufacturing and strengthened health systems. This collaboration will leverage USP’s decades-long work in both areas which has resulted in more than 70 products achieving WHO prequalification or other internationally recognised regulatory approvals and supporting 34 laboratories to receive global accreditations. Key areas of collaboration will include:

- Supporting increased production of quality-assured vaccines, diagnostics, and medical products;
- Strengthening clinical and public health laboratory systems and networks;
- Reinforcing regulatory systems for vaccines, diagnostics, and medical products;
- Supporting workforce development and continental competency frameworks related to laboratory strengthening, regulatory strengthening, and pharmaceutical manufacturing.

Stepping up sustainable shipping

Achieving climate-friendly transportation is a hot topic for the maritime sector, with leading shipping companies spearheading the charge to net-zero operations.

Maersk is aiming to achieve net-zero across the entire business by 2040.



Image Credit: Maersk / Maric Design

The impetus to deliver green shipping has been emphasised by the International Maritime Organisation (IMO) revising its 2018 strategy. At the start of July, member states of IMO adopted a 2023 IMO Strategy on Reduction of GHG Emissions from Ships, with enhanced targets to tackle harmful emissions – formerly targeted to reduce emissions from ships by 50% by 2050. The revised strategy enhances the common ambition to reach net-zero GHG emissions from international shipping close to 2050 as well as a commitment to ensure an uptake of alternative and near-zero GHG fuels by 2030.

IMO secretary-general, Kitack Lim, commented, “The adoption of the 2023 IMO Greenhouse Gas Strategy is a monumental development for IMO and opens a new chapter towards maritime decarbonisation. At the same time, it is not the end goal, it is in many ways a starting point for the work that needs to intensify even

more over the years and decades ahead of us. However, with the revised strategy that you have now agreed on, we have a clear direction, a common vision, and ambitious targets to guide us to deliver what the world expects from us.

“Above all, it is particularly meaningful, to have unanimous support from all member states. In this regard, I believe that we have to pay more attention to support developing countries, in particular SIDS and LDCs, so that no one is left behind.”

The new standards embraced by IMO are a commendable step in the direction of sustainable shipping. While no doubt this will have an impact by encouraging the industry to take a more active role in reducing its climate footprint, environmental policies are not something that the international shipping industry has been taking lightly. Indeed, as outlined by maritime research consultancy,

Drewry, of the world’s leading 10 carriers, eight have already confirmed net zero targets by 2050, with one aiming for 2060 and the other previously indicating their ambitions in line with IMO expectations.

The consultancy continued by noting that there is a common thread of commitment to buying more fuel-efficient and less polluting ships and that the order book highlights a clearly-visible green shift. While the process of cleaning the containership fleet is in its infancy and will take time, there is substantial investment going into greener ships and making operations more environmentally-friendly, a trend that will not only help the environment but provide opportunities for those companies who can help deliver this.

Aiming for alternatives

In recent months, A.P. Moller – Maersk (Maersk) has demonstrated

its commitment to net-zero (which it is aiming to achieve across the entire business by 2040) by focusing on green fuel.

In June, the company announced that it will retrofit an existing ship to a dual-fuel methanol-powered vessel. The engine retrofit is scheduled to be conducted in 2024 by MAN Energy Solutions and the intent is to replicate on sister vessels from 2027.

“Retrofitting of engines to run on methanol is an important lever in our strategy. With this initiative, we wish to pave the way for future scalable retrofit programmes in the industry and thereby accelerate the transition from fossil fuels to green fuels. Ultimately, we want to demonstrate that methanol retrofits can be a viable alternative to new buildings,” commented Leonardo Sonzio, head of fleet management and technology at Maersk.

The company quickly followed this announcement by declaring

that it has also placed an order for six mid-sized, dual-fuel container vessels which will be able to operate on green methanol. Yangzijiang Shipbuilding Group will build the 9,000 TEU vessels which will be delivered in 2026 and 2027. In doing so, Maersk now has 25 methanol-enabled vessels on order.

Not to be outdone, international shipping and container transportation company, Hapag-Lloyd has introduced “Ship Green”, an accessible customer solution for climate-friendly transportation based on biofuel. In the first rollout stage, customers can add Ship Green as an additional service to their existing bookings, allowing them to choose among three different levels of avoidance in carbon dioxide equivalent (CO₂e) emissions: 100%, 50% or 25%.

The avoidance results from the use of biofuel instead of conventional marine fuel within the company’s fleet which derives from second generation feedstock sourced from certified supply chains and produced from waste material such as brown grease or cooking oil. Currently, Ship Green is only available for dry cargo, but it will be expanded to other cargo types in the future.

Wärtsilä Corporation has taken an active role to help operators reduce

emissions, having long-identified investor engagement in green shipping. The technology group has indicated its intention to lead the way in maritime decarbonisation, providing companies with technologies that lay the groundwork for a net-zero future. Specifically, Wärtsilä Marine Power specialises in power, propulsion and lifecycle solutions for the marine market, from end-to-end digital ecosystem planning to future fuels development.

Most recently, it has been contracted by Stena Line to carry out and convert a number of vessels to operate with methanol fuel. The conversions will include the fuel supply system and engine modifications, as well as integrating the new installations with the ships’ existing systems.

A tech tsunami

The significant capital being put into reducing maritime emissions is giving rise to a wave of new technology and solutions from innovative companies that are eager to cash in.

Daphne Technology, a climate deep tech company, for instance, has obtained a license from Saudi Aramco Technologies Company to further develop and commercialise its mobile carbon capture (MMC)

“ The use of AI and machine learning to plan and predict energy-efficient voyages has significance for an industry looking to lower emissions while addressing rising fuel costs.”

MIKAEL LAURIN, HEAD OF VESSEL OPTIMISATION AT YARA MARINE TECHNOLOGIES

technology.

Aramco has already demonstrated the MCC technology in passenger road transportation and has challenged Daphne Technology to explore ways to integrate it with its proprietary solutions for deployment on large commercial vessels.

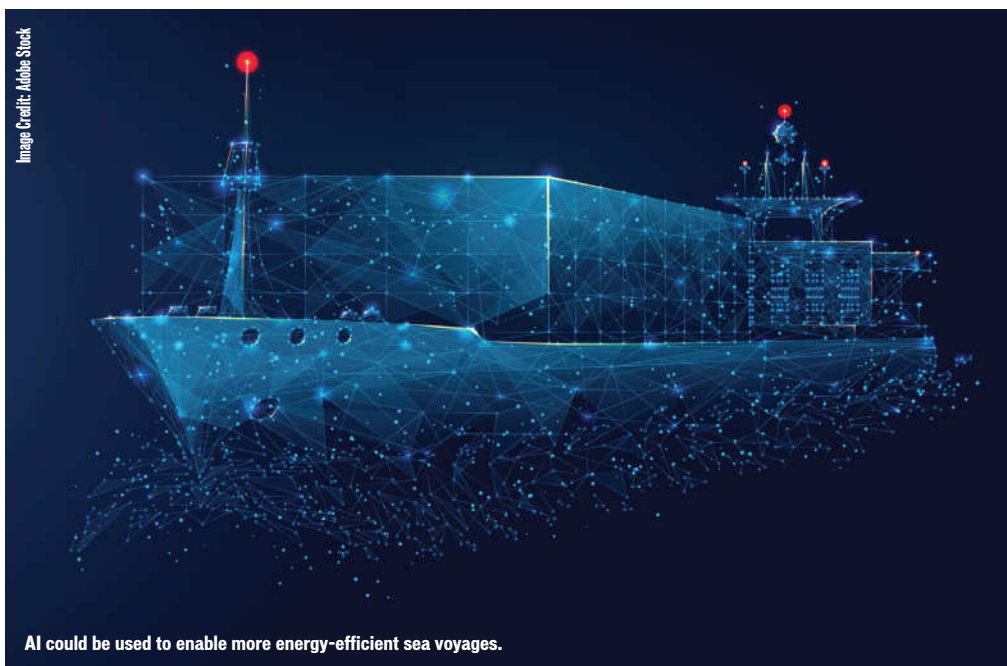
Elsewhere, Yara Marine Technologies, Molflow as well as academics from Chalmers University of Technology, Halmstad University and Gothenburg University have concluded a project to develop an Artificial Intelligence (AI)-based semi-autonomous system to enable more energy efficient sea voyages.

Across three years, the partners collaborated to develop and trial the voyage planning system to explore

how AI and machine learning can unlock more energy-efficient journeys for ship operators. The project utilised pre-existing tools to enable a higher degree of digitalisation and automation in vessel operations, including Yara Marine’s propulsion optimisation system, FuelOpt, and performance management and vessel data reporting tool, Fleet Analytics. It also made use of Molflow’s vessel modelling system, Slipstream.

The resulting system was trialled on two vessels with results indicating successful energy efficiency optimisation based on estimated time of arrival. One of the two trial vessels has since opted to continue using the system, and additional funding has been secured to further explore a selection of the project’s findings.

Mikael Laurin, head of vessel optimisation at Yara Marine Technologies, commented, “The project speaks directly to where shipping is at the moment – where the intersections of digitalisation, decarbonisation and crewing determine our success in addressing climate change. The use of AI and machine learning to plan and predict energy-efficient voyages has significance for an industry looking to lower emissions while addressing rising fuel costs. Similarly, new technologies can streamline operations but require collaboration and buy-in from stakeholders across the board, necessitating crew familiarisation and training, proactive design, and new corporate strategies.” ■



Angling for growth in Angola

Manuel Francisco Pedro, chairman of the board of directors of the Luanda-Bengo Special Economic Zone (ZEE), explores the economic diversification spurring Angola's development.



Since its inception, the ZEE has brought in more than US\$1.5bn in investments.

Image Credit: ZEE

African Review (AR): Could you provide more detail on the ZEE?

Manuel Francisco Pedro (MFP): The Luanda-Bengo Special Economic Zone was created in 2009 in the Municipality of Viana, Luanda. It was created to help attract investment to the country, help diversify the economy and boost national production. The ZEE is made up of two different reserves,

the Viana Reserve with more than 4,700 hectares and some 166 industrial and commercial projects, and the Uala Agro-Industrial Reserve, which is more than 2,800 hectares and still at an embryonic stage. The Viana Reserve has 7,712 employees and is Angola's largest space for industrial projects, with a commercial hub, housing projects, green areas, and roads. We are

currently working with the Government and private investors to develop the infrastructure at the Uala Reserve as it has great agribusiness potential. We want to attract various new businesses that can help us process, distribute, and support farm products.

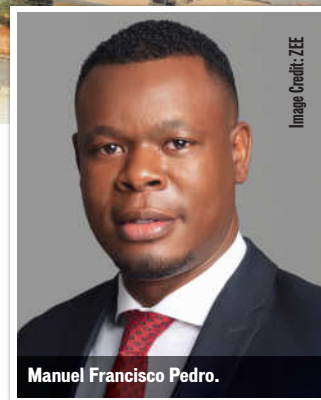


Image Credit: ZEE

Manuel Francisco Pedro.

AR: Why transition the ZEE into a free trade zone?

MFP: We decided to transform the ZEE into a free trade zone to maximise benefits for national and foreign investors at the ZEE. As a free trade zone, the ZEE will be endowed with a specific and subsidised tax regime. This will help the ZEE cement its status as the central platform for regional and international business. A change in status will also improve the ZEE's relations in the African Continental Free Trade Area, which encompasses more than a billion potential consumers. Free trade zone status will increase the ZEE's international credibility and the confidence of potential investors.

The ZEE has already attracted FDI from countries such as China,

Turkey, Eritrea, and India, Portugal and Lebanon, who have invested in industrial units at the ZEE and manufacture products across the industrial sector. Free trade zone status will enable us to maximise investor benefits, which means attracting more investors. This translates into more FDI, more employment opportunities and is overall beneficial for the country.

AR: How has Angola encouraged the acceleration of its non-oil sectors?

MFP: One of President João Lourenço's main objectives is to diversify the economy, which also means decreasing the dependence on oil sector revenue. This has meant a redirection of Angola's

Factories based at the Viana Reserve

Candy Factory: This US\$35mn confectionery factory is a partnership between Oxbow (a food service distributor) and Nelt, the major Serbia-based FMCG distributor. The factory boasts an annual processing capacity of 6,700 tonnes, manufacturing gum, sugar confectionery and lollipops with three production lines.

Galvostahl: The company has two plants, one for galvanizing steel and iron, for energy and telecommunications and one for hot-dip galvanizing. Gavostahl was one of the companies privatised under the State Assets Privatization Program (PROPRIV).

Quinta de Jugais: A meat processing plant that produces 30 tons of charcuterie per month for the Angolan consumer market.

Kaheel Agriculture Angola: Assembles Massey Ferguson brand tractors with an output of 10-15 tractors a day and has an onsite training school.

Hengye Electronics Indústria: This factory is the first of its kind in Angola and makes pre-paid water and electricity meters. The factory has more than 500 Angolan employees who handle the production, assembly, and installation of these devices. Hengye Electronics Indústria Ltd is a subsidiary of the Chinese company Zhejiang Hengye Electronics Co., Ltd.

Data source: ZEE

investment priorities to sectors such as, agriculture, agro-livestock, mining, energy production, water supply, and telecommunications.

Angola has huge agricultural potential, with 58 million hectares of extremely fertile land capable of providing two annual harvests. Part of this agricultural focus is the creation of agro-livestock units and the agricultural products processing industry.

In mining, Angola has 36 of the 51 most valued minerals in the world – such as chromium, cobalt, copper, graphite, lead, lithium, and gold. There is also an opportunity to invest in industry, as shown by the factories/units already operating in the ZEE. The energy sector has investment opportunities in water projects for energy production and the irrigation of agricultural fields, as well as oil and gas exploration in new blocks. Construction and telecommunications are also booming with the privatisation of Unitel and TV Cabo.

The ZEE is currently focused on attracting companies working primarily in agriculture and food processing, light and heavy manufacturing industries, digital technology and the pharmaceutical industry. Our focus is targeting countries such as China, Portugal, India, USA, United Arab Emirates, UK, South Africa, Nigeria, Côte d'Ivoire, Republic of Congo, Democratic Republic of Congo, Egypt, Algeria, Ethiopia, and Uganda.

AR: Where do you think Angola's greatest growth potential lies?

MFP: The Angolan Government anticipates economic growth of 3.5%

between 2023 and 2027; that is driven by economic diversification, especially agribusiness. This sector will receive funding of around US\$3bn to help position Angola among the main African agricultural producers. Agribusiness will be the engine of the economy in the coming years through financing lines from the Development Bank of Angola (BDA).

The already approved Planagrão (National Plan for the Promotion of Grain Production) has been allocated around US\$500mn per year, and an equivalent amount for infrastructures and accesses to the production areas. Planagrão, which is entering its pilot phase, will be managed by BDA, during its five-year implementation period.

The Government will also channel US\$300mn to Planapescas (National Plan for the Promotion of Fisheries) as well as another US\$300mn to livestock to support animal production and derivatives.

Angola's GDP growth in 2022 was driven by positive variations in transport and storage (+32.8%), public administration (+7.5%), construction (+5.5%), and electricity and water (+4.7%). Other economic sectors that grew in 2022 are fishing (+4.2%), agriculture and forestry (+3.8%), real estate (+3%), manufacturing (+2.5%), trade (+1%), oil extraction and refining (+0.5%), and diamond extraction (+0.5%).

AR: What measures have been taken to encourage FDI?

MFP: Attracting foreign investment is an absolute necessity for Angola's future, which is why President João Lourenço adopted new reforms in 2018, such as The Private

Investment Law, which outlines the general basis for private investment into the country and defines the framework for access to incentives and other benefits. The Private Investment Law gives foreign investors and entrepreneurs the same right to access tax incentives and investment aid. Capital repatriation is now safeguarded by the law and foreign investors have the right to transfer and repatriate dividends or other proceeds from a direct investment.

