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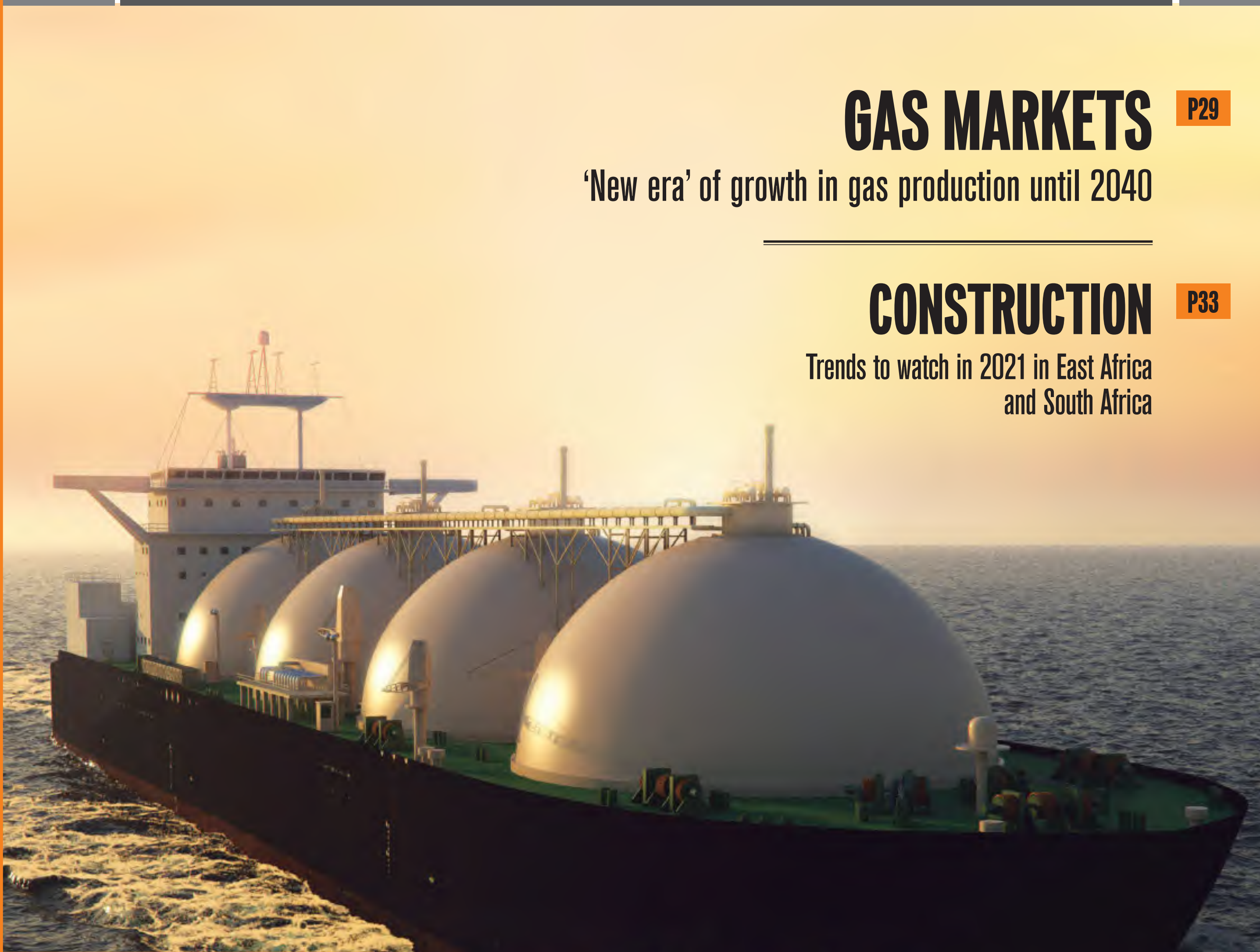

GAS MARKETS P29
'New era' of growth in gas production until 2040

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Trends to watch in 2021 in East Africa and South Africa

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"Outsourcing solutions can make all the difference between operations continuing unfettered during a crisis or coming to a crashing halt."
John Lewis, managing director, Aggreko Africa

58 YEARS
SERVING BUSINESS IN AFRICA SINCE 1964

Cover picture: Gas tanker
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Editor's Note

Welcome to the March issue. The cover story centres on the exponential growth of Africa's gas consumption and production over the next 20 years, thanks to a range of new LNG projects in the pipeline. The development of the vast offshore and onshore gas reserves found in places such as Senegal and Mozambique have the potential to lift millions out of poverty and industralise nations, according to a new report from the African Coalition for Trade & Investment in Natural Gas (ACTING), page 29. Elsewhere in the issue, manufacturers are warned they could turn Africa into a "manufacturing powerhouse" if they adopt technologies, such as AI and Internet of Things to ensure operational efficiency and productivity, page 20.

Over in the power section, we look at the merits of small hydropower and its integral role in forming mini-grids to help remote communities gain access to electricity, page 26.

What's in store for the construction sector in East Africa and South Africa? Representatives from Clyde & Co explore the tough decisions ahead to navigate the risks caused by the pandemic, page 33.

Lastly, Mining Indaba held its first ever virtual event, bringing together heads of state and leaders in the mining industry to discuss commodity trends and challenges facing the industry, page 42.

Samantha Payne, *Editor*

Contents

Africa set for huge renewable boom – driven by Egypt and Algeria

Africa's installed capacity of renewable energy is set for consecutive years of growth through 2025, a Rystad Energy analysis shows.

The continent's capacity was forecast to reach 16.8GW in 2020, climbing to 51.2GW by 2025.

At present, South Africa leads in renewable capacity with 3.5GW of wind, 2.4GW of utility solar, and a solar-dominant 1GW of pipeline projects. Egypt and Morocco are in second and third place with 1.6GW and 0.8GW, respectively.

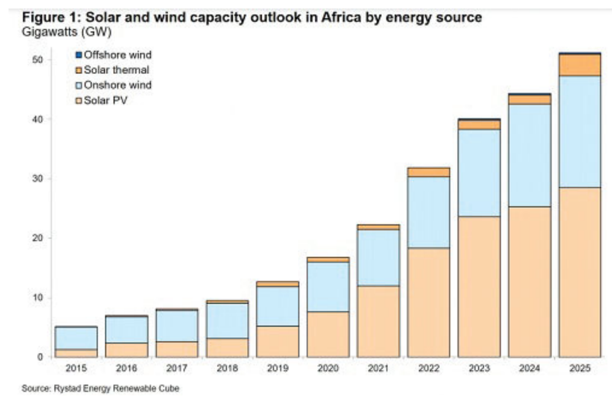

Image Credit: Rystad Energy Renewable Cube

Africa's solar and wind capacity looks to increase steadily through 2025.

Nearly 80% of African countries have installed – or plan to install – wind and solar projects. Although the learning curve may be steep for first-time market entrants with sizable development pipelines, inexperienced players will be able to leverage the experiences of Egypt, South Africa and Morocco and implement this knowledge into development plans.

Algeria is set for the most renewable growth in Africa towards 2025, increasing capacity from just 500MW in 2020 to almost 2.9GW in 2025. The increase will come primarily from one mega-project, the four gigawatts Tafouk 1 Mega Solar Project, which will be developed in five phases of 800MW capacity each, to be tendered between 2020 and 2024. Rystad Energy expects three of the tendered projects with 2.4GW of capacity will be commissioned by 2025.

Tunisia will also see formidable growth from 350MW of renewable capacity in 2020 to 4.5GW in 2025. The growth will stem from larger solar plants, such as the 2GW TuNur Mega Project, currently in the early stages of development.

Egypt overtakes South Africa

In terms of speed, Egypt has been one of the quickest African nations to install solar and wind since 2017, with 3GW of installed capacity. The country has a 9.2GW development pipeline, which mostly consists of wind projects – putting Egypt on track to overtake South Africa in 2025 and become Africa's green powerhouse.

Growth will come from large projects such as the 2GW Gulf of Suez Red Sea Wind Project in the governorate of the Red Sea. Of the installed capacity, 500MW will be developed by German giant Siemens Gamesa and 1,500MW is yet to be allocated. Four out of the top 10 African projects set for the next five years will be in Egypt.

Morocco follows Egypt with 2.5GW of installed capacity, dominated by 1.7GW of wind power. Rystad Energy expects solar will drive the growth there, with large projects in the works such as the 1GW Noor Midelt Hybrid (CSP + Solar PV), the 400MW Noor PV II, and the 120MW Noor Tafilalet.

Ethiopia's renewable capacity figures will also take a considerable leap: the county currently has only 11MW of installed solar capacity and 450MW of installed wind, but is expected to have 3GW of renewable capacity by 2025. The Tigray Hybrid Project will drive this increase and is set to contribute 500MW of solar capacity by 2025. "Many African nations are turning to renewable solutions to meet energy targets, with solar overtaking wind in the next five years as the renewable technology of choice," said Gaurav Metkar, analyst at Rystad Energy.

S&P PREDICTS NORTH AFRICA'S POSITIVE CREDITWORTHINESS IN 2021

S&P Global, the data and analytics research specialist, has predicted a clearer picture on the creditworthiness and economic recovery of North African and Jordanian banks throughout 2021. With the pandemic pushing most North African economies into deep recession, fiscal and monetary measures have preserved the banks' credit quality thus far. S&P expects to see the gradual phasing out of such measures to reveal the real impact of Covid-19 on the banks' asset quality.

The company's analysis of suspected economic recovery suggests that the North African banks' asset quality will diminish in 2021, once regulatory precautions have been lifted. The crisis has continued to be a profitable event for banks in the region, with Tunisia serving as an outlier as some of the country's national banks' capitalisation looks to be affected long-term. Most other regional banks and economies are expected to begin their recovery throughout the year, but this could be delayed by a resurgence of Covid-19 cases, mutations or a delay in Europe's economic return.

The report also suggests small and mid-size enterprises, and the hospitality, construction and real estate, and transportation sectors will fuel the formation of non-performing loans. Household indebtedness, however, remains limited across the region compared with other emerging markets.

BRIEFS

Spire expands into MENA markets

Spire Research and Consulting has expanded its global footprint into the Middle East and North Africa markets, by entering into a joint venture with UAE-based ZASK Associates. The new subsidiary, Spire Research & Consulting MENA LLC, will operate from an office in The One Tower Building in Dubai.

Leon Perera, CEO of the Spire Group, said, "My team and I are excited to be involved with the dynamic business environment in the MENA."

Image Credit: Pexels/Lorenzo

Spire, research specialist, has launched a MENA subsidiary.