Since 2020, the import of capital from foreign investors who wish to invest is exempt from licensing by the Angolan central bank. The new Private Investment Law contains tax incentives, with tax reductions from 20-50% for periods of up to two years, regarding industrial tax, tax on the application of capital and tax applicable to the acquisition of property intended for investment.

This law also establishes the contractual investment regime, which allows the investor to negotiate directly with the state the tax incentives and benefits.

Investors looking to set up manufacturing at the Luanda-Bengo Special Economic Zone can also expect better incentives as its status offers its own regime of tax, customs, foreign exchange, labour, and migratory incentives.

AR: What are some of the opportunities that Angola offers?

MFP: Besides the oil sector, the projects with the greatest FDI are connected to mining, financial activity, telecoms, civil construction, education, health, tourism, fishing, agriculture, trade, and industry.

Angola's privatisation process, which was recently extended, offers a series of opportunities for foreign investors. The highly successful first phase saw to the privatisation of 92 of the 178 assets. In this new phase we plan to privatise 73 more assets.

For the third phase, we plan to privatise a minority stake in Sonangol, the national oil and gas company, and Endiama, the national diamond exploration and production company. Other assets

Top ten contributors of FDI into Angola (ranked between 2018 and 2023):

1. United Arab Emirates – US\$351.7mn
2. United Kingdom – US\$283mn
3. China – US\$225mn
4. Germany – US\$93.6mn
5. France – US\$36.8mn
6. Belgium – US\$24.5mn
7. Hong Kong – US\$20.5mn
8. Portugal – US\$19.2mn
9. Eritrea – US\$12mn
10. Switzerland – US\$10mn

Data source: ZEE

that will attract international investors include UNITEL, Angola's main telecom company; the most profitable bank in the Angolan market, BFA; the insurance company ENSA; and TV Cabo. These companies should at least begin the privatisation process in 2023.

Currently, the Government's investment focus for the next five years, is agribusiness. The Government plans to invest in energy sustainability via renewable resources to reach a target of 9.9GW of installed generation capacity, and to achieve an electrification rate of 60% by 2025.

There is also a slew of great opportunities in some of the main transport and mobility infrastructures. The Government has called upon private investors to participate in the construction and management of structures in the capital region of Luanda. These opportunities include:

- The new Luanda International Airport which can transport 15 million passengers and 50,000 tons of cargo. Management of the new airport will be handed over to private companies.
- Luanda will also get a new surface metro, with an airport connection to Luanda International Airport which will be operated by a private company or consortium.
- The railway is another of the fundamental sectors for development of the Angolan economy. The Luanda, Lobito and Moçâmedes railroad corridors will be under concession to private entities. ■

Image Credit: ZEE



Galvostahl has two plants at the Viana Reserve.

Nuru's DRC metrogrid drive

Nuru, a renewable energy-powered metrogrid company, has closed a US\$40mn Series B equity funding to allow the construction of 13.7MWp of projects in DRC.

The funding, with an additional US\$28mn expected, will allow the company to expand its operating assets in eastern DRC and help bridge the energy gap in the country (currently less than 20% of the population has access to energy).

The company's utility-scale solar metrogrids, integrated with advanced technology and services, are designed to provide 24/7 reliable and renewable energy to DRC's urban communities. This is expected to help sustain development and foster climate resilience.

The US\$40mn funds come from leading equity investors such as the International Finance Corporation (IFC); the Global Energy Alliance for People and Planet (GEAPP); the Renewable Energy Performance Platform (REPP); Proparco; E3 Capital; Voltalia; the Schmidt Family Foundation; GAIA Impact Fund; and the Joseph Family Foundation.

Jonathan Shaw, co-founder and CEO of Nuru, remarked, "We are thrilled to partner with such a dynamic group of investors who are keen to drive our vision of expanding energy access and transforming five million lives in the DRC. Closing the Series B is a significant milestone in Nuru's journey, but also demonstrates the viability of the metrogrid model in the distributed energy sector in Africa.

"Nuru extends its heartfelt appreciation to the consortium of investors for their visionary support and unwavering commitment to Nuru's vision. Together, we will continue to illuminate lives, drive economic growth, and empower communities across the DRC."

Nuru will immediately begin work on three transformational projects in Goma, Kindu, and Bunia, which will have a combined capacity of 13.7MWp. The Bunia site will become the largest off-grid solar hybrid metrogrid in sub-Saharan Africa.

IFC country manager for the DRC, Malick Fall, commented, "Expanding access to electricity is instrumental to supporting economic growth and improving living standards for people and businesses in the DRC. IFC's support for Nuru will play a pivotal role in helping to bridge the energy access gap by using an innovative business model, new technology and more climate friendly power sources."



Nuru will begin work immediately on three projects in Goma, Kindu, and Bunia.

Image Credit: Nuru

ANGOLA TO RECEIVE FINANCE FOR SOLAR INFRASTRUCTURE

Standard Chartered has announced EU€1.29bn (approx. US\$1.4bn) of financing for the Angolan Ministry of Finance to construct photovoltaic electricity distribution infrastructure.

The new generation systems will support rural villages across the country to become more self-sufficient and less reliant on Angola's main electricity network.

Being developed by the Ministry of Energy and Water, the electrification project will benefit around 203,000 households in the provinces of Moxico, Lunda Norte, Lunda Sul, Bié and Malanje.

48 hybrid photovoltaic generation systems will be funded by the loan, each with energy storage capacities. These will act as minigrids and operate autonomously, providing communities that are not connected to the national grid access to renewable energy. The financing will also support the expansion of the national grid in Malanje and build new lines and networks connecting other municipalities.

The financing is backed by German Export Credit Agency Euler Hermes and the contractor MCA Group is managing the construction and project management. Standard Chartered acted as sole bookrunner, original lender, structuring bank and mandated lead arranger.

Yoshi Ichikawa, head of structured export finance for Europe, Standard Chartered Bank, commented, "We are thrilled to complete the financing of this important project for the Angolan government to supply renewable energy-sourced electricity to local communities. It's another great example of our collaboration with ECAs and contractors to deliver for our clients."

IVECO AND SHELL TARGET ROAD TRANSPORT DECARBONISATION

Iveco Group has reconfirmed its pledge to accelerate the transition to zero-emission mobility with Shell International Petroleum Company.

The two companies signed a memorandum of understanding (MoU) to jointly develop low-carbon and highly-efficient energy solutions. At a meeting in Turin, Italy, Gerrit Marx, CEO of Iveco Group, and Giorgio Delpiano, senior vice president of business mobility at Shell, reaffirmed their commitment to synergic cooperation.

Together, Shell and Iveco will exchange business ideas and opportunities in regards to the decarbonisation of the road transport sector. Iveco is playing a key role in the supply of vehicles and service while Shell is building an infrastructure to help mobility customers switch to low- and zero-carbon energy.

BRIEFS

IRENA Coalition for Action gains new member



The coalition brings together more than 130 leading renewable energy players.

JinkoSolar, a solar module manufacturer, has become the latest member of the IRENA Coalition for Action, a network of leading renewable players dedicated to promoting the uptake of renewables. Through its membership, JinkoSolar hopes to expand its influence and collaborate more closely with the international renewable community. It will help it to participate in global initiatives and projects, share best practices and experiences, and explore solutions alongside other members.

Partners encourage green hydrogen diversity



The MoU sets a solid foundation for joint efforts in digitisation, innovation, and economic reconstruction.

The South African Energy and Water Education and Training Authority (EWSETA) and the Chemical Industries Education and Training Authority (CHIETA) have announced a partnership to drive skills development, innovation and inclusive growth in the energy, water and chemical sectors.

The signed memorandum of understanding is aimed at advancing the role of women and youth in the emerging green hydrogen economy.

HIMOINSA hits 100,000 genset milestone with Yanmar engines

HIMOINSA, a manufacturer of power technology solutions, has commemorated the production of its 100,000th generator set with a Yanmar engine.

Himoinsa and Yanmar began their partnership in 2006 and the relationship intensified in 2015 when HIMOINSA became part of the Yanmar Group by integrating into the Yanmar Energy System business unit. The two companies have collaborated on new projects and product development, further reinforcing their growth strategy.

Takehito Yamaoka, CEO of Yanmar Holdings, said, "I'd like to congratulate all HIMOINSA employees for reaching the manufacture of the 100,000th generator set with a Yanmar engine. Thanks to their efforts, we have propelled Yanmar to a solid position in the power generation sector, and I am sure that this figure will grow significantly every year."

HIMOINSA and Yanmar have been working closely in recent years to reinforce their leadership role in the power generation sector (up to 45kVA). This year they expect to reach the cumulative figure of 110,000 generator sets with TNV engines. Yanmar engines with T4F and Stage V certifications have been selected for HIMOINSA Mobile Power generator sets up to 45kVA in order to minimise environmental impact.

With the goal of continuing to intensify the presence of Yanmar in the HIMOINSA product portfolio, the company recently incorporated the Yanmar AY40 engine for power ratings over 1MW, offering the market one of the most efficient solutions for mission-critical projects.



Image Credit: HIMOINSA

HIMOINSA and Yanmar have been working closely in recent years to reinforce their leadership role in the power generation sector.

ENGIE RECEIVES FUNDING TO ADVANCE MINI-GRIDS IN ZAMBIA

The Facility for Energy Inclusion (FEI), managed by Cygnum Capital, has provided US\$7.5mn of debt to MySol Grid Zambia, a unit of ENGIE Energy Access.

The funding will allow ENGIE to construct 60 mini-grids, connecting more than 40,000 people to electricity in Zambia. This is expected to encourage economic growth and increase socio-economic welfare in the communities affected.

Carmen de Castro, fund manager at Cygnum Capital Asset Management, commented, "Small-scale renewable infrastructure and mini-grids are fundamental in driving economic and social development across Africa. This inaugural transaction in the mini-grid sector demonstrates FEI's commitment to improving energy access and supporting transactions with high development impact designing innovative structures with a commercial approach."

Gillian-Alexandre Huart, CEO of ENGIE Energy Access, added, "Attracting non-recourse long-term debt financing for mini-grid projects is proof of the viability of the business model and the legitimacy of renewable mini-grid projects in the rural electrification landscape. This financing will contribute to the Sustainable Development Goals of the United Nation by providing almost 5MW of affordable, reliable, and sustainable clean energy to more than 40,000 beneficiaries living in rural areas in Zambia."

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Zambia's electric mobility landscape

Capitalising on its vast renewable energy resources, Zambia is gearing up for an electric mobility revolution that offers meaningful carbon reductions and a promising investment landscape, says Alexandros Germanis, partner at Greencrowd Partnership LLP.

Despite infrastructural and regulatory challenges, a number of collaborative initiatives are in development such as the Zambia Green Outcomes Fund (ZGOF) and the Zambia Electric Mobility Innovation Association (ZEMIA). The initiatives which greenCrowd is involved in are laying the foundations for the widespread adoption of electric vehicles (EVs), set to reduce the country's dependence on foreign exchange draining fossil fuels, whilst advancing technological innovation. Transitioning to electric transportation will accelerate Zambia's journey towards achieving global sustainability goals.

With an electricity generation mix that is over 85% renewable, the potential for tangible carbon reductions by transitioning from internal combustion engines (ICE) to EVs is significant. The replacement of each ICE car has an immediate carbon reduction benefit. The rationale for electrifying transport and embracing EVs presents an opportunity for economic growth, reduced fuel imports, job creation, and technological advancements.

Overcoming challenges

Despite the country's green energy advantage, Zambia faces obstacles in terms of charging and grid infrastructure and regulatory frameworks. The underinvestment in grid infrastructure poses limitations on charging infrastructure expansion. Without forward planning by the country in developing tariff structures which

are affordable and cost reflective may exacerbate this issue.

Additionally, the current regulatory environment is not fully equipped to support the decarbonisation of transportation. That said, ZESCO, the state-owned utility, is undergoing a financial turnaround strategy. Careful planning and coordination will ensure EVs can successfully be integrated into the power grid. For the decarbonisation of transportation to happen, a holistic approach is needed that looks across both energy and transportation simultaneously.

To address these strategic challenges, UK firm greenCrowd is working together with a number of organisations to accelerate the decarbonisation of transportation. ZGOF itself is an initiative being undertaken in collaboration with local finance and sustainability partners. The emerging fund has earmarked electric mobility as a key investment segment. To demonstrate viability, progress in 2023 has included the commissioning of Zambia's first fast charger at Foxdale Court as well as the running of an EV taxi pilot. The pilot has covered roughly 1,000 trips and 17,000 km saving more than 1,700 litres of fuel and over 100 kg



Richard Mwape from Kukula Capital who manages the EV taxi pilot and Alexandros Germanis.

Image Credit: greenCrowd

of CO₂ emissions. There are plans to scale this up and one of the successful outcomes of the pilot has been the demonstration of 80% savings compared to ICE vehicles.

In parallel, contributive efforts are underway with the establishment of ZEMIA earlier this year. A local initiative by mobility, energy and sustainability experts, it aims to guide the development of policies and frameworks that will support the growth of electric mobility in the country. There is momentum building, with ZEMIA already being awarded a grant to further ZAMBIAeMobilize, a project to accelerate zero-emission public transportation in Zambia. By bringing together key stakeholders, including government entities, private sector players, and international partners, this association is set drive the necessary changes to create an enabling environment for EVs in Zambia.

These initiatives are building on groundwork being laid sector-wide, involving the private, public and non-profit sectors, offering hope for the development of supportive policies and a thriving EV ecosystem.

Efforts by stakeholders to develop the sector are bearing fruit already. Despite the current scarcity of EVs and limited charging infrastructure,

the Zambian government has taken steps to incentivise EV adoption. Financial incentives for EVs have been introduced, with customs duties being reduced on electric vehicles and electric motor cycles to 15% and 25% respectively while ICE vehicles import duties have remained at 60%. Efforts to raise consumer awareness about the long-term cost savings and environmental benefits of EVs are also underway.

Zambia's electric mobility sector holds immense promise, given its abundant renewable energy resources and the potential for tangible carbon reductions. Addressing the challenges related to charging infrastructure, regulatory frameworks, and grid investments will accelerate the roll-out of EVs across the country. The development of supportive policies and local capacity will enable Zambia to realise a sustainable and thriving EV ecosystem. With continued commitment and strategic planning, Zambia can embrace electric mobility as a catalyst for its sustainable development and contribute to the global green transition.

Zambia is a fertile ground for collaboration and innovation. Locally led initiatives are amplified by international expertise, blending local know-how with global best practices.

greenCrowd and its partners look forward to making new announcements on our progress in helping Zambia decarbonise its transportation. ■

“Zambia's electric mobility sector holds immense promise.”

ALEXANDROS GERMANIS, PARTNER AT GREENCROWD PARTNERSHIP LLP

Reliable energy powering businesses

For critical businesses across Africa, a reliable source of power is not a luxury, but a necessity. Minhaj Zia reports.

The persistent challenge of loadshedding has long been a stumbling block for businesses, hindering operations and disrupting productivity. Africa, with its unique energy landscape and infrastructure limitations, faces significant hurdles in providing a consistent and reliable power supply.

Loadshedding, a frequent occurrence in many African nations, hampers productivity and poses operational risks to industries operating within the region. This is particularly pertinent for facilities such as data centres, where uninterrupted power supply is not a luxury, but a necessity.

In an effort to evolve the landscape of uninterruptible power supply (UPS) systems, AEG Power Solutions (AEG PS), a global provider of power systems and solutions, has introduced a new line of UPS systems designed to safeguard critical businesses against power disturbances. These systems, featuring a full IGBT architecture and industrial-grade built quality, offer a reliable power backup for sectors including refining and petrochemical industries, transportation infrastructures, and manufacturing facilities. The Protect 8 PLUS UPS, for instance, offers a wide range of configurations, accommodating varying power demands and battery voltages, while providing high-input power factor and low harmonic current rejection. These attributes address the specific needs of African businesses in sectors heavily affected by inconsistent energy supply.

Certainly, the adoption of UPS systems goes beyond mere power backup; they boast strong capabilities that enhance operational efficiency and safety. With built-in static bypass switches, systems like Protect 8 PLUS deliver exceptional short-circuit capabilities



Image Credit: Adobe Stock

UPS systems can be used to safeguard businesses against power losses.

and output short-circuit clearance, ensuring uninterrupted power supply to critical loads.

Moreover, these systems achieve up to 90% efficiency in double conversion operation, effectively isolating input and output while optimising power utilisation. AEG Power Solutions has also prioritised ease of maintenance, allowing quick servicing and component replacement without disrupting the unit's functionality. The rigorous compliance of Protect 8 PLUS with industry standards, including the International Association of Oil & Gas Producers (IOGP) JIP33 requirements, cements its position as the go-to solution for heavy-duty industries operating in challenging environments.

Sustainable power solutions

As the quest for reliable energy in Africa gains momentum, Rolls-Royce has taken a significant step by approving its mtu Kinetic

PowerPacks, based on the mtu Series 4000 and 1600 diesel engines, for use with Hydrogenated Vegetable Oil (HVO) and other synthetic diesel fuels of the EN15940 standard. This development represents a promising development for Africa's transition towards cleaner energy solutions. It enables the operation of dynamic uninterruptible power supply (DUPS) systems in an environmentally friendly manner, as HVO can reduce carbon emissions by up to 90% compared to fossil diesel. With applications across diverse sectors, from data centres to hospitals and production plants, HVO offers a substantial reduction in both carbon footprint and local emissions.

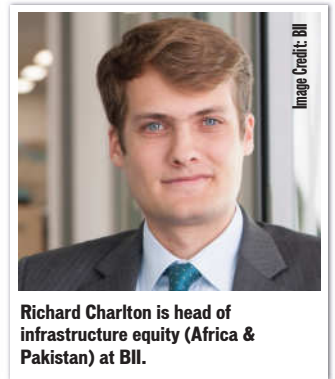
The compatibility of mtu Kinetic PowerPacks with HVO fuels has been extensively validated through comprehensive tests, ensuring that the use of HVO has no adverse impact on engine performance. The systems exhibit the same dynamic

behaviour and reliability with HVO as they do with fossil diesel, assuring end-users of a seamless transition to a more sustainable energy source. HVO, derived from renewable resources such as waste vegetable and animal fats, offers a drop-in fuel solution without requiring modifications to existing infrastructure or engine hardware.

Indeed, the rise of UPS systems in Africa is a response to the pressing need for reliable power backup and enhanced energy resilience. These systems, offered by companies like AEG Power Solutions, cater to the unique energy landscape and challenges faced by businesses operating within the continent. By providing uninterrupted power supply, minimising disruptions, and embracing sustainable energy sources, UPS systems empower African businesses to overcome energy challenges and thrive in a rapidly evolving economic landscape. ■

Holding the line with hydro

Richard Charlton, head of infrastructure equity (Africa & Pakistan) at British International Investment (BII), explores why his organisation is continuing to invest in hydropower on the continent.



The vital importance of development finance in Africa's future has become very clear since the pandemic and has come under sharper focus in relation to the Sustainable Development Goals as the effects of climate change are increasingly felt.

According to African Development Bank's *African Economic Outlook 2023*, the urgency to fast-track climate action and drive the continent's inclusive, sustainable development is pressing and estimated that private sector financing will need to grow annually by 36% until 2030 to close the continent's climate finance gap (estimated at US\$213.4bn). To address Africa's climate financing needs, it reported, as much as US\$2.8 trillion is required across 2020-2030. With the addition of the United Nations' estimate that US\$1.3 trillion is required annually to achieve the Sustainable Development Goals, "the magnitude

of Africa's sustainable development financing requirements becomes starkly apparent."

Speaking from the perspective of BII, Charlton described to *African Review* the vital role organisations such as his are playing in this struggle, especially in regard to the continent's energy development.

Charlton commented, "We have 70 years of participation in Africa's energy history and while some global investors can look at different markets and choose their risk-return, we are, by mandate, focused exclusively on Africa, Asia and the Caribbean. At this point, we have an interest in roughly one out of every three utility-scale IPPs in Africa – whether that is through funds that we invest into which then invest in projects, our debt business, or our direct equity investments. I think this tells you how critical development finance institutions such as BII are to the power development of Africa. Our hope is to continue to bring

more commercial capital into the continent and, one day, not be needed."

Faith in hydropower

One power source that has received its fair share of attention and investment in Africa's energy history is hydropower, which for many countries in Africa such as Ethiopia, Malawi, Uganda and Zambia, accounts for the bulk of energy generation.

In recent years, there are indications that the pull towards hydropower has diminished slightly against concerns around practicality in a changing climate and the growing influence of solar and wind. Such a topic was cause for debate at the recent Africa Energy Forum, where Charlton participated in a panel discussing hydropower's merits, drawbacks and future role. Certainly, while BII has a hand in and is pursuing many avenues of energy infrastructure development

on the continent, it has not neglected hydropower as a source of power generation but instead has further demonstrated its faith into this resource to the tune of US\$200mn worth of investment alongside Norfund and Scatec ASA, announced last year.

Explaining the traits that still make hydropower an attractive option for the continent, and why BII has committed to further investment, Charlton commented, "One of the great things about hydropower is longevity. Yes, you may need to replace turbines after a certain period but civil structures last and there are assets still operating in Africa which are more than 100 years old. Once you have built them – barring occasional maintenance – they are effectively offering nearly free energy as there are very limited running costs.

"In the last few years there has been more interest in private investment into hydropower. One of

the reasons for this is that, with everyone looking to renewables, solar and wind are certainly stealing the spotlight from a headline tariff perspective and governments are considering how to bring more of these online, but there are system-level challenges which hydropower helps with. For some countries in Africa more advanced in this journey with solar and wind – such as Kenya and Senegal – there has emerged difficulties associated with integrating these intermittent renewables. While wind and solar may represent a cheaper form of renewable energy generation, this is only the case when they are able to produce, and you often require storage capacity as well. It may be all well and good having this generation capacity but if the grid is unable to produce every time there is a cloud going over or a calm week or at peak hours after sunset, that is an issue.

“In this way, the kilowatt hours produced by hydropower are not the same produced by alternative renewable sources because it depends when they are produced and how flexible they are. In a net zero world where wind and solar require regulation, batteries can provide shorter duration storage while hydropower can play an essential role in the form of long duration storage, with a regulating function for the grid and providing peaking power. In this way its importance is less about how much

energy but more about when it is produced.”

In relation to the climate, Charlton continued, while some hydropower reservoirs do have large emissions – microbial processes that decompose organic matter into greenhouse gases for example – BII focusses on those hydropower schemes where emission levels are Paris-aligned and maintains that there are few scenarios where hydropower does not form part of the net zero puzzle.

He also explained that while climate change is giving rise to more volatile weather, this does not necessarily mean less rain and less power production in some areas and in some lakes and rivers in East Africa specifically, water levels have actually risen in the last few years, potentially due to tectonic movements. In any case, many of the projects in Africa are built downstream from large natural lakes that can smooth through periods of uncertainty due to their scale – and, as hydropower moves more to a “peaking” than a baseload role, it will need to produce fewer kilowatt hours (albeit at those moments when energy is most needed) and thus potentially be more resilient to lower water scenarios. Moreover, these significant structures can also provide a regulating function against floods, acting as a defence that can reduce damage and contributing to countries’ adaptation and resilience to climate change.

“ The kilowatt hours produced by hydropower are not the same produced by alternative renewable sources.”

RICHARD CHARLTON, HEAD OF INFRASTRUCTURE EQUITY (AFRICA & PAKISTAN) AT BII

Reservoirs proved their worth in this capacity in Norway, 1995, when the scale of destruction was significantly reduced.

The endurance of hydropower infrastructure in some ways offsets the longer construction periods of such projects as well. “When you look at what is needed, in some countries, hydropower just makes sense. It does take time, and that needs to be factored into planning, but with a well-planned system you can factor this in and will be able to avoid crisis.”

Walking the talk

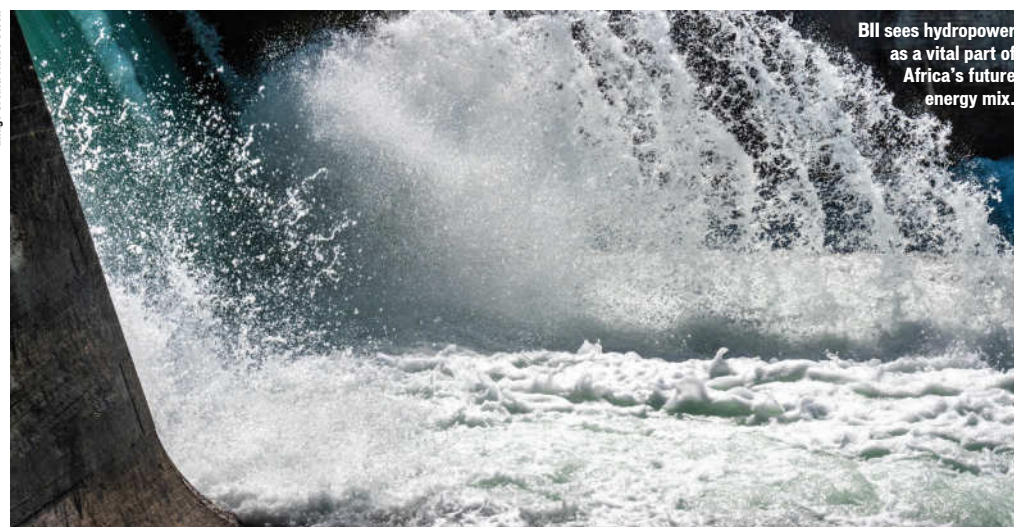
Charlton was keen to stress that while BII is not wedded to hydropower – it has invested in Globeleq, for instance, which is active in wind, solar, gas, and geothermal – it does see it as a vital part of Africa’s future energy mix and has certainly put its chips down to back assertion up.

“The US\$200mn announced last year is a figure over time, an envelope to be invested in

opportunities as they emerge,” Charlton remarked. “However, two really important projects for us are the proposed 205MW Ruzizi III hydropower plant on the border of Rwanda and DRC, and the 350MW Mpatamanga project in Malawi which we are looking to get into construction in the next year or couple of years.

“The first, co-developed by Scatec and the Aga Khan Group through its subsidiary IPS, with both of whom BII has joint ventures, is a landmark project in that the power will be split between Rwanda, DRC and Burundi equally, providing reliable power and a project of regional significance. In Malawi, the hydropower project is a joint development between EDF, Scatec (in its JV with Norfund and BII), the IFC and the Government of Malawi, again to provide peaking power. We believe it can help form the energy backbone for the country, providing peaking power to help integrate more renewables over time and will help regulate water flows on the Shire River which has seen significant adverse flooding in recent years.

“These are on the horizon but we are already involved in a number of prospects on the continent, from small hydro projects to larger companies such as Bujagali Energy which operates a 250MW hydropower plant on the Nile River in Uganda. We are not saying hydro at the cost of anything else – we are invested in all kinds of power generation – but Africa’s energy mix will likely incorporate the full spectrum and hydropower, we think, is an essential part of that,” Charlton concluded. ■



BII sees hydropower as a vital part of Africa's future energy mix.

Image Credit: Adobe Stock

ANKER UNVEILS SOLUTIONS TO PERSISTENT POWER INSTABILITY

Anker, a global leader in charging technology, has announced the launch of its PowerHouse 521 and 535 models in South Africa, providing a dependable and affordable solution to the country's persistent power instability.

The new lineup of high-capacity PowerHouse stations is powered by a Lithium Iron Phosphate (LiFePO4) battery, like those used in modern electric vehicles, and offers six times more use than conventional batteries.

LiFePO4 batteries also offer improved discharge and charge efficiency compared to Lithium-Ion. The stations have been designed using an automotive-grade aluminum alloy that is corrosion and temperature-resistant, providing unmatched durability to withstand the harshest of climates.

Furthermore, to ensure energy optimisation,

the PowerHouse series features an energy-saving mode that automatically switches off the station once all connected devices are fully charged. Alternatively, users can disable the energy-saving mode to ensure that their devices are charged for extended periods.

Moreover, with a built-in LED light, the station series can keep families safe in the dark when there is a blackout. An easy-to-read LED display also shows the remaining battery capacity, the current input, and output status, as well as estimated recharge time on the front of the stations.

Key features of the range include pass-through charging, a substantial 5-year warranty, and a 10-year lifespan, providing customers with a long-term, reliable solution for their power needs. For the convenience of its customers,



Image Credit: Anker

The Anker Portable Power Station.

the PowerHouse Power Stations can be purchased online from leading outlets including Takealot, Incredible Connection, Hi-Fi Corp, ORMS among others.

Topsoe and AVEVA to develop green hydrogen

AVEVA, a global leader in industrial software, driving digital transformation and sustainability, has been selected by Topsoe, a leader in carbon emission reduction technologies, to help fast-track the development of decarbonisation solutions needed for the production of green hydrogen and other carbon neutral fuels. Topsoe will use AVEVA Process Simulation to model its Solid Oxide Electrolyzer Cells (SOECs) with a view to optimising their design and developing their control strategy.

To achieve global NetZero targets, a rapid decarbonisation of all industries is essential, however not all of them can be easily electrified. These industries are often referred to as the hard-to-abate sectors and include heavy transportation such as shipping and aviation but also carbon intensive industries like steel manufacturing and petrochemical production. The challenge is finding and replacing fossil fuels with carbon-free alternatives. This is where Topsoe can help, and by using Topsoe's highly efficient SOEC based electrolyzers, it's possible to produce the green hydrogen needed to decarbonise many of these carbon intensive industries. Time is of the essence, and with its flexibility, open modelling, and ease of use, AVEVA Process Simulation is helping accelerate the energy transition by enabling Topsoe's engineers to design and optimise their electrolyzers with increased speed and efficiency

Tobias Scheele, senior vice president of Products at AVEVA, said, "We are pleased to expand our deep relationship with Topsoe as the Power-to-X industry develops. The successful energy transition will depend on how quickly industries can deliver low-carbon solutions at scale. We designed AVEVA Process Simulation to accelerate the engineering cycle, so innovations can be executed fast and deliver immediate carbon reductions."

As of 2021, global electrolyzer manufacturing capacity is insufficient to meet net-zero requirements, according to the International Energy Agency. At present, alkaline and proton exchange membrane electrolyzers account for the majority of production, with less than 0.1% of today's hydrogen produced through electrolysis. As renewable energy becomes increasingly available at lower costs, Topsoe's ultra-high-efficiency SOEC electrolyzers help maximise the delivery of clean hydrogen: the units deliver up to 30% more hydrogen from the same electricity volume at a 30% lower cost.



Image Credit: AVEVA

Tobias Scheele, SVP of Products, AVEVA.

METSO ENHANCES ENERGY TRANSITION WITH RECYCLING

Metso has worked on further strengthening its position as a technology and solutions provider for the battery minerals industry. With the recent launch of the battery black mass recycling process, Metso now offers complete processes and services for battery minerals production - from minerals extraction to refined battery chemicals and end-of-life battery black mass recycling.

"Today, we can provide sustainable technology and equipment for the entire lithium, nickel and cobalt production chains. The project scopes can range from equipment packages to plant deliveries. Equally important is the fact that we can support our customers in process design with our comprehensive testing and research capabilities," explained Mikko Rantaharju, vice president, hydrometallurgy at Metso.

Lithium is one of the most used minerals in battery manufacturing. It can be extracted either from brines or lithium-bearing ores, such as spodumene. Metso's offering covers complete processes for both. For the hard-rock based spodumene concentrates, Metso has developed an acid- and sulphate-free soda pressure-leaching process. It is one of the most environmentally sustainable processes available for lithium production.

Besides lithium, other critical minerals like nickel and cobalt play an important role in the battery manufacturing chain, either in battery chemistry or in other components.