Hitachi electric train project in Egypt on track

Egypt's National Authority for Tunnels is continuing to progress on its Hitachi electric train project, running from from Ain Sokhna to New Alamein, passing through the New Administrative Capital, according to media reports.

The electric train project will span 90km, connecting with the Adly Mansour Station as well as Administrative Capital Station 2. The first phase of the project is expected to be completed by the end of October 2021.

Image Credit: Hitachi

The project will cover a distance of 90km.


PEOPLE
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TOGETHER

Bolted thickeners from FLSmidth to optimise Mozambique plant


Image Credit: FLSmidth

FLSmidth bolted thickeners were selected for a coal plant in Mozambique.

FLSmidth was chosen as the preferred provider for four large bolted thickeners for a large customer in Mozambique. Two of the thickeners are designed to reduce water load on the filters allowing for a drier filter product, while the other two thickeners recover water from the plant tailings.

The installation, which includes E-Volute feedwell technology for superior flow distribution, will contribute to achieving optimal water balance at the coal plant in Mozambique.

"The thickeners measure 45m in diameter and will control the density of material to the belt filters, improving the plant's output," said Howard Areington, FLSmidth's general manager for projects and account sales in sub-Saharan Africa and the Middle East. "The design was based on the test work we conducted on the customer's material, allowing us to determine the best thickener solution."

He emphasised that a bolted thickener is quicker and safer to construct onsite, saving on costs and improving quality control. This suited the project's remote location.

"The extent of welding in the construction of normal steel thickeners typically runs into kilometres," he added. "By contrast, the amount of onsite welding required by a bolted thickener can be measured in metres." The four thickeners include E-Volute feedwell technology which improves flow distribution, leading to lower flocculant consumption, better settling rates and improved overflow clarity for the optimal performance of the thickener.

Despite the Covid-19 lockdown, good progress was made on the fabrication of the thickeners in South Africa, according to FLSmidth project manager Kevin Kockott. This has been managed by leveraging FLSmidth's global resources and the design teams' ability to work remotely.

"Our local South African office collaborated closely with our engineering hub in Salt Lake City in the USA, ensuring that our engineering work on the project was able to continue without interruption," Kockott said.

TETRA TECH WINS RENEWABLE ENERGY CONTRACT

Tetra Tech, a provider of high-end consulting and engineering services, has announced that the United States Agency for International Development (USAID) awarded the company a five-year, US$25mn single-award contract to increase renewable energy consumption and reduce deforestation in Zambia.

The alternatives to charcoal activity represents the flagship investment from the USAID/Zambia Mission to counter climate change and contribute towards poverty reduction through the sustainable management of forest resources.

"Tetra Tech has supported USAID to promote renewable energy and manage natural resources in Africa for 40 years," said Dan Batrack, Tetra Tech chairman and CEO. "We are pleased to continue using our Leading with Science approach to promote alternative technology solutions to address the impacts of climate change in developing countries."

EMTEL & NEC XON DEPLOY SD-WAN FOR MAURITIUS

Emtel, the telecom operator in Mauritius, has partnered with NEC XON to deploy SD-WAN in the country, which has reduced the corporate customer's connectivity costs by between 30-40%, together with the provision of a secured network.

The SD-WAN serves around 70 sites, including a data centre and the head office.

"The customer previously had a private WAN with dedicated links between each site. This SD-WAN solution provides them with additional services and ultimately, improves the customer experience," said Prakash Bheekhoo, the director of Emtel Business.

"The customer now has a high-performance WAN that uses commonly available Internet links. They were able to replace more costly MPLS links, gain integrated end-to-end security, and also get better visibility into the network as well as the ability to serve additional applications within their environment."

Enterprises typically have been using MPLS to get reliable and secure Internet connectivity in the branch environment. But reliable MPLS uses relatively expensive dedicated connectivity. SD-WAN provides security and reliability while using less expensive broadband connectivity.

NEC XON transferred design, architecture, deployment and SD-WAN management skills to Emtel during the project, enabling the business to continue delivering the highest calibre, fully managed SD-WAN deployments throughout Mauritius. This rollout, which began in August 2020 and was completed in November, was delivered despite the disruptions of the global pandemic. NEC XON and Emtel engineers established a laboratory to test the solution architecture prior to deployment. They created a zero-touch deployment solution that speeds up deployment. The same platform enables rapid and automated updates.

BRIEFS

IFAT Africa postponed to November 2021

Due to the ongoing Covid-19 pandemic, Messe Muenchen South Africa has rescheduled the co-located IFAT Africa, analytica Lab Africa and food & drink technology (fdt) Africa trade shows from July to 2-4 November 2021. The trade shows held at the Gallagher Convention Centre, Johannesburg will highlight the synergies and address the challenges across the water and wastewater, food and beverage processing, laboratory and analytical industries.


Image Credit: Adode Stock

The trade shows will take place from 2-4 November.

Johannesburg's first gas-fired power plants

Harith General Partners, which funds infrastructure development across Africa, is pushing ahead with plans to build the first gas-fired power plants in South Africa's industrial hub of Gauteng and is exploring options to source the fuel.

The fund manager wants to build two gas-fired plants at the site of its coal-fired Kelvin Power Station, which lies east of Johannesburg close to the city's main airport.


Image Credit: Adobe Stock

Harith plans to build two gas-fired plants at the site of its coal-fired Kelvin Power Station.

Ignite Power receives BRILHO funding to expand operations in Mozambique


Image Credit: Adobe Stock

In the future Ignite plans to enter Niassa and Nampula provinces.

Ignite Power has announced a new collaboration and funding with the Energy Africa Mozambique programme (BRILHO). The new collaboration with the programme, which is funded by UK Aid and implemented by the SNV Netherlands Development Organisation (SNV), is aimed at expanding Ignite's operations throughout the country, connecting tens of thousands of families to clean, sustainable electricity and improved cooking solutions in their homes.

Ignite has been operating throughout the sub-Saharan region since 2014, and has already connected more than 1.5 million people to sustainable and clean electricity. The company provides its customers with the most affordable price plans in Africa, and has created 3,500 job opportunities in remote communities, with inclusiveness and gender equality leading every step of the way.

The company launched operations in Mozambique in 2019, signing a US$48mn project with the Ministry of Mineral Resources and Energy, which has been working vigorously to supply the country's population with a steady supply of electricity by 2030 as part of the National Electrification Strategy. Despite these and government efforts, more than 70% of the population of Mozambique, about 20 million people, still live without access to electricity. The collaboration and funding with the BRILHO programme allow further expansion throughout the country, reaching new provinces.

"Since the initial deployment of the Mozambique project, we were able to reach and connect thousands of households in remote communities, and are now ready to expand and scale operations further", said Arthur Houston, managing director at Ignite Power. "With leading global entities such as the BRILHO programme on our side, we can establish greater impact and reach millions more, supporting the government's goal to achieve universal electricity access by 2030."

"We are very enthusiastic about this collaboration with Ignite, which is well-aligned with our mandate and has the potential to improve the quality of life of thousands of Mozambican families and spark local economic development opportunities by improving the access to solar home systems and improved cooking solutions," commented Javier Ayala, BRILHO Programme team leader.

IVANPLATS ADVANCES PRODUCTION PROJECTS IN LIMPOPO PROVINCE, SOUTH AFRICA

Ivanhoe Mines have announced that the company's South African subsidiary, Ivanplats, has signed a non-binding term sheet with Orion Mine Finance, a leading international provider of production-linked stream financing to base and precious metals mining companies, for a US$300mn gold, palladium and platinum streaming facility.

Ivanplats also has appointed two prominent, international commercial banks, Société Générale and Nedbank, as mandated lead arrangers for a senior project debt facility of up to US$120mn. Both the stream financing and project debt facility will be used to advance the development of Ivanplats' tier one Platreef palladium, platinum, rhodium, nickel, copper and gold project in Limpopo province, South Africa, toward initial production. The initial capital cost for the phased development plan envisaged under the Platreef 2020 preliminary economic assessment, is estimated at US$390mn.

CAPRARI ANNOUNCES VIRTUAL ONLINE SPACE TO SUPPORT CUSTOMERS

Caprari Digital House, a dynamic and innovative virtual space, is Caprari Group's answer to the global adoption of remote working.

Online from 16 February 2021, Caprari Digital House is a new way to serve and support Caprari customers, enabling the company to offer an authentic experience for those who want to enter the world of Caprari and participate in online events.

Caprari Digital House is much more than a simple exhibition space – it is an interactive environment where customers can find products in 3D, see and share technical videos, and sign up for webinars made directly by project managers. It is a multilingual space, available 24/7.

As a communications hub, it is perfect for welcoming and talking with customers in live chat, and making appointments online in real time with readily available sales staff.

Marcello Petrucci, corporate sales and marketing director at Caprari, commented, "We are delighted to be offering our customers a complete digital experience. Caprari Digital House represents a new frontier on top of our existing, traditional networks, which is sure to reinforce relationships with our clients and allow us to continue being protagonists in the world of water cycle solutions. Exploring Caprari Digital House gives online users the opportunity to traverse a space in which they can find out about our products, complimented by a series of videos and technical data. But that's not all: to render virtual visits even more worthwhile, one can book a video call and then talk with remote Caprari experts, from sellers to product managers. And this is only the beginning – in 2021 we plan to expand our range of digital services even further."

BRIEFS

Mozambique LNG Project and AfDB win PFI award


Image Credit: Adobe Stock

AfDB agreed a US$400mn loan to finance the project.

The African Development Bank (AfDB) and the Mozambique Liquefied Natural Gas (LNG) Area 1 Project have jointly received the Global Multilateral Deal of the Year 2020 award by Project Finance International.

The project, the single largest foreign direct investment in Africa to date with a value of more than US$24bn, will exploit Mozambique's immense offshore natural gas reserves, which can potentially transform global energy markets.

Old Mutual fund wins stake in Namibian solar plant


Image Credit: Adobe Stock

The Namibian plant commenced commercial operations in 2017.

An infrastructure investment fund, managed by Old Mutual Investment Group, has acquired a majority stake in a 5MW solar PV plant at Rosh Pinah in the IIKaras Region of Namibia.

The shares were previously owned by AEE Power Ventures SL, a Spanish energy company, which developed and constructed the plant.

Shares will be majority owned by Namibians, with 30% owned by a group of previously disadvantaged Namibians.

GE collaborates with the biggest power plant in Senegal

GE announced that it has secured an order to supply gas power generation equipment for West Africa Energy's 300MW combined-cycle power project in Cap des Biches, Dakar, Senegal.

Image Credit: GE

GE will supply two 9E.03 gas turbines, one STF-A200 steam turbine, and other plant equipment to the Cap des Biches project.