Recycling of battery black mass is becoming an important means to complement primary battery metals supply and to reduce the carbon footprint of the battery supply chain.

Perkins pursues Nigerian growth

Perkins Engines Company Ltd. has appointed Delta Industrial Equipment Ltd. as an authorised distributor in Nigeria to support customers in the country.

Delta will utilise its business footprint in Nigeria to provide required service and support to Perkins' customer base.

Always delivering excellence

Image Credit: Mantrac

Delta, which was already an established Perkins distributor supporting 11 territories through Africa and the Middle East, became an authorised Perkins distributor for Nigeria, effective November 2022. With an extensive experience across the region, Delta is headquartered in Lagos and has three further branches in Victoria Island, Port Harcourt and Abuja.

The company has an existing business footprint in Nigeria, which it is utilising to quickly provide the required service and support to Perkins' customer base across the country. Delta Industrial Equipment Limited will be led by the experienced Sherif Aly, who boasts a wealth of knowledge on both the country and customer requirements, having previously managed and grown key business units within Nigeria for the wider Delta group.

Enhanced customer support Jaz Gill, vice president of global sales, marketing, service and parts at Perkins, commented, "Nigeria is an important territory for our business due to the number of Perkins-powered machines operating in the territory and therefore the parts and service support we can offer to our customer base.

"I'm very pleased we have been able to appoint Delta Industrial Equipment as a distributor in

Nigeria. Their in-depth knowledge of the region, their existing local presence and their ongoing alignment with Perkins' distribution excellence principles means they are ideally suited to take on this additional territory."

Ayman Ezz El Din, group power systems director at Delta, added, "We are very pleased to be appointed as a Perkins distributor in Nigeria and to be able to offer the range of Perkins products to our

customers. As an established dealer of leading equipment brands and genuine parts in Nigeria for over 20 years, we are proud to add the Perkins brand to our portfolio."

Finally, Tarek Nobar, head of Delta Power Systems, exclaimed that it is a great pleasure for Delta to have received the appointment as distributor. He remarked, "This step reflects their trust in our work in the other territories and our knowledge in the Africa market, including Nigeria. All our teams are excited to start working and provide an excellent service to the brand, to ensure our valuable customers the utmost satisfactions." ■

*Customers looking to contact Delta can do so at their HQ in Lagos, or reach out to the details below:
Email: perkins@deltanigeria.com
Phone: +234 (0) 7 000 750 750*

“Nigeria is an important territory for our business due to the number of Perkins-powered machines operating in the territory.”

JAZ GILL, VICE PRESIDENT OF GLOBAL SALES, MARKETING, SERVICE AND PARTS AT PERKINS

South Africa continues construction of the multi-million Princess Mkabayi Mall

Construction on the Princess Mkabayi Mall in Vryheid, KwaZulu-Natal, is underway, according to its builders the Moolman Group.

The company said that the mall's development is progressing quickly, with earthworks having commenced and the mall already 75% let – almost 18 months ahead of its October 2024 opening.

This project has been years in the making, with the original sod-turning ceremony taking place in 2021. It has now gained pace, with the official site handover occurring and a site visit with shareholders, municipal representatives, and local role-players on 27 June this year. The mall is named after a Zulu warrior princess, and it will be single-level 30,000 sq m shopping centre. It is expected to be the biggest consolidated retail offering in an almost 100-kilometre radius and will also form part of a larger mixed-use development that aims to eventually include an office park, a hotel and casino and upmarket apartments. It is co-owned by the Moolman Group, Twin City, JB Holdings, and Green Giraffe.

Moolman Group's developments director, Steph Beyers, said, "We are pleased and proud to move ahead on this long-awaited project and further encouraged by the enthusiastic retailer response. This is an incredible achievement for all."

The mall will be solar-powered and equipped with a generator to ensure non-stop shopping during load shedding, according to Ryno de Leeuw, CEO of Twin City Development. "Adding to its environmentally friendly credentials, the mall will also have its own water plant from which water will be used in the irrigation system for the gardens," said de Leeuw.

"Shoppers at Mkabayi Mall will be able to enjoy free Wi-Fi, charging stations, workstations and comfortable seating," added Moolman Group's retail director, Sonke Moolman-Pautz. "The mall will include a large entertainment space and play area for children, a central meeting area, and eateries for all tastes." Ultimately, said Roux Shabangu of JB Holdings, Princess Mkabayi Mall will "quench the need for a retail facility in the region and become a sought-after and convenient shopping destination for the people of its area and its province." The mall has been designed by MDS Architects.



The mall will measure 30,000 sq m in area.

Image Credit: Moolman Group

CATERPILLAR CELEBRATES EXCAVATOR MILESTONE

Caterpillar has announced the production of its 50,000th wheel excavator, a Cat M318 Next Gen model.

In 1984, Caterpillar, Eder and Zeppelin Baumaschinen, the Cat dealer in Germany, introduced a new wheeled excavator line, offering four models under the Cat Eder brand. In 2012, the company had 25,000 excavators, and in 11 years it has added another 25,000.

Commenting on this milestone, Brian Abbott, vice president of product management for the excavation division said, "Offering quick movement on the job site and from site to site without damaging the ground, the wheel excavator proved to be a game changer for contractors working in congested areas and markets with mature infrastructure."

"The advanced hydraulic design, plumbed differently than conventional excavators, allows them to go beyond digging to operate a range of hydraulic work tools to increase application flexibility. We are pleased to present our 50,000th production wheel excavator to our longtime customer, Wolff & Müller," he added.

The flagship Cat M318 Wheel Excavator offers a well-balanced design of size and performance. It is compact enough to work in tight spaces but delivers high performance for larger projects, making it the go-anywhere, all-around performer.

Recent design advancements offer increased fuel economy, higher swing torque, improved visibility and maintenance parts savings over the previous model series and a suite of technology such as Cat Grade, Cat Payload and Cat E-Fence.

Remote diagnostics tools – Remote Troubleshoot and Remote Flash – help the M318 deliver high performance and maximum efficiency with minimum downtime.

INTERCEMENT TO SELL ITS AFRICA BUSINESS

InterCement Participações S.A. has reached an agreement with Huaxin Cement Co. Ltd., regarding the sale of its business in Mozambique and South Africa. The sale will allow the company to focus on its core markets in South America, InterCement said. This transaction is subject to customary conditions precedent, including, among others, regulatory approvals in China, Mozambique and South Africa.

The agreement sets the enterprise value of the Africa Business at US\$265mn. The company anticipates using the net proceeds from the sale, which will be determined after the customary price adjustments at closing, to repay a portion of its outstanding indebtedness. After the consummation of this sale the company will own 23 cement plants, with an aggregate installed capacity of approximately 29 million tons per year. InterCement appointed J.P. Morgan as its financial advisor to the sale of its operations in Egypt, Mozambique and South Africa.

► BRIEFS

14Trees launches 3D printer for construction

Image Credit: Adobe Stock



3D printing can significantly reduce construction costs.

14Trees, a joint venture between Holcim and British International Investment, has announced the launch of its new construction-ready 3D printer, Iroko. The 14Trees printer specialises in single to two-storey residential and commercial applications and it will improve construction speed, cost, and flexibility – scaling up digital automation to build resilient and affordable housing, education infrastructure and commercial real estate worldwide.

Pirta tests solar simulator

Pirta tested the performance of its climate 'cooling paint' using a solar simulator. Its paint formula has been validated by the University of Leeds with provisional results



The paint can reduce temperature by 64°C.

indicating exceptionally high emissivity, or ability to release heat, reducing surface temperature by up to 64°C (114.4°F). The technology can be used in the construction, shipping, logistics, agriculture and energy industries, which are looking to slash emissions from energy-dependent cooling systems.

CONSTRUCTION & MINING Buyers' Guide

Section One: Listings by Category

Section Two: Suppliers

Section Three: Agents & Subsidiaries in Africa

Please mention African Review when contacting your supplier

Section One: Listings by Category

AIR COMPRESSORS

CANTONI MOTOR S.A.
Coelmo SpA
Cummins Power Generation
Doosan Portable Power
JMG LIMITED

AIR CONDITIONING

JMG LIMITED

Asphalt Plant

Ciber Equipamentos
Rodovarios Ltda.
Ermont SAS
Marini S.p.A.
Parker Plant Ltd.
Wirtgen Group

Attachments and Accessories

Doosan Bobcat EMEA s.r.o.
Attachments and Accessories
Magni Telescopic Handlers
Wirtgen Group

Backhoe Loaders

Doosan Bobcat EMEA s.r.o.
JCB Sales Ltd

Batching Plant

Carmix - Metalgalante S.p.A.
Elkon Concrete Batching
Plants
Jessop & Associates (Pty) Ltd.
Marini S.p.A.
Masa GmbH
Vortex Hydra S.r.l.

Block/Tile- Making Equipment

Elkon Concrete Batching
Plants
Jessop & Associates (Pty) Ltd.
Masa GmbH
Ormonde Machinery Ltd.
Vortex Hydra S.r.l.

Breakers

Doosan Bobcat EMEA s.r.o.
Fritsch GmbH
Indeco Ind S.p.A.
Jubaili Bros
Lovato Electric S.p.A.

BUILDINGS

EEC Group (Engineering
Enterprises For Civil & Steel
Constructions S.A.E.)
Mytilineos S.A.
Topcon Positioning Middle
East and Africa FZE

Ceramic And Heavy Clay Machinery

ACIMAC – Association of
Italian Manufacturers of
Machinery and Equipment
for Ceramics

Compaction Equipment

JCB Sales Ltd
Wirtgen Group

Complete Solutions for Electrical Needs

Fronius International GmbH
JMG LIMITED
Jubaili Bros
Lovato Electric S.p.A.
Mytilineos S.A.

Components and Accessories

Cat Lift Trucks
IMECO Handelsgesellschaft
m.b.H.
Rossi S.p.A.

COMPONENTS AND SPARE PARTS

BLUMAQ SOUTH AFRICA
Marelli Motori S.p.A.
Rossi S.p.A.

Concrete

Doosan Bobcat EMEA s.r.o.

CONCRETE EQUIPMENT

Doosan Bobcat EMEA s.r.o.
Elkon Concrete Batching
Plants
Masa GmbH
Parker Plant Ltd.
Vortex Hydra S.r.l.
Wirtgen Group

Concrete Equipment - Other

Carmix - Metalgalante S.p.A.
Doosan Portable Power
Jessop & Associates (Pty) Ltd.
Masa GmbH
RATEC GmbH
Vortex Hydra S.r.l.

Concrete Pumps

Elkon Concrete Batching
Plants
RATEC GmbH

CONSTRUCTION VEHICLES

Bell Equipment South Africa
DEUTZ AG
Kanu Equipment Africa
ROKBAK
Watermaster | Aquamec Ltd

Construction Vehicles - Other

SEVA Switchgear Pvt. Ltd.

CONSULTANCY SERVICES

Continental ContiTech
Cummins Power Generation
IMECO Handelsgesellschaft
m.b.H.
RATEC GmbH

Conveyor Systems

Continental ContiTech
CANTONI MOTOR S.A.
Keestrack n.v
Multi-Tech Services (WA) Limited
Ormonde Machinery Ltd.
Parker Plant Ltd.

Cranes

CANTONI MOTOR S.A.
CONDRA (PTY) Ltd
Liebherr- Export AG

Crushing, Screening and Washing

CANTONI MOTOR S.A.
CDE Group HQ
Fritsch GmbH
Keestrack n.v
Multi-Tech Services (WA) Limited
Ormonde Machinery Ltd.
Parker Plant Ltd.
Rockster Austria International
GmbH
Terex GB Limited
Volvo Penta
Wirtgen Group

DEMOLITION EQUIPMENT

Caterpillar
Doosan Bobcat EMEA s.r.o.
Doosan Portable Power
Indeco Ind S.p.A.
Rockster Austria International
GmbH

Diesel Driven

Doosan Portable Power

Drilling - Other

Doosan Portable Power
IMECO Handelsgesellschaft
m.b.H.
MAXMASS Limited

Drilling Machinery and Plant

BAUER Technologies South
Africa (PTY) Ltd
CANTONI MOTOR S.A.
Caterpillar
Doosan Portable Power
IMECO Handelsgesellschaft m.b.H.

Dump Trucks and Haulers

Caterpillar
Ormonde Machinery Ltd.

EARTHMOVING EQUIPMENT

Bell Equipment South Africa
BLUMAQ SOUTH AFRICA
Caterpillar
DEUTZ AG
Doosan Bobcat EMEA s.r.o.
JCB Sales Ltd
Kanu Equipment Africa
MB S.p.A
ROKBAK
Topcon Positioning Middle
East and Africa FZE

Earthmoving Equipment - Other

BLUMAQ SOUTH AFRICA
Liebherr- Export AG
SEVA Switchgear Pvt. Ltd.
Wirtgen Group

Electric

CANTONI MOTOR S.A.
Lovato Electric S.p.A.
Marelli Motori S.p.A.

Engines, Components and Accessories

CANTONI MOTOR S.A.
Caterpillar
Jubaili Bros
Perkins Engines Company
Limited
Volvo Penta

Equipment

CDE Group HQ

Excavators

JCB Sales Ltd
Watermaster | Aquamec Ltd

Fabrication and Structures

EEC Group (Engineering
Enterprises For Civil & Steel
Constructions S.A.E.)

Fencing

Interplast Limited
Metallurgica Abruzzese
S.p.A.

Formwork

RATEC GmbH

Freight/Logistics

M+R Spedag Horizon Ltd

Generator Sets

Clarke Energy
Coelmo SpA
Doosan Portable Power
Fronius International GmbH
Generac Mobile Products
JMG LIMITED
Jubaili Bros
KOHLER
LINZ Electric SPA
Lovato Electric S.p.A.
Marelli Motori S.p.A.
Mytilineos S.A.
Visa S.p.A.

Grinding Equipment

CANTONI MOTOR S.A.
Fritsch GmbH

Hoists

CANTONI MOTOR S.A.
CONDRA (PTY) Ltd

Insulation Panels

EEC Group (Engineering
Enterprises For Civil & Steel
Constructions S.A.E.)

Lift Trucks

Cat Lift Trucks

LIFTING EQUIPMENT

Bell Equipment South Africa
CANTONI MOTOR S.A.
CONDRA (PTY) Ltd
DEUTZ AG
HAULOTTE GROUP
Liebherr- Export AG
Magni Telescopic Handlers
ROKBAK
Volvo Penta

Lighting Masts/Towers

Doosan Portable Power
EEC Group (Engineering
Enterprises For Civil & Steel
Constructions S.A.E.)
Generac Mobile Products
Jubaili Bros
KOHLER
LINZ Electric SPA

Loaders - Other

Doosan Bobcat EMEA s.r.o.

Management Systems

Continental ContiTech

Materials

Interplast Limited

Mechanical

Mytilineos S.A.

Mini-Excavators

Doosan Bobcat EMEA s.r.o.

Mixing

CANTONI MOTOR S.A.
Fritsch GmbH
Masa GmbH

Mobile Mixing Plant

Carmix - Metalgalante S.p.A.
Doosan Bobcat EMEA s.r.o.
Elkon Concrete Batching
Plants
Ermont SAS
Marini S.p.A.

MINING SORTING EQUIPMENT

TOMRA Sorting GmbH

MOBILE POWER SUPPLY UNITS

Caterpillar
Coelmo SpA
Cummins Power Generation
DEUTZ AG
Doosan Portable Power
Generac Mobile Products
JMG LIMITED
KOHLER
LINZ Electric SPA
Mytilineos S.A.
Visa S.p.A.

Motors/Drivers/Controls

CANTONI MOTOR S.A.
Marelli Motori S.p.A.
SEVA Switchgear Pvt. Ltd.

Other Materials Handling

Cat Lift Trucks
CONDRA (PTY) Ltd
Multi-Tech Services (WA) Limited
SEVA Switchgear Pvt. Ltd.