Upon completion, the Cap des Biches plant will be the biggest power plant in the country and is expected to generate nearly 25% of the power consumed, providing the equivalent electricity needed to power up to 500,000 Senegalese homes. The plant is expected to begin operations in phases, starting in 2022, enhancing universal access to electricity and supporting the government's target to increase its generation capacity with a greater utilisation of natural gas and renewables.

"We are pleased to collaborate with GE to deliver reliable and efficient gas turbines to Senegal, aligned with the country's strategy on gas to power under the leadership of President Macky Sall to develop the energy sector that will be critical for the development of strategic sectors of the economy, while actively driving localisation initiatives," said Samuel Sarr, CEO of West African Energy. "Once completed, the project will go a long way in reducing the cost of electricity in the country," he added.

GE will supply two 9E.03 gas turbines, one STF-A200 steam turbine, three A39 generators, two heat recovery steam generators and plant equipment as part of the project scope.

"Cap des Biches power plant in Senegal represents another opportunity to use gas-fired generators as an ideal complement to variable renewable resources because they can change power levels quickly, turn down to low levels when demand is lower, and start rapidly. All of these attributes enable gas turbines to work with renewables to maintain reliability in a power system. The plant will provide flexible power to Senegal and help improve the quality of people's lives," said Elisee Sezan, CEO for GE's Gas Power business in sub-Saharan Africa.

The 9E gas turbine is a robust, proven platform that delivers high availability, reliability, and durability at a lower cost-per-kilowatt. The STF-A200 steam turbine's configuration is well-suited for this plant with a wide operating range to help meet the needs of a grid with a large amount of renewables.

Cap des Biches combined-cycle gas turbine power plant will be built by Turkish company, Calik Enerji.

COMETTO SPMT MOVES EQUIPMENT FOR PLANT

Specialists from Bolloré Transport & Logistics transported 900 tonnes of equipment for the construction of phase four of the Azito power plant in Ivory Coast.

Marine Maroc's Cometto SPMT convoy formed by eight axle lines coupled side-by-side with other eight axle vehicles assisted in moving a turbine weighing 361 tonnes, a generator and other equipment.

The self-propelled modular transport, controlled by a wireless remote control was steered under the freight packed in protective plastic. The vehicle is equipped with a 600mm stroke. The electronic steering of the light blue painted modules guarantees maximum maneuverability and precision through a +135/-135° steering angle. Marine Maroc is based in Casablanca, and the Cometto MSPE vehicles have been a part of its fleet since 2013. Cometto offers four interchangeable series of SPMT, having capacities up to 70t per axle line for the EVO3 category.

STARSIGHT PARTNERS WITH UPDC TO CREATE SOLAR PV POTENTIAL IN NIGERIA

Starsight, a leading West African solar power provider announced its investment in UPDC Facility Management, a joint venture with UACN Property Development Company, bringing together Starsight's strengths in sustainable power solutions and UPDC's track record in facilities management and market knowledge.

"We are very pleased to be partnering with UPDC on this new venture," commented Tony Carr, chief executive officer of Starsight. "UPDC has built a strong track record and unparalleled market knowledge over two decades and remains Nigeria's foremost real estate development firm with a profitable and scalable facilities management business. This transaction opens up a residential and commercial pipeline for solar PV in excess of 10MW and defines both companies as the market leaders in this space."

"The partnership with Starsight is aligned with UPDC's broader strategy to strengthen and scale our facilities management portfolio, with a view towards sustainable growth and value. Expanding our service offering to include the provision of energy management solutions enables the company to increase the revenues generated in each of its existing managed properties and provides a strong basis for servicing new developments looking for more robust facility management services," said Deborah Nicol-Omeruah Ag, CEO of UPDC.

"Set on a path to profitability, we intend to increase our facility management footprint from 28 to 50 properties across Nigeria over the next three years in our bid to establish UPDC Facility Management as the service provider of choice for individual residents and local corporates. We're confident we will achieve this with Starsight as our partners."

BRIEFS

AfDB assists in reducing carbon emissions

Image Credit: Adobe Stock

ITMOs promote low carbon technologies.

The African Development Bank extended financial support to a project that will strengthen the efforts of West African countries to meet targets under the Paris climate accord. The bank will underwrite the preparation of concept notes, exploring the use of internationally transferable mitigation outcomes (ITMOs). The initiative will help governments develop technical capacity and institutional infrastructure to enable the private sector to access new sources of climate finance.

FCTA to urbanise Nigerian towns

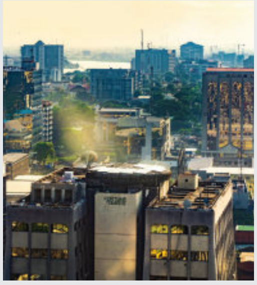


Image Credit: Adobe Stock

FCTA will support critical infrastructure development.

The Federal Capital Territory Administration (FCTA) in collaboration with AfDB is set to urbanise eight FCT satellite towns of Jikwoyi, Gwagwalada, Kuje, Dutsen-Alhaji, Abaji, Orozo, Zuba, and Kwali, according to reports.

FCT Minister of State, Dr Ramatu Tijjani Aliyu, said the administration is planning to provide increased budgetary allocation to support infrastructure development outside the city centre, including roads and bridges, water supply and sanitation.

Sudan

Sudan is located in East Central Africa. It is bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, South Sudan to the south, the Central African Republic to the southwest, Chad to the west, and Libya to the northest. Sudan is the third largest country in Africa, after Algeria and DR Congo. Sudan's total land area amounts to some 1,886,068km^2, with 18,630km^2 of irrigated land.

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

Mining Operations in Sudan

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

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

We at DAL Mining ensure customized mining services solutions; from a specific scope of work to a complete turn-key mining operation. DAL Mining has the knowledge, experience, people, and equipment to build an all-needed mine-site infrastructure, as well as the ability to provide a full production mining service. These services enable mine owners to optimize their resources, control and lower their costs, and execute projects more efficiently.

Today, the DAL Mining expert team not only delivers sustainable cost savings for your business, but also provides a wide range of services to help achieve maximum cost efficiency.

Hani Girgis
Sales & Business Development Manager
DAL Mining

DAL GROUP
ENGINEERING DIVISION

Denmark offers financial support to encourage green trade in Kenya

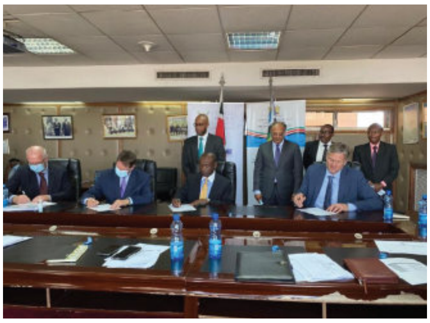


Image Credit: TradeMark East Africa

The signing ceremony in Nairobi between the Government of Norway and TradeMark East Africa.

Confirmed at a signing ceremony in Nairobi, the Government of Denmark has committed to twin financial agreements worth US$17.5mn to support Kenya's green trade efforts and contribute to the fight against Covid-19.

The funding will be channelled through TradeMark East Africa (TMEA), one of the largest Aid for Trade organisations worldwide. In the two agreements, US$14.5mn will support Kenya's efforts to transition to green trade and create sustainable jobs under the Denmark and Kenya Strategic Framework for 2021 to 2025. The second agreement of US$3mn will support continued response to Covid-19 under TMEA's Safe Trade Emergency Facility (Safe Trade) Programme.

With the green trade funding, TMEA will partner with government institutions and private sector in adopting sustainable and efficient transport infrastructure for reduced barriers to trade, improving trading standards and sanitary and phytosanitary issues and improving business competitiveness in Kenya. The new funding will build on results that have been achieved in previous programmes, funded by Denmark featuring support to non-motorised transport in the ongoing construction of Mbaraki Road, in Mombasa to include construction of storm water drainage facilities for climate change adaptation, installation of street lighting, construction of foot paths, walkways, and access ramps to enhance movement and safety of people living with disabilities.

Ole Thonke, the Danish ambassador to Kenya, said, "TradeMark East Africa falls under the Denmark-Kenya Sustainable Jobs and Trade thematic focus area whose objective is green transformation and climate change adaptation, income opportunities and decent jobs, business competitiveness, trade and investments. Under these intervention areas, activities will be implemented around trade facilitation, value chains, renewable and non-renewable energy, investment in natural capital, resource efficiency and cleaner technology, climate change mitigation and adaptation, competitiveness, productivity, advocacy, and market access. The cornerstone of the TradeMark East Africa's approach is that of partnership to achieve results, with a national focus to supporting implementation of regional issues."

AFDB TO FUND SOUTH SUDAN'S HEALTH COMPLEX

The African Development Bank (AfDB) has announced it will finance the construction of the second phase of the Public Health Emergency Operations Center (PHEOC) in Juba, South Sudan.

The project, comprising infrastructure, furniture and equipment, will strengthen preparedness and response capacities of the country for public health emergencies, in line with the 2005 International Health Regulations.

In addition, with funding from the bank, the World Health Organisation (WHO) is procuring an oxygen plant and vehicles to support the government's ongoing Covid-19 response.

"Having the right infrastructure in place is important. It is equally important to have the right health policy and programmes, so that we can better plan, prepare and respond to address everyone's health," said Guracha Guyo, health emergency programme coordinator at WHO.

IFC ISSUES LOAN FOR KIOO DURING COVID PANDEMIC

The International Finance Corporation (IFC), a member of the World Bank Group, has announced a loan to Kioo, East Africa's largest producer of glass bottles, to help the Tanzanian company weather Covid-19 related challenges, protect jobs, and invest in energy-efficient machinery to reduce its carbon footprint.

The US$10mn loan will provide Kioo with working capital during a challenging time for the region's beverage industry. Despite glass containers accounting for 90% of beverage packaging in sub-Saharan Africa, the industry is facing falling demand because of Covid-19 and associated measures to contain its spread, including the closure of bars and restaurants.

The loan to Kioo is part of IFC's US$8bn fast-track financing package, announced in March 2020 to support existing clients and preserve jobs and economic activity during the Covid-19 pandemic.

Kumar Krishnan, general manager at Kioo Limited, said, "Despite the effects of the pandemic, Kioo, with IFC's support, continues to pursue its long-term vision of continuous improvement. IFC's support will enable us to emerge from the current, difficult environment in a stronger position and be well placed to serve our customers as a preferred supplier."

Frank Ajilore, IFC resident representative for Tanzania and Burundi, commented, "Supporting businesses with financing is a major part of IFC's strategy to protect jobs and sustain economic activities as we navigate the challenges of Covid-19. Our investment in and partnership with Kioo will help strengthen the company's cashflow and lay a foundation for a stronger future."