Other Site Equipment And Materials

Coelmo SpA
Cummins Power Generation
Doosan Bobcat EMEA s.r.o.
Doosan Portable Power
Generac Mobile Products
Wilhelm Layher GmbH & Co KG

Piling

BAUER Technologies South Africa (PTY) Ltd
IMECO Handelsgesellschaft m.b.H.
Watermaster | Aquamec Ltd

Pipe and Cable Detecting Systems

Interplast Limited

Pneumatic

Doosan Portable Power

PUMPING EQUIPMENT

Varisco S.r.l
Visa S.p.A.
Watermaster | Aquamec Ltd

Pumping Equipment - Other

CANTONI MOTOR S.A.
Interplast Limited
Multi-Tech Services (WA) Limited
Varisco S.r.l

Quarrying

CDE Group HQ
Doosan Portable Power
Keestrack n.v
Magni Telescopic Handlers
Terex GB Limited

Raw Materials - Other

Multi-Tech Services (WA) Limited

Recycling

CDE Group HQ
Doosan Bobcat EMEA s.r.o.
Elkon Concrete Batching Plants
Fritsch GmbH
Indeco Ind S.p.A.
Keestrack n.v
Marini S.p.A.
Ormonde Machinery Ltd.
Rockster Austria International GmbH
Wirtgen Group

Rental Equipment

BAUER Technologies South Africa (PTY) Ltd
Caterpillar
Cummins Power Generation
Visa S.p.A.

ROAD BUILDING EQUIPMENT

Caterpillar
Ciber Equipamentos
Rodovarios Ltda.
Doosan Portable Power
Ermont SAS
Topcon Positioning Middle East and Africa FZE

Pavers

Wirtgen Group

Road Building Equipment - Other

Doosan Bobcat EMEA s.r.o.
Doosan Portable Power
Metallurgica Abruzzese S.p.A.
Terex GB Limited
Wirtgen Group

Rollers

Wirtgen Group

SAFETY EQUIPMENT

Metallurgica Abruzzese S.p.A.

Sand Blasting Equipment

Doosan Portable Power

Scaffolding

Wilhelm Layher GmbH & Co KG

Site Dumpers

Carmix - Metalgalante S.p.A.

Skidsteer Loaders

Doosan Bobcat EMEA s.r.o.

SOFTWARE

Caterpillar
Topcon Positioning Middle East and Africa FZE

Steel - Other

Metallurgica Abruzzese S.p.A.

Submersible

Multi-Tech Services (WA) Limited
Varisco S.r.l

Telescopic Handlers

Doosan Bobcat EMEA s.r.o.
JCB Sales Ltd
Magni Telescopic Handlers

Temporary Housing and Offices

EEC Group (Engineering Enterprises For Civil & Steel Constructions S.A.E.)

Testing

Multi-Tech Services (WA) Limited

TOOLS

CANTONI MOTOR S.A.
Caterpillar
Doosan Portable Power
Topcon Positioning Middle East and Africa FZE

Tools - Other

Doosan Portable Power

Trailers

Faymonville Distribution Ag
Goldhofer AG

Trenching and Pipe Laying

IMECO Handelsgesellschaft m.b.H.

Tunnelling

CDE Group HQ
Metallurgica Abruzzese S.p.A.

Underground & Mining Machinery

Bell Equipment South Africa
BLUMAQ SOUTH AFRICA
CANTONI MOTOR S.A.
Liebherr- Export AG
Magni Telescopic Handlers
Multi-Tech Services (WA) Limited
Terex GB Limited

USED EQUIPMENT

BAUER Technologies South Africa (PTY) Ltd
Bell Equipment South Africa
Caterpillar
DEUTZ AG
IMECO Handelsgesellschaft m.b.H.
Visa S.p.A.
Vortex Hydra S.r.l.
Wirtgen Group

WELDING EQUIPMENT

Coelmo SpA
Interplast Limited
KOHLER
LINZ Electric SPA

Section Two: Suppliers

ACIMAC – Association of Italian Manufacturers of Machinery and Equipment for Ceramics



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41126
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Web: www.acimac.it
E-mail: uff-promo@acimac.it

ACIMAC is the association of Italian suppliers of plant, machinery, equipment, semi-finished products, raw materials and services for the ceramic (ceramic tiles, sanitaryware, tableware), heavy clay and refractories industries. ACIMAC members include the majority of the sector's companies of various sizes based throughout Italy.

AMMANN NME FZE

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Web: www.bauersa.co.za
E-mail: info@bauersa.co.za
Supplier of equipment for piling and mining.

Bell Equipment South Africa

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Tel: +27 35907911
Web: www.bellequipment.com
E-mail: stephen.mcneill@bellequipment.com

OEM manufacturer and distributor of heavy duty equipment for the mining and construction industries.

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Web: www.blumaq.com
E-mail: southafrica@blumaq.com
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Web: www.cantonigroup.com
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DEUTZ AG

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Fronius International GmbH

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LINZ Electric SPA

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Masa GmbH

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MYTILINEOS Energy & Metals, founded in Greece in 1990, is an industrial and energy multinational company, listed on the Athens Stock Exchange, with a consolidated turnover of 6.3 billion and EBITDA of 823 million and employs more than 5,442 direct and indirect employees in Greece and abroad. Through the Energy Sector, the company is strategically positioned at the forefront of the energy transition as an integrated "green" utility, while through the Metallurgy Sector the Company is establishing as a benchmark for competitive "green" metallurgy in the European landscape. Focused on sustainability, it has set a target to reduce CO2 emissions by at least 30% by 2030 and achieve by 2050 net zero carbon footprint in all its operations in accordance with ESG criteria for Environment, Society and Governance.

For more information, please visit:
www.mytilineos.com

Agents:

Ghana - MYTILINEOS S.A GHANA
Nigeria - MYTILINEOS S.A

Ormonde Machinery Ltd.

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Kilkenny, R95E489, Ireland
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Web: www.ormondemachinery.com
E-mail:
info@ormondemachinery.com

Ormonde Machinery are leading suppliers of Terex Finlay Crushing, Screening and Washing Equipment in West Africa. The company also supplies Conveyors, Dump trucks, Recycling Equipment and Block Making Machines.

Agents:

Nigeria - Finlay Nigeria Ltd.

Parker Plant Ltd.

Canon Street, Leicester
LE4 6GH, United Kingdom
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Fax: +44 116 2610812
Web: www.parkerplant.com
E-mail: sales@parkerplant.com

Parker Plant manufactures and supplies a comprehensive range of crushing, screening, asphalt and concrete plants as well as bitumen/road surfacing equipment and bulk handling conveyor systems.

Perkins Engines Company Limited

Frank Perkins Way, Peterborough
Cambridgeshire, PE1 5FQ
United Kingdom
Tel: +44 1733 583000
Web: www.perkins.com
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Perkins, a global power systems powerhouse in the 4-2000 kW market, helps customers achieve

climate-related goals by designing, building, and servicing power solutions that are tailored precisely to their requirements. Collaborating with over 800 equipment manufacturers, Perkins' power solutions are supported by a global distribution network and digital aftermarket services.

RATEC GmbH

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Hockenheim
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Germany
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Fax: +49 6205 940730
Web: www.ratec.org
E-mail: info@ratec.org

Meet the better ideas for your precast concrete housing and building projects. RATEC is a well-known supplier of magnetic shuttering systems, magnet boxes, battery formwork systems and concrete pumps. Furthermore, with Reymann Technik as partner it offers plant design and consultancy for new and existing precast concrete plants.

Rockster Austria International GmbH

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E-mail: office@rockster.at

ROCKSTER is a specialist in the development and manufacturing of mobile crushers, screening machinery and stackers for profitable recycling of asphalt, concrete and other construction waste as well as the efficient processing of natural stone. With innovations such as The Original Duplex System or a Double-Functional Return Belt, the company repeatedly demonstrates its approach towards progress & improvement

Agents:

South Africa - Mfangano Solutions

ROKBAK

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Rossi S.p.a.

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Rossi is a global leading provider of Power Transmission Drives (Gearboxes and Gearmotors) with a high value/price ratio. Rossi has been developing its business in the most demanding applications, becoming one of the world's leading gearbox specialist in strategic segments, such as Mining, Metal, Plastic and Rubber.

Agents:

South Africa - Rossi Southern Africa

SEVA Switchgear Pvt. Ltd.

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Terex Minerals Processing Systems (MPS) offer Static, Modular and Wheeled Crushing and Screening Equipment for the Mining, Quarrying, Contracting, Recycling, and Road Building Industries.

Agents:

- Benin - PX Equipment
- Burkina Faso - PX Equipment
- Cameroon - Tractafac
- Congo DR - Tractafac
- Cote D'Ivoire - Tractafac
- Gabon - Tractafac
- Ghana - PX Equipment
- Mali - Tractafac
- Nigeria - PX Equipment
- Senegal - Tractafac
- Sierra Leone - PX Equipment
- South Africa - ELB Equipment
- Togo - PX Equipment

TOMRA Sorting GmbH

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Varisco S.r.l.

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Web: www.variscopumps.com
E-mail: export.varisco@it.atlascopco.com

Varisco is known around the world for high quality pump design and manufacturing: self-priming and high efficiency semi-open impeller centrifugal pumps suitable for liquids with solids in suspension. They are used in construction sector (drainage, ground water dewatering) and industry, agriculture and naval sectors.

Visa S.p.A.



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Visa S.p.A. is one of the world's leading gensets suppliers, based in Italy, designing, developing

and manufacturing diesel gensets, from 9 to 3000 kVA, in standard or tailor-made solutions for a large variety of applications. It provides also specific equipment for the construction sector (such as mobile site pumps for dewatering and sewage). It is present in over 100 countries through a global network to support in the successful completion of projects through an efficient engineering department, guaranteeing a highly operational flexibility and qualitative standards for which it has become a leader in the market for more than 60 years.

Volvo Construction Equipment

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Volvo Construction Equipment (Volvo CE) is a leading international manufacturer of premium construction equipment, and with over 14,000 employees, it is one of the largest companies in the industry. Volvo CE offers a wide range of products and services in more than 140 countries through its global distribution network.

Agents:

- Algeria (Algeria)
- Angola - Auto-Maquinaria Lda. Auto Sueco (Angola) SARL
- Burkina Faso - SMT (Burkina Faso)
- Burundi - SMT (Burundi)
- Cameroon - SMT (CAMEROON)
- Congo Brazzaville - SMT (Congo)
- Congo DR - SMT (Congo DR)
- Cote D'Ivoire - SMT - Ivory Coast
- Egypt - Ghabbour Egypt
- Ethiopia - Equatorial Business Group Pvt. Ltd. Co.
- Gabon - SMT (GABON)
- Ghana - SMT (GHANA)
- Liberia - SMT (LIBERIA)
- Madagascar - Leal Equipements Compagnie LTEE (MADAGASCAR)
- Mauritius - Leal Equipements Compagnie LTEE (MAURITIUS)
- Morocco - SMT Morocco
- Mozambique - Babcock International (Mozambique)
- Nigeria - SMT Nigeria 1
- Rwanda - SMT (RWANDA)
- Seychelles - Leal Equipements Compagnie LTEE (SEYCHELLES)
- Sierra Leone - A. Yazbeck & Sons Ltd.
- South Africa - Babcock International (South Africa)
- Sudan - Al Barajoub Engineering
- Togo - SMT Benin (Togo)
- Tunisia - Nordic Machinery
- Zambia - Babcock International (Zambia)

Volvo Penta

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Volvo Penta, with more than 4,000 dealers in over 130 countries, is a world-leading and global manufacturer of engines and complete power systems for both marine and industrial applications. The engine program comprises diesel and gasoline engines with power outputs between 10 and 900 hp. The Volvo Penta Industrial engine range covers: diesel engines for electrical power generation, 50 and 60 Hz and industrial diesel engines for different stationary and off-road applications. These engines have now been developed to meet future stringent exhaust emission levels. Volvo Penta is part of the Volvo Group, one of the

world's leading manufacturers of trucks, buses, construction material & equipment, drive systems for marine and industrial applications.

Agents:

- Angola - Auto Sueco - Angola
- Congo Brazzaville - SMT Congo
- Congo DR - SMT RD Congo
- Cote D'Ivoire - SMT - Ivory Coast
- Mauritius - Talbot Engineering
- Morocco - SMT Morocco
- Nigeria - SMT Nigeria
- Seychelles - Adesho Marine
- South Africa - Southern Power Products
- Sudan - Al Barajoub Engineering
- Tunisia - Bateamed
- Zimbabwe - Avoca Marine
- Zimbabwe - Avoca Power

Vortex Hydra S.r.l.

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Based in Italy, Vortex Hydra have obtained the enviable reputation of being world leaders in the specialist field of concrete roof tile manufacture. Renowned for their "state of the art" large scale, fully automatic production plants, the company has applied its expertise in developing the Uno system lower volume affordable plants.

Watermaster | Aquamec Ltd

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Web: www.watermaster.fi
E-mail: watermaster@watermaster.fi

Cleaner, safer and better functioning waters with fewer machines and costs - The Amphibious Multipurpose Watermaster handles the work of many conventional machines. Watermaster does suction dredging, backhoe dredging, raking & pile driving. Watermaster cleans, restores and develops rivers, canals, lakes, industrial ponds and other shallow waterbodies.

Wilhelm Layher GmbH & Co KG



More Possibilities. The Scaffolding System.

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Germany
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49 71 35 70 265
Fax: +49 71 35 70 265
Web: www.layher.com
E-mail: export@layher.com

Wilhelm Layher GmbH & Co KG, through its subsidiaries, manufactures and markets scaffolding systems. It offers modular scaffoldings, facade scaffoldings, event-systems for grandstands and stages, weather protection roofs, scaffolding claddings, rolling towers, and ladders. The company also provides scaffolding/protective systems, such as round scaffoldings, scaffolding decks, cassette roofs, lightweight cassette roofs, and scaffolding accessories. It offers its products through representatives worldwide. The company was founded in 1945 and is based in Gueglingen, Germany. It has subsidiaries internationally.

Agents:

- South Africa - Layher (Pty) Ltd.

Wirtgen Group



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E-mail: info@wirtgen.de

The WIRTGEN GROUP is an internationally operating group of companies in the construction equipment industry. Our product brands include WIRTGEN, VÖGELE, HAMM, KLEEMANN and BENNINGHOVEN. We offer our customers mobile machine solutions for road construction and road rehabilitation, plants for mining and processing minerals or recycling material.

Agents:

- Algeria - T.P.S. SARL Tractor Parts Services
- Angola - Movicortes Angola - Equipamentos & Servicos, Lda
- Benin - DEM Bénin
- Botswana - WIRTGEN South Africa (Pty) Ltd. (Botswana)
- Burkina Faso - DEM Burkina Faso
- Cameroon - Kanu Equipment Cameroun Sàrl
- Congo DR - DEM D.R. Congo
- Cote D'Ivoire - DEM Côte d'Ivoire
- Egypt - ACE Arabian Company for Engineering
- Ethiopia - Moenco (Ethiopia)
- Ghana - DEM Ghana
- Guinea - DEM Group SA
- Kenya - Panafican Equipment Ltd. (Kenya - Writgen)
- Lesotho - WIRTGEN South Africa (Pty) Ltd. (Lesotho)
- Liberia - Kanu Equipment Liberia Ltd
- Libya - WIRTGEN Libya J. C.
- Malawi - Machinery Spares and Trading Limited
- Mauritania - DEM Mauritania
- Mauritius - UMCL Ltd.
- Mauritius - UMCL Ltd. (Mauritius)
- Morocco - SIMDM - Société Marocaine de Distribution de Matériel
- Mozambique - Movicortes Mosambique, Lda
- Nigeria - SCOA TRAC (Wirtgen)
- Portugal - Moviter Equipamentos Lda
- Senegal - DEM Senegal
- Seychelles - UMCL Ltd. (Seychelles)
- Sierra Leone - Kanu Equipment Sierra Leone Ltd.
- South Africa - WIRTGEN South Africa (Pty) Ltd.
- South Sudan - Machine Afrik Co. Ltd.
- Spain - EMISA Maquinaria y Proyectos S.L.
- Sudan - Machine Afrik Co. Ltd.
- Swaziland - WIRTGEN South Africa (Pty) Ltd. (Swaziland)
- Togo - DEM Bénin (Togo)
- Tunisia - SOTRADIES
- Zimbabwe - Machinery Exchange (pvt) Ltd

Zest WEG

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Zest WEG, a subsidiary of leading Brazilian motor and controls manufacturer WEG, has a strong commitment to contributing to the development of the African region, and has been servicing the mining sector on the continent for more than 40 years. An in-depth understanding of the harsh conditions found within this sector and years of experience on the continent have ensured the Zest WEG service offering is fit-for-purpose. By leveraging best practice engineering and manufacturing capabilities, the group can offer a range of standard off-the-shelf products and end-to-end energy solutions.

Agents:

- Ghana - Zest WEG - Ghana Branch

Section Three: Agents & Subsidiaries in Africa

Algeria

Altractors SARL (Algeria - Cat Lift)

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Cummins Energie Algeria

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EURL METEC

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Serpic

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T.P.S. SARL Tractor Parts Services

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Web: www.tps-algerie.com
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TPS - Tractor Parts Services SARL

77, lot Zouatna les Verges
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Angola

Auto Sueco - Angola 1

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Garden Towers Torre B 10°
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CI & MA Comp. Ind.

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Tel: +244 22 2290886/923425538
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contabilidade@grupomopic.com

Cummins Angola

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Movicortes Angola – Equipamentos & Serviços, Lda

Parque Movicortes
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DEM Bénin

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PX Equipment

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Botswana

BH Botswana

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DUNETON

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K L CRANES & LIFTING EQUIPMENT

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Burkina Faso

DEM Burkina Faso

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Cameroon

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Congo Brazzaville

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Congo DR

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DEM D.R. Congo

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SMT RD Congo 2

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Côte d'Ivoire

Bernabe Côte d'Ivoire

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Matforce (F.G. Industries SAS) [Côte d'Ivoire - Cat Lift]

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SMT - Ivory Coast

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Egypt

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M.S.E. Modern Structures & Equipment

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Technoscientific

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Ethiopia

Moenco (Ethiopia)

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Tri Machinery Trading & Rental PLC

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Critical compressors

With so many industries requiring air compressors, it is essential manufacturers deliver effective and reliable solutions to the market.

There are few pieces of machinery more vital to construction and mining than air compressors. A wide range of equipment, tasks and processes require the presence of a compressor, making it vital to have an effective, reliable and efficient solution on site to ensure uninterrupted operations at the least cost required.

As a result of their centrality, the market is flooded with a wide variety of manufacturers offering their wares, making it a challenge to stand out. Nevertheless, many companies are able to get their voices heard, drawing attention to the impressive solutions they offer and the services they provide.

ELGi is one such company that is committed to delivering reliable air compressors and excellent service to its African customers – a role it has been reprising for more than two decades.

The company has a strong presence in multiple countries such as South Africa, Nigeria, Ghana, Tanzania, Kenya, Uganda, Algeria, Angola, Botswana, Ethiopia, Malawi, Mozambique, Zambia, and Zimbabwe, helping to meet the diverse needs of the varied industries across the region.

ELGi offers a comprehensive range of air compressors and accessories tailored to customers' requirements. Specifically, within construction, the company has indicated that its PG185, PG380, PG850, and PG450 portable air compressor models are particularly popular, with the compressors capable of delivering the necessary power and reliability for various construction applications. For water well drilling and mining applications, ELGi's PG1100 and PG1250 models provide exceptional performance and durability, meeting the demanding needs of these industries.

The company has spent time seeking to understand the unique requirements of its customers in Africa and so its compressors are designed to offer high uptime and reliability, ensuring uninterrupted operations. It has also focused on providing low-cost ownership, with energy-efficient compressors to reduce operating expenses and ease of maintenance to provide efficiency. This is cemented by its strong aftermarket support and service.

Bobcat broadens portfolio

In the past five years, Bobcat has actively sought to broaden its portfolio and has launched more



ELGi offers a comprehensive range of air compressors and accessories tailored to customers' requirements.

Image Credit: ELGi



DPP compressors are designated with PA for portable air.

Image Credit: Bobcat



The battery-powered portable air compressor from Atlas Copco, B-Air 185-12.

Image Credit: Atlas Copco

machines and attachments during this period than in its entire history.

More recently, Doosan Bobcat has announced a new global branding strategy to create business and growth opportunities for the Bobcat product portfolio. This has included rebranding the product offering of Doosan Industrial Vehicle (DIV) and Doosan Portable Power (DPP). The latter is a leading global manufacturer of air compressors, mobile generators and light towers under the Bobcat brand.

At the company's recent Demo Days 2023, visitors were able to see products that will be entering the market with new Bobcat trade dress. All displayed DPP products already used the new, simplified product naming with compressors using the designation PA (for portable air).

Atlas aims for electric

In the latest sign of its shift to more sustainable products, Atlas Copco has expanded its portable electric product portfolio to include a battery-driven portable screw air compressor.

The B-Air 185-12 features 5-12 bar of pressure, a stable flow rate of 5.4-3.7 cu/m per minute and

55kWh battery storage capacity. With power delivered from its onboard power pack, in operation a fully charged unit is independent of the need for fuel or a local power source to plug into, and has the capability to perform for up to a full typical work shift.

The electric B-Air 185-12 only needs to be serviced every 2,000 hours, as opposed to 500 hours for a typical ICE powered unit. Other benefits include the machine's Speed Drive (VSD) and permanent magnet motor which drive down the total cost of ownership, automatically adjusting the motor speed to match air demand in real-time and increasing energy efficiency by up to 70%.

Bert Derom, president of Atlas Copco Portable Air Division, said, "The B-Air 185-12 is a tangible symbol of our commitment to delivering real-world solutions to help our customers and their customers adopt a more sustainable way of working, and to turning the tide on climate change. We ultimately want to offer a sustainable alternative to every user and every application, and this new battery powered unit is a leap closer to that goal." ■

Cementing a sustainable future

The growing demand for cement and concrete is increasing the urgency to reduce the materials' heavy carbon footprint.

In 2020, around 4.2bn tonnes of cement was produced around the world, according to IRENA's World Energy Transition Outlook 2023, a figure that corresponded to 3% of global final energy consumption and a staggering 8% contribution to global CO₂ emissions (60% coming from related processes).

In order to transform the cement industry, IRENA suggested several policies to reduce its environmental impact while retaining its competitiveness, with reducing the use of cement at the top of the list.

While this may be an ideal scenario from the perspective of IRENA, the reality is that as the global population continues to swell – alongside higher rates of urbanisation – infrastructural needs from transport to energy will continue to grow, driving a demand for concrete in significant volumes, according to The Global Cement and Concrete Association (GCCA). Indeed, based on population and development, global cement production is set to grow by 12%-23% by 2050, especially encouraged by regions with high population growth and need for infrastructure, such as Africa.

The GCCA, in its Roadmap to Net Zero, has indicated several means to reduce the levels of CO₂ emitted by the cement and concrete industry during this period, including savings in clinker production; utilising carbon capture and utilisation/storage; decarbonising electricity used in production; raising efficiency in production; and re-carbonisation. While it stated that a concrete net zero future can be achieved on known technologies, it is striving to innovate at every stage of the life of concrete and cement and has called on policymakers, governments, researchers,



Image Credit: Lafarge Africa

Lafarge Africa's Eco Label represents a broad range of green cement for high performance, sustainability and circular construction.

innovators, and more to help drive this search for more climate-friendly material.

The challenge from GCCA has been taken up with vigour across much of the globe, with Tine Bremholm Kokfelt, senior project & export finance manager at FLSmidth, commenting, "Now, sustainability is at the centre of just about every project we work on... Fortunately, there are a lot of funds out there actively seeking opportunities to finance projects that reduce carbon emissions – including those from the cement industry."

On the continent

Indeed, the GCCA challenge has not fallen on deaf ears in Africa either, despite the continent being some way off the leading CO₂ emitters from cement production (China takes the top spot with 57%). At the

end of 2022, the GCCA and the United Cities and Local Government of Africa (UCLG Africa) signed a memorandum of understanding to increase collaboration towards decarbonising cement and concrete industries. The organisations agreed to work together to encourage local governments to take policy action towards decarbonisation targets and ensure cities have more capacity to embrace innovative cement products.

Kenya-based East African Portland Cement, for instance, is making great strides in this department after releasing the sustainable Green Triangle Cement product last year. Produced using less clinker, the product minimises the manufacturers carbon emissions and, according to media reports, will be a key part of the company's plans to expand its business into the wider region.

Lafarge Africa, a leading innovative and building solutions company, has also embraced this climate commitment with enthusiasm, and has announced the launch of its Eco Label brand to transparently communicate the environmental benefits of its building solutions.

The Eco Label branding builds on the company's net zero pledge and represents a broad range of green cement for high performance, sustainable and circular construction. The release of this eco-friendly cement provides Lafarge's end-users with the opportunity to make greener choices.

"Lafarge Africa is proud to be the first local cement manufacturer of eco-friendly cement to the Nigerian market. With the rollout of this Eco brand, we are accelerating the transition to more sustainable building materials for greener construction," remarked Khaled El Dokani, country chief executive officer of Lafarge Africa.

Vorke Enite, plant customer development manager, sales & marketing at Lafarge Africa, added, "With 30% decarbonisation, Lafarge remains committed to building progress for people and the planet and delivering value to our numerous customers and stakeholders. The product quality is still of certified standard and our customers are happy."

"Lafarge has been in the country for more than 60 years; our product quality is still the same. The Eco Label launch is a zero-emission initiative and is in compliance with global best practices. It is the same quality, the same efficacy and the same value for our customers/stakeholders." ■

Lumwana shines as Barrick unlocks potential

Barrick Gold Corporation's drive to transform the Lumwana copper mine into a Tier One asset with a life extending beyond 2060 is picking up speed with a strong performance in the past quarter.

Mark Bristow, president and CEO of Barrick, has explained that the full potential of the mine is only now being revealed.

Additional expansion opportunities, identified through an updated geological model, are currently being assessed, while drilling at the Kababisa prospect highlights potential mining flexibility through higher grades.

The Lumwana pre-feasibility study is progressing in line with plans to transform its long-term copper profile through the delivery of the envisioned super pit.

Bristow commented, "Since Barrick refocused its strategy in Africa in 2019, Lumwana has become a key element in the expansion of our strategic copper portfolio and a significant contributor to our bottom line. At the same time its importance to Zambia has grown. Since 2019 it has contributed more than US\$2.3bn to the country's economy in the form of royalties, taxes, salaries and purchases from local suppliers."

Barrick has a global policy of sourcing its suppliers locally and last year it spent US\$432mn, 83% of its total procurement, with Zambian suppliers and contractors. To build the capacity of Zambian contractors in the mining supply chain, the company has also launched a business accelerator programme.

The company has also reiterated its commitment to local employment. Currently 99.3% of Lumwana's employees and 98% of its contractors are Zambian nationals, both industry-leading statistics. Lumwana is a participant in the United Nations' REDD+ project, which is designed to reduce greenhouse gas emissions from deforestation, and the mine has engaged with its communities on this initiative.



Image Credit: Barrick Gold Corporation

Lumwana has become a key element in the expansion of the company's strategic copper portfolio.

RAINBOW RARE EARTHS PARTNERS WITH BOSVELD PHOSPHATES

Rainbow Rare Earths has signed an agreement with Bosveld Phosphates to allow 100% ownership of the Phalaborwa Project in South Africa.

Rainbow will receive an immediate 85% interest in the joint venture that holds the rights to the project, with Bosveld holding the remaining 15%. Rainbow is granted a call option to acquire the remaining 15% in return for US\$7mn equity.

The consolidation of project ownership has been completed as activity for Phalaborwa is increasing to de-risk the project and deliver a DFS. Front end pilot plant operations have commenced and are on track to produce first high-value mixed rare earth sulphate in 2023. The pilot plant back end is being constructed and will be commissioned in time to receive the first batch of mixed rare earth sulphate to produce high purity separated magnet rare earth oxides. Other key workstreams to deliver the DFS are progressing in parallel, which will underpin Phalaborwa as a near term solution to the need for a diversified western supply of permanent rare earth magnets required for the energy transition.

George Bennett, CEO of Rainbow, said, "We have always wanted to consolidate our interest in the Phalaborwa project, given the exceptional economics highlighted by our preliminary economic assessment that confirmed an NPV10 of US\$627mn based on spot rare earth prices at the time of publication.

"This is an exciting time for Rainbow and Phalaborwa, with the front end of the pilot plant operational in South Africa and the back end being constructed in USA. I look forward to announcing the results from the front end pilot testing, confirming we are able to extract the rare earths and produce a saleable mixed rare earth sulphate."

CONTANGO CONFIRMS LUBU OFFTAKE AGREEMENT

Contango Holdings Plc, a natural resource development company, has entered into a new offtake arrangement with TransOre International FZE for the sale of up to 20,000 tonnes per month of washed coking coal from its flagship Lubu Project in Zimbabwe.

The TransOre contract has been calculated with reference to the existing washing capacity at Lubu, however, TransOre has indicated its willingness to expand the size of the contract. The contract is expected to replace the non-exclusive contract with AtoZ Investments Ltd previously reported by Contango and is intended to complement the expected offtake arrangements being finalised with the global multi-national company, which is expected to complete its due diligence shortly.

The TransOre contract is priced at the prevailing Minerals Marketing Corporation of Zimbabwe coking coal price, currently at US\$120/tonne.

BRIEFS

Significant copper anomaly at Kitlanya West

Aircore and reverse circulation drilling conducted by Cobre Limited at its Kitlanya West Project in Botswana have identified a prominent copper anomaly associated with the



Image Credit: Akobe Stock

A consistent 2.5 x 1 km copper anomaly has been identified.

Tlou Target. Cobre CEO Adam Woolridge, said, "I am extremely pleased with the findings from our ongoing drilling activities at the Kitlanya West project in Botswana. The identification of a consistent and significant copper anomaly associated with the Tlou Target provides further support for the copper potential in the 2,000 sq km project area."



The Evander Mines solar photovoltaic plant.

Powering South African mines

JUWI Renewable Energies now has 400MW of engineering, procurement and construction (EPC) projects in advanced stages of development for mines in South Africa following the financial close of the 89MW Castle Wind project.

The project, initially developed for the Government's Renewable Energy Independent Power Producers' Programme will be delivered for AIIIM Consortium for Sibanye-Stillwater's mining operations.

A stirring giant

Gold production is leading the way for West Africa’s blossoming mining industry.

There has hardly been a more exciting time for West Africa’s mining sector. For an industry that has grown steadily since the 1990’s, the implementation of new legal frameworks, mining codes, environmental standards and more efficient permitting processes, has promoted the development of the industry to new heights and encouraged private sector engagement and investment.

As more projects increasingly populate the landscape, the region has emerged as a key player in markets of global significance, most notably gold. While sub-Saharan production of this resource has historically been dominated by South Africa, in the last decade the ramp-up of gold production by a number of countries in West Africa has propelled the region in seniority within the continent, and indeed the world. Three countries – Ghana, Mali and Burkina Faso – are now ahead of South Africa in terms of gold production and are estimated to account for 33% of the continent’s gold production between them. The three are also now members of the top 12 producing countries worldwide (according to the World Gold Council) and, with capacity expected to increase alongside other rising nations such as Côte d’Ivoire, Niger and Senegal, the region is fast-becoming a dominant figure.

The excitement is, however, not just limited to gold as the region is also home to a wide array of resources such as iron, uranium and precious stones, alongside metals and minerals that will be key to the forthcoming energy transition – aluminium, manganese, zinc, lithium are also richly present.