Kioo employs 600 people and supplies glass containers to 12 countries on the African continent, as well as to countries in the Indian Ocean. Recently, it has announced a commitment to reducing its environmental impact by installing energy-efficient equipment at its factory in Dar es Salaam, including more efficient production systems.

BRIEFS

EAM poised for exploration in Ethiopia

Image Credit: Adobe Stock

EAM has invested US$66.8mn in African exploration since 2005.

East Africa Metals has completed planning and received government approval for its Phase 1 US$2.7mn exploration programme in Ethiopia. This will include 8,000m of diamond drilling, 115km line of geophysical surveys, environmental, metallurgical studies and resource calculations/updates.

The exploration programme is set to commence as soon as travel restrictions for the Tigray region are lifted.

Safaricom offers cashless fares for buses in Nairobi

Image Credit: Adobe Stock

The service works across all phones and is equally available on an online portal.

Safaricom has partnered with Forward Travelers to offer an M-PESA fare collection solution to commuters in Nairobi.

In the coming weeks, the firms will complete the roll-out of the service for the 400 matatu buses plying the Kayole - CBD route. The service is powered by Simple Fare, developed by Netcen Interactives, which enables commuters to pay fares through Lipa Na M-PESA with the payment immediately reflecting to the bus crew's phones.

IVECO supplies 160 Trakker trucks to Phibela Industrial in Ethiopia

IVECO has delivered models AT380T38H 6x4 rigid trucks and AT720T42TH 6x4 tractor trucks to Phibela Industrial, a leading Ethiopian company for edible oil, oilseeds crusher, specialty fats and oleo chemicals manufacturer.

The vehicles meet the company's very specific technical and operational requirements with their capacity to work on impenetrable, broken terrains, and tackle the constant stresses of the harshest conditions while delivering extraordinary performance. The Trakker trucks will be used to cover the route between Djibouti and Bure.

The trucks are equipped with the Eurotronic automated gearbox, which delivers lower operating costs and higher operational safety for the operator and superior driving comfort for the driver.

Antonio Caruso, general manager AMCE ETHIOPIA, who was present at the delivery, said, “I am extremely pleased to participate in this important project as an IVECO representative. The combination of its engine technology, components and assemblies make the IVECO Trakker unstoppable and equal to the toughest challenges. Phibela’s project is a great challenge that we want to face and win by distributing edible oil on the Ethiopian territory.”

Fabio De Serafini, IVECO Africa and Middle East business director, added, “The strong collaboration with Belayneh Kindie Import Export is testament to our commitment and reliability in providing the best transport solution, always focusing on the concept that quality and excellent service are our priority when meeting our customers’ business needs.”

Phibela Industrial covers 29ha of land leased from Amhara Regional Government in the industrial town of Bure (441km from Addis Ababa) and it is part of the Belayneh Kindie Import Export Group (BKIE), which is also the assembler of IVECO heavy trucks shipped in kits from Europe in completely-knock-down units.

Belayneh Kindie, CEO Belayneh Kindie Import Export, stated, “We have planned to supply quality food oil at a competitive price and offer variety, to hopefully penetrate the market soon since we have a quality and high demand in the area. The logistics of inbound raw materials and outbound finished goods will be operated with our fleet of IVECO Trakker trucks that we have chosen for their proven robustness, reliability, performance and high service standard in the country over the past decades.”

The cooking oil demand of the Ethiopian market is 507,191 tons annually, of which almost 95% is imported edible oil. Therefore, Phibela Industrial PLC in Ethiopia can significantly contribute to significant savings in the country’s foreign currency expenditure.

Image Credit: IVECO

The IVECO Trakker trucks are ideally suited to the mission at the Phibela agro-processing complex.

Upcoming Events Calendar 2021

MARCH

1-5

AFRICA ENERGY INDABA 2021
Virtual
www.africaenergyindaba.com

15-18

NORTH AFRICA PETROLEUM EXHIBITION & CONFERENCE
Algeria
www.africa-energy.com/events/north-africa-petroleum-exhibition-conference

17-18

6TH ARE ENERGY ACCESS INVESTMENT FORUM 2021
Virtual
https://eaif2020.b2match.io/

24-25

WEST AFRICA POWER SUMMIT 2021
Dakar, Senegal
www.wafpower.com

APRIL

20-23

THE 3RD POWER WEEK AFRICA
Virtual
www.power-week.com/africa

MAY

11-13

ENLIT AFRICA
Virtual
www.enlit-africa.com

20-22

POWER & ENERGY RWANDA 2021
Kigali, Rwanda
https://expogr.com/rwanda/powerenergy/aboutus.php

25-26

BOTSWANA MINING AND ENERGY 2021
Gaborone, Botswana
www.bwminingandenergy.com

JUNE

2-4

WAMPEX
Accra, Ghana
www.wampexwestafrica.com

24-26

7TH LIGHTEXPO AFRICA 2021
Nairobi, Kenya
www.expogr.com/lightexpo

29-30

SOUTH SUDAN OIL & POWER 2021
Juba, South Sudan
www.africaoilandpower.com/event/ssop-2021

JULY

1-3

THE 7TH SOLAR AFRICA 2021
Kenya
www.expogr.com/solarafrica

Senegal's Oil & Energy Minister Mouhamadou Makhtar Cissé to open West Africa Power Summit 2021


West Africa Power Summit 2021 returns for its fourth year.

Image Credit: Adobe Stock

The West Africa Power Summit in Dakar, Senegal will be organised with state power company, SENELEC, Agence Nationale Pour Les Energies Renouvelables, ANER, and the Senegal Government and will focus on the Economic Community of West African States (ECOWAS) region, addressing the key challenges facing the power & renewable sector in West Africa.

The two-day summit on 24-25 March will be running in its fourth year and will be officially opened by the Senegal Oil & Energy Minister Mouhamadou Makhtar Cissé.

Under the mantra "Bridging the Financial Gap for Off Grid/On Grid Power Projects in ECOWAS", it will bring together investors, regulators, ministries, national power companies and independent power producers as well as the leading technology solution providers. It will be an intimate gathering with a series of workshops, roundtables, panel discussions, networking and one-to-one business meetings.

A statement on the West Africa Power Summit website said, "We are able to impact your business development efforts in the region by arranging pre-determined closed door business meetings with senior executives. Our project intelligence reports ensure that every meeting you have will be extremely targeted, and you will know exactly who you will meet and the topics that will be discussed weeks in advance of the summit commencing. We only set up mutually agreed meetings, ensuring there's synergy and gives you the best possible chance of doing business at the summit. This approach allows you to consolidate six to 12 months' business meetings into the two days, cutting your travel times and expenditure."

For more information about the summit, which is being organised by Vale Media Group – the African Oil & Energy Business to Business events company, visit https://wafpower.com.

Image Credit: Adobe Stock

Sustaining momentum: How Africa's financial markets can drive its recovery

As Absa launches their fourth Africa Financial Markets Index, Jeff Gable, head of research at Absa CIB, discusses how Africa's economic growth will be determined through creating open and accessible financial markets.

For 20 years, African economic development has been a success story. With vast natural resources and eye-catching annual growth exceeding 5%, the continent has steadily attracted international investors in search of better returns. It is true, the Covid-19 crisis has taken its toll: Africa is set to enter its first recession since the early 1990s, straining public finances, endangering the livelihood of countless people and setting back progress against the sustainable development goals by years. As is the case globally, the focus for Africa will now be in resetting towards that positive path enjoyed until very recently.

One key contribution to ensuring that the continent can best mitigate the ravages of this pandemic recession, and be well positioned to kickstart the next leg of the continent's economic growth and development in the years ahead, is through creating open transparent, and accessible financial markets. Never has it been more important that Africa be in a competitive position to attract the investment capital needed to build for the future, and well-developed financial markets are a key enabler in the efficient matching of the continent's public and private sector borrowers with lenders from across the world.

At Absa, we recently launched our fourth iteration of the Africa Financial Markets Index, created alongside the Official Monetary and Financial Institutions Forum (OMFIF). The index provides an in-depth look into the continent's financial markets and the regulatory, governance and macro environment that support them. Even a tumultuous year such as 2020, points to recent progress in financial market development that will only serve to improve the viability of Africa's rapid and sustainable recovery.

Building a trusted ecosystem

One critical enabler of the engagement between borrowers and lenders is the provision of reliable, timely and thorough information to would-be investors. At the sovereign level, this might be about the provision of macro statistics, regular and transparent decisions on monetary policy or the availability of a globally-recognised credit rating. For the private sector this might be about governance, or about accounting or regulatory standards, and for the financial markets themselves, this might be about adopting global norms and more.

Helpfully, across the continent many countries are making positive strides on these fronts. A key accomplishment has been the improvement of communications; everything from financial results, the employment of directors, company news through press releases or, in the case of institutions like central banks, minutes from meetings. This gives investors what they need for informed investment decisions and serves to reassure them that investing in the relevant asset is in line with their risk/return strategies. The 2020 Index found that Mauritius and Tanzania ranked well when it came to quality of communications within the 'market transparency, tax and regulatory environment' pillars.

As well as this, African governments are increasingly adopting international reporting and legal standards. In Ghana, they have successfully implemented new frameworks for insolvency procedures, which reduce systemic risk and provide an added layer of certainty to investors.

Similarly, IFRS 9, which requires banks to estimate expected credit losses based on historic, current and forecasted economic conditions, is now widely used across the continent and some of those that do not yet use this framework, such as Ethiopia, have a timeline in place for adoption.

Investment opportunities

Africa's embracing of ESG principles is opening new opportunities and investments. Our index found that Africa can become a hub for ESG. Firstly, markets are learning to both create and label their ESG assets. Seychelles, for example, was among the first to introduce a blue bond, with proceeds earmarked for the preservation of the ocean environment. Nigeria is set to launch its third sovereign green bond, joining Kenya who first issued in 2019, and Egypt with its September issue. The Johannesburg Stock Exchange has introduced a sustainability division for green, social and sustainability bonds. And with the challenge of Covid-19 as 2020's defining focus globally, in March the African Development Bank sold the world's largest social bond, a set of US$3bn three-year bonds to help finance the fight against the pandemic.

Putting money to work

Progress is also being made across the continent in better mobilising internal capital to create a robust financial system. Often when thinking about generating the investment that will take economies forward, the focus in Africa has been on how to bring in more foreign investment. Going forward, there is no doubt that ensuring that global investors who face historically low, and in many cases even negative, yields from traditional investments will be a key source of funding for Africa. But they will not be the only source, as domestic savings are also increasingly put to productive use.