First gold pour for Fortuna

The ramp-up of gold production in Côte d’Ivoire has received a boost with the first gold pour achieved at the Séguéla Mine.

The project arrived in Fortuna Silver Mines’ portfolio following the acquisition of Roxgold in 2021; a move that also brought in the Yaramako Mine in Burkina Faso, an underground asset which has been producing gold since 2016. At the time of acquisition, the Séguéla Mine was at feasibility stage before Fortuna swiftly announced the construction decision later that year.

Construction progress was rapid with the company announcing Séguéla’s first gold pour which took place on 24 May, 2023, with the mine then transitioning from commissioning to ramp-up where it will likely achieve nominal rate of production during Q3 2023.

African Review heard from Jorge Ganoza, president, CEO and director of Fortuna Silver Mines, as he explored the progress of the project in more detail and his experience working in the region. He commented, “Fortuna



Image Credit: Fortuna Silver Mines

The Séguéla Mine will likely achieve nominal rate of production during Q3 2023.

currently operates five mines across West Africa and Latin America. Our gold equivalent production is around 450,000 ounces of gold and for 2023 the Séguéla Mine is expected to produce between 60,000 to 75,000 ounces. More importantly, it will do so at an all-in sustaining cost of between US\$880 to US\$1,080 per ounce. In 2024 we will then benefit from a full year of production.

“There is a consistent message from Côte d’Ivoire Government officials that the country wants to establish itself as a force in precious metals mining, attracting responsible miners and developing the industry in a responsible way. We believe they are achieving that and the rate of growth and expansion in Côte d’Ivoire is very strong.”

When asked about the experience of operating in West Africa, Ganoza responded, “I would not necessarily compare the jurisdictions we operate in terms of ability to do so, but I would say that for some (especially North America-based) investors, Africa – and West Africa in particular – can seem like a remote and exotic place. However, from a mining perspective, what we have seen over the last twenty years is the region emerge and mature into a well-established mining jurisdiction; a place where you are able to deliver projects on time and on budget. We have just done this and we are not unique here.

“It is a place where you have all the necessary industry clusters to be efficient. There are equipment manufacturers in the region, pools of knowledge expertise, support services, and adept contractors which all lends itself to efficient operations.

“We must also remember that it is a relatively small area and yet, despite this, it is ahead of continental-sized nations in terms of production. From a relatively small area with an incredible mineral endowment, the different countries have been supporting the development of responsible mining and have established themselves as a place to be if you want to be in the business of precious metals.”

Fortuna is seeking to expand its presence even further. With the planned acquisition of Chesser Resources, announced in May 2023, the company will inherit the preliminary economic assessment stage Diamba Sud Gold Project in Senegal, taking advantage of a new and emerging gold discovery in the region.

“This is proof that we are actively looking to expand our presence in West Africa, we think there is still lots of opportunities out there and we want to be a force in West Africa mining,” Ganoza concluded.



Image Credit: Fortuna Silver Mines

Séguéla plant overview (looking due north).

All-in in West Africa

Fortuna is not the only company which is taking a keener interest in the region and the array of organisations pursuing initiatives serve as an excellent indicator of the current attractiveness of West Africa’s mining industry. Recent announcements include:

Cora Gold: Recently appointed Atlantique Finance to act as sole adviser in the structuring and mobilisation of a US\$70mn loan to support the development of its flagship Sanankoro Gold Project in South Mali. The company swiftly followed this announcement with the commencement of the construction tender process to transition the project into a producing mine and has now appointed key management personnel to oversee this.

Barrick Gold: Celebrated the 26 year partnership between itself and Mali. President and chief executive, Mark Bristow, commented, “We are continuing to invest in the future of Loulo-Gounkoto. Successful exploration is more than replacing the ounces we mine as well as identifying new growth opportunities with the potential to deliver the next generation of major discoveries in the Loulo region.”

Stella Vista: Acquired the Kalia iron project in Guinea, one of the largest iron ore projects globally which has received more than US\$350mn in investment since 2007. The group will continue with production and investigate the potential of the laterite nickel deposit which overlays the iron ore deposit.

Atlantic Lithium: Delivered the definitive feasibility study for the Ewoyaa Lithium Project in Ghana, a project that will become the country’s first lithium mine.

Ricca Resources: Reported the definition of multiple lithium in soil anomalies and a planned auger drilling programme following a large-scale soil sampling programme at the AteX Lithium-Tantalum Project in Côte d’Ivoire

FG Gold: Making progress on the Baomahun Gold Project in Sierra Leone which is set to become the country’s first large-scale commercial gold mine. The project consists of



The Baomahun Gold Project in Sierra Leone.

Image Credit: FG Gold

the development of a 2.5 Mtpa open pit mine, processing plant and supporting infrastructure. Early construction works commenced in Q1 2023 with local contractors on site and first gold pour is expected for 2025 – as a result of the experience of its directors and management team alongside execution partners such as Knight Piesold and Lycopodium.

The company explained to *African Review* that it has prioritised a diverse array of Sierra Leonean suppliers to deliver the contract with, for example, an early works programme being completed by a local contractor. These are currently constructing portions of the 200-man camp and other aspects have been earmarked.

FG Gold continued that the Government has been an “instrumental partner” in the development of the Baomahun project, adopting a hands-on approach to help ensure development progresses smoothly while playing a key role in all aspects from licensing and permitting to environmental activities.

Echoing Ganoza’s sentiments, the FG Gold representative explained that West Africa is one of the most promising mining jurisdictions globally with a wide mineral endowment and a largely unexplored region for critical metals.

Alongside nations such as Liberia, Sierra Leone is ramping up its gold production and has the potential to become a one million ounce producer over the next ten years. The FG Gold spokesperson noted that across the West Africa region, legal frameworks, agreements and clearly defined environmental and sustainability requirements have been at the forefront of ensuring an efficient process from exploration to permitting to production.

As countries in the region progress in their bids to exploit natural resources for growth, this is creating a host of opportunities not just for investors but also the array of international machinery manufacturers, power suppliers, logistics service providers, local contractors and more that are involved in commissioning and maintaining these projects. ■



Image Credit: FG Gold

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Drilling dedication

The constant demand for drilling in Africa's mining industry means there are plenty of opportunities for those dedicated to serving the sector.

Image Credit: Epiroc

Epiroc's SmartROC T25 R boasts a low centre of gravity, wide crawler spacing and a boom system with good maneuverability.

As an essential mining activity – encompassing exploration, land-clearing, production, and more – drilling is a diverse service that is under perpetual demand across the continent.

Indeed, there is a constant stream of communication from African mine owners outlining the drilling campaigns – from auger through to aircore and everything in-between – successfully undertaken or describing the drilling activities that will need to be pursued in order to advance their respective projects. Fortunately for these companies, there is a wide variety of mining service providers operating across the continent which have demonstrated their capacity to meet this demand and stand ready to pick up this work when needed.

Spartan Drilling Services, for instance, has been contracted by Altona to continue the campaign at the Monte Muambe rare earths project in Mozambique. The workscope will focus on in-fill and down-dip drilling as well as exploration drilling, with the 2023 campaign aiming to expand high-grade orebodies in order to increase the resource base.

Perenti Ltd. has announced that its subsidiary, African Underground Mining Services, has been awarded a 60-month contract at the Newmont Subika gold mine in Ghana. Through its UMA joint venture, Perenti will undertake all underground development and production activities, support services and diamond drilling.

Corica Mali, a subsidiary of Corica Mining Services, will conduct drill and blast activities at the Goulamina Lithium Project. Corica received the contract from Leo Lithium – which includes six months of pre-production activities at the site – due to the company's successful track record of operating in the West African region for more than 20 years.

Operating out of Accra, Sahara Natural Resources is another that boasts more than 20 years' experience under its belt and is always on the look-out for opportunities to provide technical insight and its leading solutions. The diversified mining services company's team of

geologists, drillers and field technicians are on hand to take projects to the next stage and earlier this year helped Mako Gold identify 15 new gold targets at the Napié Project in Côte d'Ivoire. As outlined by the company, "good equipment, combined with the right personnel, ensures quality outcomes for clients".

Murray & Roberts Cementation, a mining contracting company based in South Africa, has distinguished itself at Ivanplats' Platreef Project when the client required a 950 m vent shaft to be drilled vertically within tight parameters to be equipped with a hoist and rope guides.

Dirk Visser, senior project manager at Murray & Roberts Cementation, explained, "Using the well-proven German designed and manufactured Micon, Rotary Vertical Drilling System (RVDS), we were able to achieve the set parameters required for a rope guide installation. The worst deflection was no more than 0.05% – or 452 mm – and by the time we bottomed out, the deviation was only 0.02% – or 226 mm – off centre over a final drilling depth of 950 m."

Micon's specialised RVDS is a self-steering tool working on a close loop system which guides the tool using two-axis gyro inclination sensors which activate the hydraulic steering system. It can determine if there is any deviation from the vertical course and communicate this information to the operator on surface.

Sought-after solutions

Micon's RVDS has proven its ability to enhance drilling accuracy and, following its success, there is little doubt it will be utilised for more work in the years ahead. Innovations such as this, that raise the standard of drilling operations, are in hot demand on the continent with solutions constantly being brought to the market.

Sandvik Mining and Rock Solutions, for instance, has introduced the first Pantera DP1600i drill rig into southern Africa. The new offering is the largest top hammer drill on the market and is capable of drilling hole diameters from 102 to 178 mm.

"By considerably expanding the hole size range of previous top hammer drills, the Pantera DP1600i challenges traditional DTH drilling on large quarries and surface mines," said Vanessa Hardy, BLM for surface mining at Sandvik Mining and Rock Solutions. "In extensive field tests, the machine has proven to be a faster, fuel efficient and cost effective alternative to DTH drilling in hard, competent rock formations."

Following suit, Epiroc has launched a surface radio remote drill rig for construction and quarrying, SmartROC T25 R, which offers a number of valuable features such as an exceptional coverage area, application versatility and a smart rig control system.

Marcus Leü, global product manager at Epiroc, remarked, "Fuel consumption has been optimised, and the rig is extremely powerful in relation to size, which allows for use in demanding applications in confined spaces. This rig is designed to be the obvious choice for operators within this segment, a rig that will make their working day a lot easier." ■



The Pantera DP1600i is ideally suited for a variety of applications, including pre-split and production drilling in large quarries and surface mines.

Image Credit: Sandvik

Danger-free detonation

Keeping workers and equipment safe from blasting activities is a key concern for the mining industry.

It is hardly a ground breaking assertion that the use of explosives presents one of the most hazardous activities conducted by mining companies. While such methods – commonly used to blast and loosen rock – are rarely responsible for the bulk of injuries that befall workers on African mines, when explosive accidents do occur, they can be very destructive, potentially causing loss of life, significant damage to equipment and delaying progress.

Such occurrences have become less acceptable as mining worker safety increasingly becomes a high priority for governments and mining companies.

According to Indentec Solutions, a leading supplier of wireless solutions, despite developing regions tending to lag behind in minimising mining fatalities and injuries, efforts are being pursued globally to improve mining safety standards, ensure worker well-being and generally there is a growing awareness of the importance of safety culture in mining.

Contributing to this effort, last year the company provided its own best practice guide on blast mitigation to increase safety in mines and tunnels. The piece outlines critical points to help protect facilities, assets and people from the impacts of blasts such as the vital importance of risk assessment. Describing this as a ‘crucial tool’, proper risk assessment will provide critical insights into potential threats and advise on best action to produce effective mitigation strategies and protect the stability of mines.

The piece also indicated the pivotal role of understanding materials. Materials with higher tensile strength tend to have better resistance to blast forces and understanding the characteristics



Safety is a top priority for providers of explosives and blasting technology.

Image Credit: Adobe Stock

of materials in the face of explosions will help predict outcomes. With a deeper understanding of materials’ behaviour, mining professionals can make informed choices regarding selection, placement and reinforcement to enhance blast resistance and mitigation strategies.

Also pertinent is the focus on security, with robust processes crucial to protecting workforces. Indentec highlighted key processes such as creating a safe perimeter around blast areas; screening individuals before entering blast areas – preferably with the use of metal detectors or explosive trace detections – to identify risks or hazards; and establishing efficient evacuation procedures (practiced through drills) to ensure orderly evacuation in the event of an imminent blast as all measures which can minimise risk.

Finally, the opinion piece stressed the importance of selecting the right technology which will correctly balance cost, availability and safety for operations. It highlighted that there are a range of products specifically designed to withstand the unique forces and demands for explosions and research is continually being conducted to validate the effectiveness of blast mitigation products and enhance their potency.

Safe, reliable products

Indeed, there are few companies that provide mining explosive products which have not placed safety as a central tenet defining their products. For instance, BME, a leading provider of

explosives and blasting technology, celebrated a key safety target earlier this year when it achieved a zero recordable case rate (RCR) for the year ending January 2023. The RCR is based on the number of incidents resulting in treatment beyond first aid and was driven by a range of safety interventions such as visual felt leadership, process safety, near-miss reporting, driver awareness programmes and fatigue management.

This commitment to safety is reflected in the company’s products with the AXXIS Titanium and AXXIS Silver prime examples. BME managing director, Ralf Hennecke, stated, “Safety in blasting has less to do with automation, and more to do with strict safety protocols supported by the best technology available. For example, our latest generation of AXXIS Titanium once again raises the safety bar by incorporating a Swiss-designed application-specific integrated circuit chip in our detonators. This gives the system more internal safety gates against stray current and lightning, enhancing safety levels and allowing for inherently safe logging and testing.”

BME is not alone here, as Orica, another provider of commercial explosives and blasting systems, has sought to “change how the industry blasts” with its wireless primer launched earlier this year. The Orica WebGen 200 Surface enables customers to optimise their mining process from reducing exposure on bench to geological hazards such as stemming dust, working next to highwalls, reducing vehicle interactions, and removing people from harm’s way. In addition, the safe passage of mining equipment over loaded blastholes by maintaining parallel mining, and drilling, and loading activities is now a reality and customers have the ability to continue operations even during lightning storms. Such capabilities mean the technology represents a step forward in reducing production delays as well as delivering robust safety and reliability. ■

“Safety in blasting has less to do with automation, and more to do with strict safety protocols supported by the best technology available.”

RALF HENNECKE, MANAGING DIRECTOR OF BME

The graphite gold rush

As the Lindi Jumbo Graphite Mine nears construction completion in Tanzania, Walkabout Resources CEO, Andrew Cunningham, outlines the journey so far and explores why the mining community is taking a keener interest in the country.



Andrew Cunningham is the CEO of Walkabout Resources.

The Tanzanian Government is on a mission to revamp its mining industry. By 2025 it has set an ambitious target of the sector contributing 10% of the country's GDP and, in the pursuit of this there has been a cascade of key agreements signed with the likes of Evolution Energy Minerals, Peak Rare Earths and EcoGraf.

However, the revitalisation of the industry has not been an easy path and, at times, this ambition has put the country at loggerheads with the mining community and prospective investors. Most notably, in 2017, the Government signed a number of bills into law – including the Natural Wealth and Resources Act 2017 – which granted it 16% carried free interest in major mines operating in the country. It also enforced its right to review and renegotiate contracts for natural resources while increasing the royalty tax on certain exports.

While seen as a positive step in terms of the country taking more responsibility over its natural resources for its own betterment, it led to a period of uncertainty for investors in the country and opened a fresh period of negotiation with mining companies to operate in line with new regulations.

Throughout this period, Walkabout Resources, an energy minerals developer, was working hard to ensure that its Lindi Jumbo Graphite Mine (located in south-eastern Tanzania, in the highly prospective Mozambique belt) would not be derailed. When delivered, it would be the country's first major mine development in the last decade and is expected to contribute around 40,000 tonnes of premium natural flake graphite to international markets, with the rapid increase in demand primarily driven by energy storage and electric vehicle sectors.



When delivered, Lindi Jumbo will be the country's first major mine development in the last decade.