While previously, savings were often held informally, across many countries on the continent this money is now better able to formally enter the financial system. Securities exchanges in countries as diverse as Kenya and Eswatini have developed mobile trading platforms for retail investors, whilst others such as Tanzania are developing theirs. On the institutional investor side, countries like Namibia and Lesotho are encouraging the development of their local financial markets through the investment of more domestic pension assets in-country. Fintechs are also helping improve access to finance for small and medium-sized businesses. This has become crucial as Covid-19 has disrupted the delivery of financial services.

While the index found that countries' scores in the 'market depth' category dropped somewhat from last year, we can put this down to the withdrawal of international capital, which greatly impacted the region's stock markets and liquidity. Improving local participation will only serve to deepen the financial markets. ■

"Africa cannot have a healthy society without adequate access to safe water, sanitation and hygiene. In the past 10 years, the African Development Bank has invested more than US$6bn in sanitation and hygiene improvements, but much more financing is needed from the private sector, development finance institutions, governments and other sources. The new *Sanitation and Wastewater Atlas of Africa* can inform strategic investment going forward."

Image Credit: African Development Bank

WAMBUI GICHURI

Acting vice president for Agriculture, Human and Social Development at the African Development Bank

"Despite the tragedy presented by the pandemic, these unprecedented times have brought development institutions together to seek solutions and encourage innovation, teaching us that the best way forward is together. ICIEC believes that through the AATB programme, our multilateral efforts can enhance pandemic responses, capacity building efforts and economic security, providing the citizens of Arab and African countries the knowledge and materials to build a better future."

OUSSAMA KAISSI

CEO of the Islamic Corporation for the Insurance of Investment and Export Credit (ICIEC)

"Counterfeiters and illicit traders have been taking advantage of our continent for centuries, depriving our nations from substantial revenues, fostering corruption and costing the lives of hundreds of thousands of African citizens every year. This can no longer be tolerated, it needs to stop, and it must stop now. We must put our national interests and the safety of African citizens first. I am proud to be at the forefront of this initiative and grateful to our friends in the Kingdom of Saudi Arabia for standing by our side during this historic moment."

WAMKELE MENE

Secretary-general of the African Continental Free Trade Area (AfCFTA)

"The Covid-19 pandemic has re-emphasised the importance of reliable, affordable, clean energy. It has served as a stark reminder that the new energy age must be inclusive, just and low-carbon if we are to achieve sustainable development in southern Africa and around the world. Africa can seize the moment for meaningful change, and dramatically improve socio-economic outcomes by moving decisively towards the energy transformation."

FRANCESCO LA CAMERA

Director-general at IRENA

"AFC has been engaging development partners worldwide to find ways that we can act in concert to mobilise the funds necessary for Africa's post-pandemic recovery and optimise efficient deployment. This loan is in line with AFC's effort to support the development-vital infrastructure, from energy to transport and commerce, and to return Africa back to the path of sustainable growth and development. We are committed to working with the OPEC Fund and other partners as critical enablers of essential infrastructure development."

Image Credit: AFC

SAMAILA ZUBAIRU

President and CEO of the Africa Finance Corporation (AFC), following their US$50mn loan with the OPEC Fund

"We are proud that the Africa-1 consortium members have chosen ASN, their trusted and experienced partner in the region, to build and to deploy the Africa 1 system, an addition to the global network that will interconnect millions of people and take part in the digital development of the whole region."

ALAIN BISTON

President and CEO of Alcatel Submarine Networks, commenting on the start of construction of the Africa 1 subsea telecom system

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

ITFC SIGNS AGREEMENT WITH TUNISIA GOVERNMENT

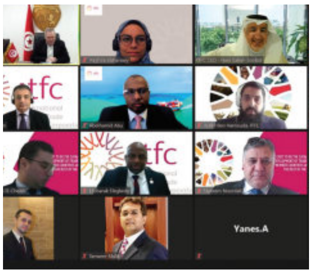


Image Credit: ITFC

The aim is to diversify economy and boost recovery from the impact of Covid-19.

The International Islamic Trade Finance Corporation (ITFC), a member of the Islamic Development Bank (IsDB) Group, has signed a framework agreement with the government of Tunisia, represented by the Ministry of Economy, Finance and Investment Support, to increase trade flows and build trade capacity.

The US$1.5bn agreement is aimed at supporting Tunisian state-owned companies to finance the importation of essential commodities such as energy and industrial products amongst others, as well as to access trade development programmes to drive exports and promote inter-regional trade with other Arab and African countries.

The agreement aims to make way for further cooperation between the two parties in the areas of trade development. Tunisian state-owned companies will have access to ITFC's integrated trade solutions, and benefit from regional trade platforms such as the Aid for Trade Initiative for Arab States (AfTIAS) and the Arab-Africa Trade Bridges (AATB) programmes, which promotes trade and investment flows between Arab and African countries through enhancing enterprise competitiveness, reducing trade costs, and improving technological capacities. These companies will also benefit from ITFC's LC confirmation/ ICR issuance products to secure export-related transactions.

WORLD BANK APPROVES GRANT FOR BETTER ELECTRICITY ACCESS IN SIERRA LEONE

Image Credit: blickpixel/Pixabay

The World Bank will support the country's post-Covid-19 economic recovery by providing electricity to households, businesses, health clinics and schools.

The World Bank has approved a US$50mn grant from the International Development Association (IDA) to improve access to electricity in Sierra Leone and enhance institutional capacity and commercial management of the sector.

The project will be co-financed with a US$2.7mn grant by the Japan Policy and Human Resources Development Fund.

The Enhancing Sierra Leone Energy Access project will support the country's post-Covid-19 economic recovery by providing electricity to households, businesses, health clinics and schools, which is a critical part of the recovery process. It is set to support the replacement of costly fuel generation plants with low-cost power, which would free up scarce fiscal resources for other urgent socio-economic needs. This project will provide electricity to approximately 276,000 people and about 700 health facilities and schools and help cut an average of 15,135 tons of greenhouse gas emissions per year.

Around 23% of Sierra Leoneans have access to electricity, which is below the sub-Saharan average of 30%. The gap in infrastructure is impacting people's welfare and ability to access services and also severely impeding on competitiveness, job creation and poverty reduction.

"This project will help address the country's key infrastructure deficits, which is one of the most fundamental elements for promoting sustainable growth and job creation in the COVID-19 recovery," said Gayle Martin, World Bank country manager for Sierra Leone.

TANESCO TO APPOINT A CONSULTANT FOR MALAGARASI RENEWABLE PROJECT IN TANZANIA

Image Credit: russmac/Pixabay

The AfDB has agreed to finance US$120mn for this ambitious project.

Tanzania Electric Supply Company (Tanesco) is introducing a call for tenders to select a consultant to construct the 50MW Malagarasi run-of-river hydropower plant, which is financed by the African Development Bank (AfDB).

As reported in the *Afrik21*, Tanesco is currently working to implement the Malagarasi hydroelectric project, and therefore, the company is launching this call for tenders to select a consultant who will be able to assist in implementing this renewable energy project.

The hydroelectric project is being developed at the Igamba Falls on the Malagarasi River. The project is set to construct a gravity overflow spillway about 600m long; a 132kV transmission line, over a distance of 54km.

The power plant aims to enable the electrification of several surrounding localities through medium voltage and low voltage cross-linked lines, reported the source.

The AfDB has agreed to finance US$120mn for this ambitious project. Additionally, the project is receiving US$20mn funding from the African Growth and Opportunity Fund (AGTF), the source further added.

SUNCULTURE RECEIVES US$11MN TO EXPAND SOLAR IRRIGATION

Image Credit: Free-Photos/Pixabay

The funds will enable SunCulture to scale up renewable energy installations at smallholder farms and households.

SunFunder, a fund manager and intermediary for solar energy investments in sub-Saharan Africa, has made the first disbursement from a new US$11mn syndicated debt facility to SunCulture, a solar irrigation company based in Nairobi, to expand its operations in sub-Saharan Africa.

SunFunder arranged as well as invested in the facility, leading a group of lenders, comprising Triodos Investment Management, Nordic Development Fund, AlphaMundi and the AfDB's FEI OGEF managed by Lion's Head.

The funds will enable SunCulture to scale up renewable energy installations at smallholder farms and households that will mitigate over 20,000t of CO_2 annually as farmers replace diesel pumps with solar ones, while facilitating income growth and job opportunities in rural communities.

"We are delighted to have led this syndicate of proactive lenders who worked well together for a common goal: to help SunCulture reach many more farmers," said Jemimah Kwakye-Fosu, investment officer at SunFunder. "It shows how working capital can be combined with end user financing, which is essential for making productive use technologies affordable."

"The past year was devastating for the millions of smallholder farmers in Kenya; 87% are in a worse financial position due to the pandemic. 81% of SunCulture farmers, however, were able to increase their revenue from farming in 2020. Solar irrigation helps create food security and sovereignty, and it also helps lift people out of poverty," said Samir Ibrahim, CEO at SunCulture.

Strategic planning is critical for data centre providers so that infrastructure projects are not impacted at any moment during a crisis.

Image Credit: Aggreko

Changing the supply chain challenge

John Lewis, managing director, Aggreko Africa, advises data centre operators to consider outsourcing to avoid potential disruption to their supply chains over the months ahead.

A report by the Institute for Supply Management found that nearly 75% of companies surveyed had reported supply chain disruption during the pandemic. While data centre supply chains have not been as seriously impacted as many other sectors, there remains a need for companies to shore up the proverbial defences as they approach 2021, and find new ways of securing their supply chains as the pandemic rages on. Lead times will continue to lengthen, delays will continue to plague systems and companies, and planning will prevent these challenges from significantly impacting business and data centre performance.

For data centre operators and service providers, this is the right time to prepare for potential disruption and delays over the next few months. This is particularly important for those companies that are undertaking major projects or are managing the uptime of critical equipment in essential sectors. For these companies, supply chain limitations have to be managed incredibly tightly to mitigate risk. And one area that can potentially shift the disruption dynamic is outsourcing.

Yes, outsourcing.

> "The benefit of outsourcing is that it can be implemented to suit your unique business requirements."
>
> JOHN LEWIS, MANAGING DIRECTOR, AGGREKO AFRICA

Why outsourcing is a radical transformation

For many companies, the idea of outsourcing alternative solutions while they wait for their supply chains to catch up is not the first one that they would consider. Yet this is perhaps one of the most versatile and efficient strategies that any company can employ to minimise the risk of right now, and any potential risk that may emerge tomorrow. Outsourced solutions can be implemented on any site to ensure that infrastructure projects or cooling requirements are not impacted by unexpected supply chain challenges at any time.

The benefit of outsourcing is that

it can be implemented to suit your unique business requirements. You just need the right strategy that is aligned with the business needs on an immediate, intermediate or long-term basis. If you have already planned for what you need in the event of an emergency, and you have a trusted partner on board, then you know that you have systems in place for when the unexpected happens. This level of strategic planning can be used by data centre providers and operators to ensure that infrastructure projects or cooling systems are not impacted at any point during a crisis.

Planning for the long term

There has been a global increase in construction and maintenance projects, particularly around significant data centre projects. As the building work ramps up, so will the demand for equipment and solutions that will allow for these projects to meet deadlines. However, there remain concerns around the supply chain and its ability to keep up with construction demand.

This again is where an outsourcing solution can make a huge difference to the project's bottom line. Instead of the spiralling costs associated with unexpected delays, companies can use outsourcing solutions to keep facilities in operation while they wait for components and critical equipment to arrive. The benefit is that these outsourcing cooling and power solutions are flexible in terms of scale and output so you can adapt their usage to suit your site and requirements. This also allows for a degree of flexibility around time frame changes and further unplanned issues.


Image Credit: Aggreko

John Lewis.

> "With Aggreko as a trusted partner, you can prepare for the uncertain and ensure that your systems are ready for whatever the future holds."
>
> **JOHN LEWIS, MANAGING DIRECTOR, AGGREKO AFRICA**

Outsourcing solutions can make all the difference between operations continuing unfettered during a crisis or coming to a crashing and expensive halt. This was a situation felt deeply by many companies during the pandemic, and it is one that a few care to repeat. Over the past year, Aggreko has continued to operate at full capacity, providing companies with outsourcing solutions that are tailored to their situations and budgets. The company has stepped in with answers to problems that could have seriously impacted on data centre provider capacity and service, and has evolved its outsourcing portfolio to suit the ongoing market demand for versatile and relevant solutions.

As the world faces a lengthy battle with lockdowns, supply chain challenges, and an ever-present pandemic, some things can be controlled. With Aggreko as a trusted partner, you can prepare for the uncertain and ensure that your systems are ready for whatever the future holds. ■


Image Credit: Aggreko

As more and more data centre projects are built, there will be demand for equipment and power solutions to meet these deadlines.

Covid-19 accelerates the rise in digital payments

Dare Okoudjou, founder and CEO of MFS Africa, spoke to Robert Daniels to discuss how the digital money transformation is providing a new route for money into Africa and encouraging new enterprises on the continent.

No one wished for Covid-19, a virus that has caused unimaginable disruption and heartache to every single person on the planet. That being said, it was inevitable that some sectors would be hit harder than others, and for Dare Okoudjou and MFS Africa, promoting contactless mobile money transactions over physical cash, 2020 emerged as their most successful commercial year to date. This takes nothing away from the CEO and his team, who worked tirelessly through the pandemic, and were forced to deal with lockdown restrictions and changes to work life the same as everyone. But once Covid-19 had burst onto the scene and the 'new normal' had taken hold, MFS Africa marked the year with several exciting commercial enterprises to expand their business.

In June last year, MFS Africa announced the acquisition of Beyonic, a digital payments management provider of business services across Africa which focuses on domestic payments and collections with secure front-end business functionality. The deal has allowed MFS Africa to put their digital payments hub (which connects more than 200 million mobile wallets throughout the continent) at the service of SMEs, fintechs and social impact organisations, which form the core of Beyonic's customer base.

This was followed, in December 2020, by MFS Africa signing a partnership with PayPal service Xoom, to offer secure and convenient mobile money transfers to six countries across Africa; Cameroon, Ghana, Rwanda, Uganda, Zambia and Zimbabwe. Through this agreement Xoom customers in UK, Europe and North America, via MFS Africa's digital payments hub, will be able to send money to sub-Saharan countries.

Dare Okoudjou, founder and CEO of MFS Africa.

Image Credit: MFS Africa

Okoudjou spoke to *African Review* to explain his company's mission to promote mobile money transfers and leverage digital channels to encourage remittances.

African Review: You recently mentioned plans to expand into more African countries in 2021, could you expand on this?

Dare Okoudjou: "Our mission as Africa's leading digital payments hub, is to continue to create new digital pathways between mobile money users in Africa and around the globe. Our goal is to be in all 54 countries. We are always working on that goal and will certainly be driving towards it with even more determination than ever before.

"Moreover, since our acquisition of Beyonic last year, we are also focusing on making this digital payment network available to entrepreneurs whether they are SMEs, fintechs, or social impact organisations, eventually supporting them with domestic and cross-border payments."

> "The 'new normal' has helped chart a faster path towards digital transformation, but the road ahead is still a long one."
>
> DARE OKOUDJOU, FOUNDER AND CEO OF MFS AFRICA

AR: Has the Covid-19 pandemic affected business and what do you expect the future will hold as the vaccine is rolled out and life returns to normal?

DO: "Across Africa, the pandemic has really amplified the struggles of moving finances within and around the continent. With border closures, digital money transfers were essential in enabling households and individuals to access much needed remittances. This had a positive impact on the growth of transaction volumes in our industry.

"The vaccine news is obviously very positive, although we are observing issues of inequality with the vaccine distribution that will no doubt negatively impact Africa. However, we don't believe that good news on the health front is bad news for the growth of digital payments. African businesses and policymakers fully understand the importance of having digital payment infrastructure for resilience and growth. And yet, cash is still the main game in town. The 'new normal' has helped chart a faster path towards digital transformation, but the road ahead is still a long one."

> "I am especially proud of the passion and extraordinary commitment that the MFS Africa team brings to our mission to make borders matter less."
>
> DARE OKOUDJOU, FOUNDER AND CEO OF MFS AFRICA

AR: Diaspora remittances are critical to the lives of millions of Africans as you have previously mentioned. How will the new deal with Xoom affect remittances coming into Africa?

DO: "Remittances are a remarkable entry point for fintech in Africa. The service is in high demand, familiar to end users, and served well through technology. By connecting money transfer companies from around the world, we help them expand their coverage in Africa through a single integration, and enable them to provide their users with more possibilities to send money to Africa."

AR: Do you think this deal will bring more commerce to Africa outside of remittances?

DO: "The accelerated adoption of digital payments in Africa absolutely presents opportunities outside of remittances. The more people who are able to pay each other and get paid by each other, the easier it is to launch new ventures to African consumers."

AR: Overall, how will this affect life for African people at ground level?

DO: "It is estimated that the African diaspora sends more than US$40bn from around the world to Africa. But sending money to Africa is expensive, forcing many to send money through informal and often unsafe channels. Increasing the volumes and options for sending money helps to lower the cost of sending money home, meaning more money can end up in the pockets of those who need it most."

AR: You waste no time acquiring new partnerships and developing new digital solutions. Do you have more of these in the pipeline that you could tell us about?

DO: "We have plenty of promising conversations in the pipeline for 2021. While it's under wraps for now, we have an exciting, albeit challenging, year ahead."

AR: On a personal note, what are you most proud of with your company, especially over the last year?

DO: "Over the last year, I am definitely most proud that we had our most successful commercial year to date. I, however, do not take for granted that each one of our MFS Africa team continued to work under the weight of a pandemic. I am especially proud of the passion and extraordinary commitment that the MFS Africa team brings to our mission to make borders matter less. This, at a time when many immigrants, such as myself, could not cross borders to see their loved ones for months on end."

Image Credit: Adobe Stock

MFS Africa recently signed a partnership with Xoom to connect customers in Europe and North America to Africa.

Remittance flows

The World Bank recognises remittance flows as a vital component to the growth and development of low and middle-income countries (LMICs), especially with the gap between these and Foreign Direct Investment (FDI) expected to widen even further in the wake of the pandemic.

Although remittance flows to sub-Saharan Africa declined by 9% in 2020 and is expected to decline 6% in 2021 (as opposed to 2019) this source of commerce remains vital and remittances to the region are estimated to be worth US$51bn across 2020. This is why the high expense of sending money to sub-Saharan Africa, at an average cost of 9.3%, is so problematic and why Okoudjou and MFS Africa considers reducing this figure and championing solutions to encourage remittances a fundamental part of its business mission. With the recent partnership with Xoom and acquisition of Beyonic the company is clearly taking efforts to reduce this.

Although Okoudjou kept his cards close to his chest about the future, on the back of such a successful 2020 it would be no suprise to see MFS Africa making headlines again in the coming months. ■

Call for manufacturers to prepare for Industry 4.0

Gerhard Hartman, vice president: Medium Business, Sage Africa & Middle East tells African Review that manufacturers will need to boost efficiency to master the challenges of the current market.

African manufacturers will have to boost efficiency, productivity and quality.

Image Credit: Adobe Stock

The aftermath of the virus outbreak, 2020 has certainly been a challenging year for the manufacturing sector. The World Bank predicts the pandemic will push sub-Saharan Africa into its first recession in 25 years with growth predicted to fall to -3.3% for 2020. Reduced demand has taken its toll on the balance sheet and cash flow of most producers.

Pandemic effects to linger

Many side effects from the pandemic could linger for years – from a scramble to reconfigure global supply chains, to new consumer preferences formed under lockdown, to gluts of some commodities and products and shortages of others. Even as these challenges come to the fore, many of the old ones are very much in play – from growing global competition to the pressure to reduce carbon emissions.

Yet, Africa also has the potential to grow into a manufacturing powerhouse. The nurturing of a larger and more integrated regional market via the African Continental Free Trade Agreement, the expansion of the middle class, a youthful population, and rapidly improving infrastructure all bode well for the future.

However, African manufacturers will need to boost efficiency, productivity and quality if they are to master the challenges of the current market and harness the emerging opportunities. Leaders are looking at the technology backbones they must put in place to drive operational excellence, optimise costs and accelerate innovation.

> "Africa has the potential to grow into a manufacturing powerhouse."
>
> GERHARD HARTMAN

New industrial revolution

Manufacturers recognise that a new industrial revolution is transforming how and where goods are made, and African industry needs to keep up. Manufacturers also know their legacy technology environments are not yet ready to integrate emerging technologies such as advanced robotics, the Internet of Things, big data and artificial intelligence (AI).

According to IDC, at least 40% of companies worldwide are stuck in an ERP technical debt with heavily customised systems. Over the decades, most manufacturers have added layers of complexity to their ERP systems, resulting in a tangle of interfaces and poorly integrated, best-of-breed applications.

These antiquated solutions lead to high cost of ownership and low levels of business alignment. They also impede enterprise agility and make it hard to harness the next generation of emerging technologies. For that reason, forward-thinking manufacturers are looking to migrate to a new generation of intelligent business management solutions.

Business management solutions enable manufacturers to meet the challenges of today's business world, providing insight into costs and operational performance, and providing information for smarter and faster business decisions. This, in turn, allows them to enhance efficiency, diminish costs, and increase sales and profitability.