Andrew Cunningham, CEO and executive director of Walkabout Resources, described to *African Review* the experience of bringing the project to fruition over the last few years and what the future looks like for the company.

“It has been quite an interesting experience with the Government over the past seven years or so since I have been involved in the project,” Cunningham remarked. “The 16% legislation change was not something new, it was just something they decided to enforce. For a while, it made it very difficult to even get into the door to some of the big funds in London for instance. Once they heard you were from Tanzania, there was just no interest.

“However, that has changed now. Recently, there has certainly been quite a bit of exploration restarted in the country and a lot of companies are finalising their feasibility studies on gold, rare

earths, helium, graphite, etc. It can certainly now be regarded as a country where interest is picking up – especially in the last two years – and investment is now starting to flow into developing projects.”

“From our own experience, our relationship with the Government has always been good; even through the period of uncertainty. We have been transparent with them and when the changes came in we worked together, incorporated them into our financial model and just got on with things. The Government has been fully supportive throughout the whole process, they have done whatever they could to help make things easier throughout the application process, for instance, and it has been fairly smooth all things considered. We are happy with our relationship and I think this is now filtering down to some of our peers as well. The Government and the mining companies need to

support each other to get many of these big projects up and running and meet the 10% target. This is an aggressive target but it can be done.”

An abundance of riches

The mining potential in Tanzania is vast, given the wealth of natural resources hidden beneath the turf. While the country is home to a range of assets such as gold, iron ore, nickel, silver, diamonds, coloured gemstones, phosphate, coal and uranium; it is those minerals central to the energy transition that are garnering particular attention. The country boasts deposits of cobalt, copper, nickel and (most importantly for Walkabout Resources) graphite.

“Graphite is an absolutely critical mineral that can be used in energy storage, electric vehicles and makes up quite a large percentage of most rechargeable batteries. Tanzania is blessed to have a lot of good graphite

deposits for which uses are not solely restricted to the battery space. It can be used in graphite foils, in the aeronautical industry, automotive and safety industries, in traditional steelmaking and so forth.”

According to S&P Global, by 2030, global graphite demand is expected to be triple the current global production of the material with another 4-5 mt/year required. Currently, most production is concentrated in China (which boasts the third largest reserves worldwide behind Turkey and Brazil) which means that the mineral has now been added to the critical raw materials list of both the EU and US. This opens up a golden opportunity for Tanzania which holds the 6th largest reserves in the world (at around 17-18 mt).

Certainly, the chance to take advantage of this market (now the dust has settled around the law changes) has led to several companies investigating the possibilities offered by the country. As Cunningham put it, “In Tanzania there is no shortage of graphite and there is no shortage of big prospects.”

End in sight at Lindi Jumbo

It is in recognition of this market opportunity, Walkabout Resources and the Tanzanian Government have been pushing the Lindi Jumbo Graphite Mine ahead, with an end of construction now in sight.

Returning to the journey, Cunningham surmised, “While a

number of companies have now got their framework agreement signed with the Government, we are the only one that is currently building a mine. So there is a lot of emphasis on us. We have just finalised our debt with Gemcorp – the first major direct foreign investment of debt funding into the Tanzanian mining industry for quite some time – and this US\$25mn has given us the platform to complete the project and get it into production.

“We have been building the mine site for more than a year and it is close to 70% complete with around another five months of construction left [as of start of July]. All the mechanical equipment is already in country – either on site or on way to the site – and there are a few more shipments of electrical and

“ In Tanzania there is no shortage of graphite and there is no shortage of big prospects.”

ANDREW CUNNINGHAM, CEO OF WALKABOUT RESOURCES

instrumentation currently en route or planned to leave China in due course. We have set an aggressive timeline but we are currently on schedule to meet it and all indications suggest that construction will be complete by the end of the year. After that, we will have commissioning and then ramp up into production.”



The site is drawing closer to completion.

Image Credit: Walkabout Resources

Some of the companies that have been involved in the project include Bara International (DFS lead and mine planning), TNR (earthmoving, civils, TSF construction and mining contractor), Jinpeng Mining and

exploration, the company has had agreements in place with the local villages.

“It is important for us that the local communities benefit from what is essentially their resources,” Cunningham explained. “Our mantra is we will always try and employ local first before looking wider. The region is not known for its mining and skills are traditionally pretty poor, but that is now starting to change. We have been through most of the construction process and have been training a local workforce – many who were initially employed as casual labourers are now semi-skilled and have experience in construction competencies. We only use Tanzanian contractors and when delivered, we will not be running the mine as an ‘Australian project’. While there may be one or two key people in place, the bottom line is that it is a Tanzanian operation.”

Going forward, the company’s positive experience has left it open to the prospects of opening more projects in the country. “We do have other exploration grounds under our control, partly only for graphite but also for gold,” Cunningham concluded. “But let’s get this mine into production first and get it running profitably. Once this has been achieved, we will put more effort back into the exploration space. When we do though, we know how to operate in the country, we have got a good name here and hopefully we can replicate what we have done with Lindi Jumbo.” ■

Machinery (EPC and plant design), Alistair Logistics and City Engineering (consulting engineers).

Providing more technical detail on the project, Cunningham explained that while diesel generators will be present to provide backup power, the site has access to grid power to meet its needs. A dedicated line has been installed by TANESCO already and Walkabout will be installing the transformers over the next few months.

“Grid power in Tanzania is unique in that there are no coal-fired power stations,” continued Cunningham. “The preference of hydro and gas is good for our ESG credentials, which is a big win for us as it is so important for the way we want to operate and our funding.”

The other side of the ESG coin that Walkabout has prioritised is local content, a pertinent topic in the wider debate around African mining. Cunningham was keen to point out that, since day one of



The company set an aggressive timeline to develop the project.

Image Credit: Walkabout Resources

BME'S NEXT-GENERATION XPLOLOG

Mining solutions specialist BME has released a new version of its Xplolog system for capturing and analysing data on blast holes and decks.

BME developed Xplolog as a powerful tool for mines to monitor their block progress in real time, providing the necessary data to track trends and continuously improve the quality of blasts. The focus in developing this next-generation tool has been the detailed guidance by users, according to Christiaan Liebenberg, BME product manager software solutions. This has been undertaken to make the system more user friendly, scalable and streamlined with other BME digital solutions.

“We engaged our Xplolog users in a highly systematic way to inform us at every step of our upgrade process,” explained Liebenberg. “After our first structured interviews with users, for



Xplolog provides the necessary data to track trends and continuously improve the quality of blasts.

Image Credit: BME

instance, we developed mock-ups and wireframes that we could take back to the user group for further testing. This approach was even taken into the design and prototype stages,

ensuring that the system was in many ways actually built by the users.”

The look and feel of Xplolog has been revised in line with the progressive standardising of design across BME’s Blast Alliance digital solutions. This makes users feel familiar with the BME offering, through increased brand identification and continuity of the customer experience with Blast Alliance, said Liebenberg.

“Another important aspect of our upgrade is that users can easily customise their dashboards, creating a personalised view of block information important to the user,” he said.

Customised reports can be created and saved, allowing users to return to that recurring daily, weekly or monthly report each week or month as required. A summary view of block data is visible to track progress at a quick glance for the user.

NORMET UPDATES CONCRETE SPRAYING OFFERING

Normet has announced the launch of the latest addition to its broad concrete spraying equipment offering, the completely new battery-electric Spraymec MF 050 VC SD, specifically tailored for the needs of underground mining.

Combining the proven Normet SmartDrive battery-electric architecture with state-of-the-art spraying technology, the MF 050 VC SD offers unrivalled concrete spraying results, superior operator ergonomics and excellent serviceability – with zero local emissions.

Normet’s latest innovations and features are a direct result of spending thousands of hours in the field listening to customers and gathering operator feedback and improvement proposals. With the Spraymec MF 050 VC SD, the company created a product for sprayed concrete experts, combining valuable knowledge and feedback.

Designed with decades of experience and equipped with operator feedback, Spraymec MF 050 VC SD is purpose-built for modern mining operations in small and medium-sized tunnels.

With the MF 050 VC SD, productive concrete spraying is possible from both inside the FOPS/ROPS certified cabin with significantly improved ergonomics and control features, and outside of it with a wireless remote controller. In addition, the advanced remote driving system (RDS) enables safe and easy machine relocation.

Normet aims to provide customers with everything they need to get the best results with sprayed concrete for mining and tunnelling applications. Its offering includes equipment for concrete spraying and transportation, construction chemicals, supporting technologies alongside lifecycle services.

Liebherr expands excavator portfolio

Liebherr Mining’s latest addition to its excavator portfolio – the new R 9300 Generation 8 – is now available following the successful validation at a mine in Indonesia. At the site, the R 9300 proved its ability to improve both productivity and efficiency on site.

Once the machine enters serial production in 2024, it will replace the R 9250 within the 250-tonne class. This new machine was first presented to an international audience at the 2022 Bauma exhibition in Munich. The R 9300 is the second Generation 8 excavator in Liebherr’s product range and as such comes with the latest Liebherr Mining technology as standard. This technology provides the machine with improved on-site performance as well as compatibility with Liebherr’s Assistance Systems and future product enhancements such as automation, zero emission technologies, and digital services.

As part of the validation phase for the R 9300, Liebherr Mining partnered with its customer PT Karunia Armada Indonesia (Karunia) to establish the capabilities of the excavator on site. Karunia – a mining contractor based in East Kalimantan, Indonesia – began operating a pre-series unit of the R 9300 in September 2022 to remove and load overburden into 100- and 130-tonne trucks at the Tabang mine.

Since September 2022, the R 9300 has averaged 486 operational hours per month and 94% availability – surpassing Karunia’s KPIs for the machine. These results highlight the true potential of the excavator for improving on-site productivity.

A R 9300 being used to load overburden at the Tabang mine, Indonesia.



Image Credit: Liebherr

Jaw Crusher
PULVERISETTE 1
classic line.

FRITSCH presents powerful jaw crushing solution

The compact FRITSCH Jaw Crusher PULVERISETTE 1 classic line has been presented as the ideal instrument for fast and effective pre-crushing of hard and very hard brittle materials. The powerful comminution of the sample takes place in the Jaw Crusher under high pressure between one fixed and one movable crushing jaw in an enclosed grinding chamber. The final fineness is easily set from the outside with the 10-stage adjustable gap width between the crushing jaws. The ground sample automatically falls downward – into a drawer for batchwise comminution or via a chute into a larger collection container for continuous operation or directly into a FRITSCH Disk Mill PULVERISETTE 13 classic line for further comminution.

The especially simple crushing jaw removal takes only seconds and requires only two hand motions to ensure particularly simple cleaning – fast and thorough. This saves time and energy and offers effective contamination protection for samples.

The kinematics of the FRITSCH Jaw Crusher PULVERISETTE 1 classic line can be easily adapted to the breaking characteristics of the respective sample. Select the upward and downward movement of the movable crushing jaw relative to the fixed one in order to receive a sample in a narrow particle size range.

Both models of the FRITSCH Jaw Crushers PULVERISETTE 1 classic line can be combined with the Disk Mill PULVERISETTE 13 classic line. Mounted together onto a rack and connected to each other by a chute, they automatically grind the material from a particle size of up to 95 mm to a final fineness of down to 100 µm.

MULTOTEC'S NEW MULTOCOMPOSITE INTEGRATED LINERS

Multotec has developed a range of composite integrated mill liners in response to its mining clients' needs.

The solution not only showcases the company's advanced technical expertise, but also its ability to design MultoComposite integrated liners according to a customer's plant needs, specifications and mill operating parameters, through its technical and product development teams.

Samuel Hearn, global sales director at Multotec explained that this

solution was developed specifically for mines that operate large mills of 8-metre-plus diameter that typically used steel mill liners.

"Many mining operations that operate large steel mills are now looking to switch over to composite rubber liners, such as the MultoComposite integrated liners. Our integrated liners have the same application as traditional steel liners and can, thus, be used across mines in milling circuits," said Hearn.

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The challenges for manufacturing in 2023

Kweku Frempong, head of sales for Aggreko Africa, explains the energy hurdles laying ahead of Africa's manufacturing industry.

The sub-Saharan manufacturing sector is poised on the cusp of potential. It can significantly redefine growth and economic change across the continent, and provide a stable foundation from which countries can build robust economies and overcome legacy obstacles and challenges. The World Bank believes that it is one of the most significant drivers of structural transformation as a proven way of shifting countries into the middle- and high-income economies. However, the sector is struggling to achieve its objectives within a faltering economy and encroaching global recession, making it critical that foundational challenges, such as robust energy provision, are resolved sustainably.

To truly realise the potential of this sector and its impact on the continent it's important to understand how energy provision is shaping the conversation.

Emphasis on efficiency

The highly intensive energy consumption expectations of the sector make it essential for companies to move production towards more cost and energy-efficient methods. The keywords for 2023 are sustainability, environmentally aware, and reliability. There is scope for the

sector to draw on alternative fuels to minimise reliance on coal and to benefit from the radical dip in the costs surrounding renewables such as solar PV systems. These roof-mounted systems not only provide a reliable source of energy but can be roof-mounted to maximise space utilisation.

That said, it's equally important to invest in more sustainable solutions that are less low-hanging fruit and more long-term resolution of ongoing problems and this is where hybrid solutions come in. Integrating different energy commodities does come with some complexity though. Flexibility is key, so it is important to partner with a company with the required technical and commercial expertise to develop a tailored solution for specific needs. It is imperative to understand the unique parameters and technical constraints to ensure that a solution is developed that balances the need for reliable power and the most affordable levelized cost of energy to support the organisation in their decarbonisation goals.

This, coupled with an intelligent control platform allows our manufacturing clients to ensure the lights stay on, while also reducing their energy costs.

Shaping investment

Given the highly intensive energy consumption within the sector, there is a growing demand to move towards energy methodologies and solutions that are energy and cost-efficient. There are several trends shaping how companies are approaching energy and investment. Each has its driving forces and complexities, and each has been affected by pricing, the pandemic and the economy in different ways. For concrete and cement, efficiency remains the key tenet of energy provision and expectations. Organisations within this sector are prioritising a transition towards more sustainable energy provision while focusing on long-term solutions that allow them to balance green energy with reliability.

The metal production and processing industry has seen a gradual shift towards hybrid energy solutions. Companies within this sector are prioritising independent power generation and adding renewable energy infrastructure to their operations. Like cement, the sentiments of reliability and cost optimisation are key to investment and planning. Paper and pulp is a water-intensive sector that has a heavy reliance on energy in the production process. Manufacturers are gradually shifting towards eco-friendly paper packaging derived from recycled products and the concept of the circular economy is gaining traction. As a result, the sector is becoming increasingly reliant on lower energy intensity solutions during the production process and is continuously looking for new ways of decreasing energy consumption while promoting renewable energy use cases.

Finally, plastics and rubber are slowly proving their mettle within



Kweku Frempong is the head of sales for Aggreko Africa.

Image Credit: Aggreko

the market with the potential to develop into a sizeable source of economic growth on the continent. This sector is focused on solutions that cut energy costs while introducing sustainability and underscoring its commitment to greener energy provision.

Advancing portfolio

These changing sands of industry expectations, environmental awareness and economic fragility have seen energy solutions evolve. Companies are constantly on the lookout for energy platforms and innovations that will make it easier for them to transform their energy portfolios while tightly managing costs and budgets. All companies need solutions that allow them to bridge the gap between traditional and legacy energy provision without unnecessary expenditure.

Aggreko has collaborated with numerous organisations across different sectors and countries to create energy solutions that align with their changing needs and unique complexities. Organisations don't want or need a power outage that can cost them millions and seriously affect budgets, profit margins and costs. They want reliability – and Aggreko offers companies a proven bouquet of services and solutions that allow for optimised energy investment and absolute reliability. ■



Companies are on the lookout for energy platforms and innovations that will make it easier for them to transform their energy portfolios while tightly managing costs and budgets.

Image Credit: Adobe Stock

African
Farming
and Food Processing



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