> "A new industrial revolution is transforming how and where goods are made, and African industry needs to keep up."
>
> **GERHARD HARTMAN**

Such modern, integrated business systems offer seamless communication across supply chains and access to real-time data. Next-generation business management systems enable companies to optimise manufacturing processes end-to-end, including production planning, project management, process scheduling, compliance, and mobile supply chain management, while reducing costs.

End-to-end optimisation

For most manufacturers, cloud technology offers a way to accelerate into this digital world. Cloud solutions can be rolled out relatively quickly, configured rather than customised, and adopted in a modular, incremental way that allows a company to bank quick wins on the way. Companies not ready to migrate all infrastructure to the cloud can adopt a hybrid cloud model and take the journey at their own pace.

Next-generation business management solutions simplify operations to allow businesses to grow faster and stay agile. They are easy to adapt to fit unique processes, roles and preferences. With minimal IT investment and resources, companies can enjoy rich, integrated functionality to support all core business processes. ■

How AI is suitable for manufacturing operations

IFS predicts that half of manufacturers will be using some form of artificial intelligence (AI) by 2021. But according to a study released in January by Plutoshift, manufacturers are struggling to adequately adopt AI across their business. 60% of respondents said their company has been unable to come to a consensus on a focused, practical strategy for AI implementation, while 72% said it had proved harder than expected to set up the technical and data infrastructure necessary to make the project viable.


Manufacturers are making progress with AI for predictive and prescriptive maintenance.

Image Credit: Adobe Stock

Role for ERP

One factor contributing to the difficulty is that the enterprise resource planning (ERP) software running their business has not previously been capable of facilitating their AI journey. Many of the manufacturers that have had success with AI tools have done so by solving specific problems in isolation, such as demand forecasting, supply chain optimisation, schedule optimisation or natural language processing (NLP)-driven customer service bots.

However, ERP tools with comprehensive AI capabilities embedded within them, can collate and analyse data from every facet of a manufacturing organisation, helping them to accurately plan ahead, optimise processes, and reduce waste. Using ERP as the vehicle for AI, manufacturers can reinvent their business around digital-first processes and disrupt their market.

The AI-enabled ERP allows manufacturers to optimise or automate end-to-end processes rather than just specific tasks – streamlining a quote to cash value chain or sales order capture to shipping. By combining classic ERP data sets such as maintenance history with streaming data from assets and external data such as economic and weather indicators, companies can forecast and optimise margin from operating diverse asset portfolios such as power grids or offshore oil rigs.

Manufacturing use cases

While it is challenging, some manufacturers are already making progress with AI for predictive and prescriptive maintenance, resulting in less unplanned downtime, more efficient operations and better compliance with health, safety and environmental (HSE) regulations.

The key to predictive maintenance is determining which data, collected from machines in operation, can be used to predict future events. Everything from vibration to heat to power draw data that may be used as the raw material upon which AI algorithms and stochastic methods can build, predicting breakdowns, diagnosing issues and enabling advanced reliability-centred maintenance (RCM). In addition, by modelling and simulating processes through a digital twin of a production facility or piece of equipment, companies can get improved visibility over a variety of scenarios and leverage AI to receive recommendations for how best to handle them.

By Bob de Caux, Vice President of Automation at IFS

Mitsubishi Forklift Trucks extends range with higher capacity models

Having won plaudits on its release in 2020, the FBCB series of electric counterbalance trucks from Mitsubishi Forklift Trucks is expanding with the addition of two 72V models.

Built for the demands of the Middle East and CIS markets, the FBCB series from Mitsubishi Forklift Trucks has a wide choice of options and attachments available, allowing the truck to be precisely specified to meet the needs of a business. In particular, two different types of cold storage modification are available for work in up to -35 degrees and up to -55 degrees respectively.

On launch, it offered a choice of nine 48V models with capabilities ranging from 1.0-2.5 tonnes. The new 72V trucks offer the same great advantages and exceptional performance as existing models, but with higher capacities of 3.0-3.5 tonnes.

And like existing models the company says they are exceedingly nimble and compact, allowing for a high level of manoeuvrability in tight spaces.

Thanks to its electric hydraulic power steering and curve control, FBCB delivers smooth turning and good lateral stability on corners, meaning less force on the load during transit.

Built for drivers

While compact on the outside, the operator compartment remains spacious and highly ergonomic, helping to keep drivers feeling right at home and staying comfortable throughout long shifts.

All-around vision has been maximised for safety. The narrow dashboard, high-visibility mast, small steering wheel, and optimised lever placement offer good visibility without any compromise to controls. This allows the driver to remain more aware and confident of their surroundings at all times.

The series has proven hugely popular with drivers of all skill levels thanks to intuitive controls and a choice of operation modes. By choosing between normal, power and custom (which can all be adjusted), the truck can be easily adapted to suit the driver's preferences as well as better matching the working environment.

In any of these modes a further Eco mode can be set, making energy consumption even more efficient. Running costs are reduced and the working time can reach up to 11.5 hours on a single charge.

With its rating of IPx4, the power and endurance of FBCB can be relied on indoors and out.
Emission-controlled sites and those with clean operations and wet produce will not need a separate IC engine truck for outdoor duties, helping to keep everything cleaner and greener. ■

For more information on how the FBCB series can help business operations, visit www.mitforklift.com

> "Thanks to its electric hydraulic power steering and curve control FBCB delivers smooth turning."
>
> **MITSUBISHI FORKLIFT TRUCKS**

Image Credit: Mitsubishi Forklift Trucks

The FBCB series of electric trucks from Mitsubishi Forklift Trucks.

Hitachi ABB Power Grids partners with consortium in Angola on solar project

Hitachi ABB Power Grids has joined forces with Sun Africa LLC and M. Couto Alves S.A., on behalf of Angola's Ministry of Energy and Water, to supply the main electrical infrastructure to connect sub-Saharan Africa's largest solar project to Angola's transmission.

Hitachi ABB Power Grids' scope of work will include the design, main power equipment supplies, testing and commissioning of the project. It is based on an in-depth grid impact study into the customer's unique requirements to determine in advance the best way to achieve the integration of the Government of Angola's renewable energy programme. The initial stage of the project will include the construction of a 188 MWp solar power plant and six other solar power plants to electrify homes in the southern African country.


Image Credit: Hitachi ABB Power Grids

The project will enable homes in Angola to be connected to the grid.

"This is one of the largest and most significant photovoltaic projects delivered," said Niklas Persson, managing director of Hitachi ABB Power Grids' Grid Integration business unit. "We are contributing pioneering technology to enable MCA to integrate more renewables and electrify rural areas, while maintaining a stable network. Our role is to develop the project from idea to energisation – ultimately shaping a reliable and sustainable energy future for Angola."

"We are pleased to partner with Hitachi ABB Power Grids as we share its commitment to provide low-cost clean energy throughout the African continent," commented Nikola Krneta, CEO of Sun Africa. "This is an incredible accomplishment given the ongoing financing and other challenges due to the Covid-19 pandemic. It demonstrates the dedication, capabilities and the resilience of all our partners to overcome the unique challenges together."

The initiative is being financed under the Swedish Export Credit System (the Swedish Export Credit Corporation and Swedish Export Credit Agency), which aims to raise investment in Swedish sustainable technology globally.

DANFOSS FORMS NEW CLIMATE SOLUTIONS SEGMENT

Danfoss has changed its group structure to combine the heating and cooling segments into Danfoss Climate Solutions. With the new segment, Danfoss will intensify its focus on the green agenda in attractive global markets, helping customers and partners take action to mitigate climate change and build a greener future. Danfoss will further strengthen its focus on innovation and application expertise.

"What we engineer and what we sell plays a part in the climate agenda and in meeting the world's climate targets. Buildings must be made energy-efficient and carbon emissions must be reduced. Governments and the private sector both have critical roles to play in making sure investment in sustainable energy innovation increases. We already have the technologies and the solutions to support the transition to a decarbonised economy, and by working together, governments, companies, investors and citizens can better understand the challenges - and how to overcome them," said Jürgen Fischer, president Danfoss Climate Solutions.

TURBINE JOINT VENTURE LAUNCHED IN ALGERIA

GE Algeria Turbines (GEAT) a joint venture between Algeria's Sonelgaz and General Electric, has rolled out the first two 9FA gas turbines assembled locally in the country, while adhering to global quality standards and achieving a zero injuries and illness (I&I) rate.

Located in the town of Ain Yagou, near Batna in High Plains, the plant, which was completed in March 2020, will play a major role in building up local capabilities and localising the power generation value chain in Algeria. The teams that assembled the first two gas turbines are 100% locally recruited. GEAT employs around 140 Algerian nationals and is expected to create up to another 200 jobs by 2024. The plant currently manufactures components such as gas turbine piping and skids, assembles turbines and control systems, and services power generation equipment. It is envisaged that the plant will be an advanced manufacturing, assembly, digital, service and repair centre for the power generation sector to serve as an example not only for the country but for the whole of Africa.


Image Credit: GE

GE's 9FA gas turbine.

"We expect to start creating digital solutions for the power sector by 2021 and to begin providing repair services for GE's 9FA gas turbines for the first time in Africa by 2024," said Samir Bouabba, GE's financial service leader for North Africa. "We are changing the perception of what is possible in the country and committed to pushing the frontier of possibilities further," he added.

BRIEFS

Research project launched by LSBU

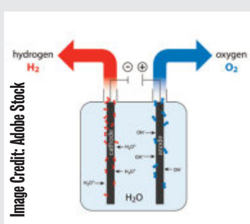
Image Credit: Adobe Stock

The project will look at a new way of recovering waste heat from industry.

A research project to develop a new way of recovering waste heat from industry and decarbonise heating and cooling through new hydrogen technologies, has been launched by a team led by the UK's London South Bank University (LSBU). The project will investigate new ways of providing heating and cooling from energy intensive industries including steel, glass, paper and food, contributing to cost and energy savings and carbon emissions reduction.

Electrolysis partnership for hydrogen production

Image Credit: Adobe Stock



Electrolysis is used to produce hydrogen.

Siemens Energy and Air Liquide have signed an MoU to combine their expertise in PEM (Proton Exchange Membrane) electrolysis technology, used for hydrogen production.

They intend to focus their activities on co-creation of large industrial-scale hydrogen projects in collaboration with customers; laying the ground for mass manufacturing of electrolysers in Europe; and research & development activities to co-develop next generation electrolyzer technologies.

Siemens Energy conference focuses on sustainable energy future

Siemens Energy held a MEA Week virtual conference in partnership with the DIHK, Ghorfa, GMIS and Masdar, from 19-21 October 2020, to drive forward the sustainability and decarbonisation agenda. Deblina Roy reports.

Image Credit: Siemens Energy

Distinguished panellists discussed the various roadmaps and policy changes their countries are undertaking to meet their need for electrification and spur the energy transition.

Entitled '*Shaping the Energy of Tomorrow*', the MEA Week virtual conference featured a world-class speaker line-up including regional ministers, CEOs, energy and finance industry leaders as well as Siemens Energy experts, with themes for the three days being transformation, innovation and sustainability.

The conference started with a keynote address from Damilola Ogunbiyi, the CEO and special representative of the UN Secretary-General for Sustainable Energy for All (SEforALL), who spoke about the impact that energy access has on people's lives.

Her impassioned speech touched on the importance of access to sustainable and clean energy as the keys to unlock a prosperous future for billions of people around the world.

She acknowledged that the Covid-19 pandemic has resulted in an incredible response in terms of innovation and life-saving electricity connections for health centres across Africa and Asia that otherwise struggle with large energy access.

"Countries need to pursue a 'recover better' strategy that invests in clean energy, can benefit from increased GDP, greater energy provision, job creation and improved agriculture, gender and health outcomes," Ogunbiyi said.

"This strategy should focus on integrated, reliant energy transitions that accelerate the pace of progress on access, prioritising energy efficiency and supporting faster growth of renewables," she added.

> "The energy world is very complex, and we cannot tackle it with a simplistic approach."
>
> **CHRISTIAN BRUCH, CEO OF SIEMENS ENERGY**

A panel session moderated by John Defterios, CNN's Business Emerging Markets editor, explored the challenges that the energy industry is facing as we advance towards greater sustainability, innovation and ultimately the transformation of the energy landscape. We are in the midst of a paradigm shift, moving away from fossil fuels and towards a more diverse energy mix including hydrogen and nuclear energy. The session also highlighted the importance of interim solutions while we make that shift to renewables.

Speakers included Masdar's CEO

Mohamed Al Ramahi, National Grid Saudi Arabia's CEO Ibrahim Al Jarbou and the International Renewable Energy Agency (IRENA) director general Francesco La Camera.

"The energy world is very complex, and we cannot tackle it with a simplistic approach. It requires optionality and diversity of solutions," commented Siemens Energy CEO, Christian Bruch.

"As we transition to a more sustainable energy landscape, it's important to offer interim solutions and look into changing the conditions. Renewables will play an essential role of course, but the truth of the matter is that we still need gas, and the shift in energy dynamics will take time," he added.

> "Africa is home to 17% of the world's population but accounts for just 4% of global investment in electric energy."
>
> **KARIM AMIN, EXECUTIVE VICE PRESIDENT OF GENERATION AT SIEMENS ENERGY**

Energy inequality

The second panel entitled: *'Energising societies to enable successful and sustainable growth',* touched on the importance of government and private sector partnerships to address the energy transition.

There are still 850 million people worldwide without reliable access to electricity, and addressing that will require government initiatives and an adjustment of policies to encourage investment.

In a keynote address, Siemens Energy's EVP Generation, Karim Amin, emphasised the need to eradicate energy inequality and unreliability around the world, especially in the Middle East and Africa.

"There are still today areas that are suffering from significant (energy) shortcomings in the provision of access to electricity, not only in rural areas but in capitals and major cities. Africa is home to 17% of the world's population but accounts for just 4% of global investment in electric energy. We need to act now to eradicate such energy inequality," Amin said.

Distinguished panellists discussed the various roadmaps and policy changes their countries are undertaking to meet their need for electrification and spur the energy transition. One key point was the need to provide clear regulation to encourage and attract investors.

"Governments need to become even more ambitious... and recognise all that technology that innovation and entrepreneurship are offering us. So what is really needed is a comprehensive, legal regulatory framework for investment," ACWA Power's president and chief executive Paddy Padmanathan said.

"It is absolutely essential to attract the right partners, and also it gives the confidence for us to make the very significant capital investments," he added.

Siemens Energy's managing director for the Middle East, Dietmar Siersdorfer concluded the session saying that to achieve long-term successful energy transition it has to be inclusive for all the countries and communities, and should be customised to meet national needs.

The last session of the day, was entitled, '*Financing tomorrow's energy systems to realise the potential of sustainability'* focused on the importance of holistic and competitive financing models that would enable the shift towards more sustainable energy systems.

"Opportunities abound but so does competition. There need to be more innovative and cost competitive financing solutions to be able to cope with this competition," said Niall Hannigan, CFO of Masdar. ■

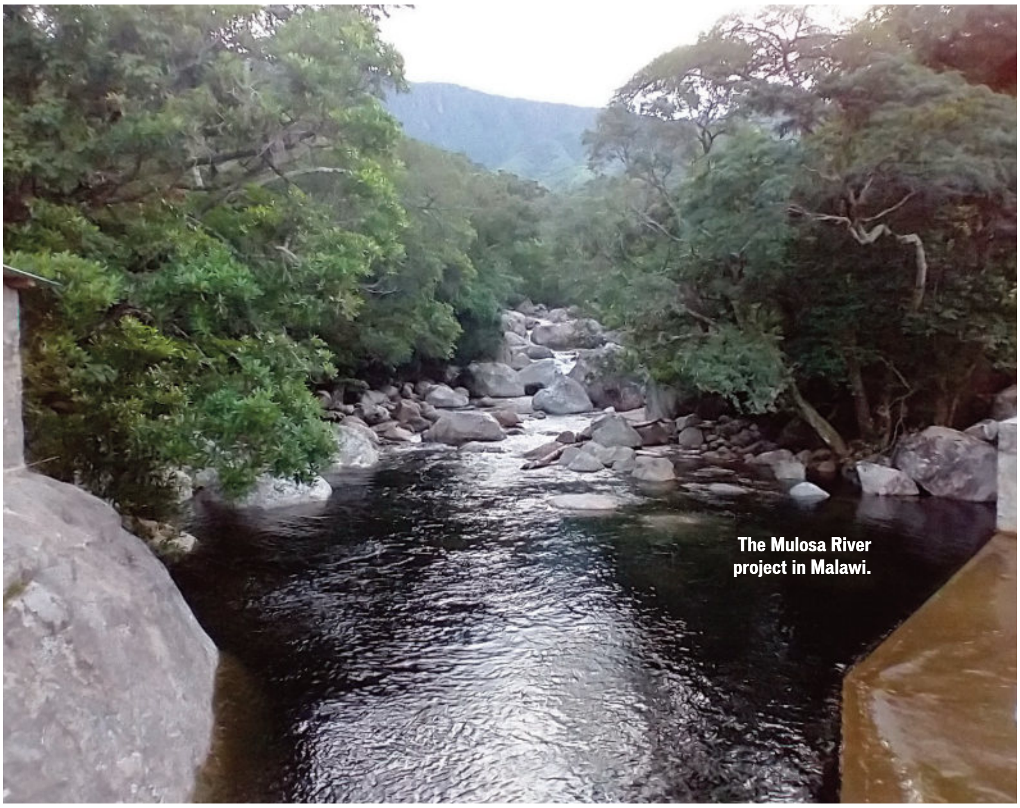
For more information about the MEA conference visit www.africanreview.com

Renewables will play an important role as we transition towards a more sustainable future.

Image Credit: Adobe Stock

Small hydropower potential in Africa

Gilkes, a leading small hydro and pump specialist, has had a special relationship with Africa, supplying small hydro turbines for tea estates and farms since the early 1900s - some of which are still in existence today.



The Mulosa River project in Malawi.

Image Credit: Gilkes

To date, UK-based Gilkes has exported more than 460 hydro turbines to Africa, with 140MW of installed power and exported more than 6,800 hydro turbines to 85 countries worldwide.

The ongoing demand for power in Africa never ceases and Gilkes is playing a crucial part to meet this. With almost 600 million Africans still lacking access to electricity, the power industry in Africa continues to have a mammoth task ahead, and the role of renewables has never been so important as an alternative sustainable source of energy to reach remote areas.

In fact, Africa is set for a renewable energy boom. According to a Rystad Energy analysis, the continent's installed capacity of renewable energy is forecast to reach 22.3GW in 2021. This is largely being driven by solar and wind projects in Egypt, Algeria, Tunisia and Ethiopia. However, hydropower is equally important and remains the main renewable resource in Africa, with more than 37GW of installed capacity, explained Andy Eaton, head of sales, Africa, Gilkes.

"Although this is dominated by larger hydro," he said "There is a place for small hydropower, which is quicker to build and has much less environmental impact due to no large dams and displacement of people. Unfortunately, the emphasis for renewable development is still focused on solar and wind, with small hydropower still being seen as the poor relation. More education is needed to support the benefits of small hydro, which is the most sustainable and renewable energy source. Small hydropower as part of a mini grid system is a sustainable energy solution for the future, supporting the development and power needs of rural communities in Africa."

The longevity of hydro equipment and sustainability of small hydro schemes has been proven by the equipment that Gilkes has installed in the field and has been operating for nearly 100 years. So how can the small hydro industry attract more investment?

Firstly, Eaton recommends that private investors looking for small hydro schemes need to collaborate with developers to work out how to structure finance packages.

"To encourage more investment into small hydro projects, there needs to be realistic/sustainable feed-in tariffs," Eaton continued. "Strict timescales should be given when awarding PPAs to complete projects, and if they are not adhered to, the projects should be made available to other potential developers. Tender programmes also need looking at as they seem to slow the market down.

"Where previously we were seeing development by public owned companies, we are now seeing an increase in development from the private sector, as well as different developments in energy recovery, mini grids and rural electrification. I see the small hydro market growing in Africa due to the growing population and therefore a need for power. From 2020 to 2050, most of the world's population growth is predicted to take place in Africa."

> "There is a place for small hydropower, which has much less environmental impact and is much quicker to build."
>
> **ANDY EATON, HEAD OF SALES, AFRICA, GILKES**

Tea estates

Historically in Africa, Gilkes' older small hydro turbines were installed as far back as the 1900s for small businesses, such as tea estates and farms in South Africa and Kenya. In the 1970s, it saw a surprising demand for small hydro energy recovery systems on water treatment plants in these countries.

Following a recent Unilever visit, Gilkes discovered that the tea estate schemes that were built decades ago only met the power demand at the time and were not built to their full capacity. “Therefore, there is now potential to upgrade these plants and develop them to their full power potential as the power demand has grown,” he said.

Kenya’s state-run power utility, Kengen, has already approached Gilkes to advise on the refurbishment of a hydro turbine, which was installed in 1930. A project engineer was tasked with designing and modernising a new runner assembly and control system to bring the turbine into the 21st century after it had been hit by lightning. The voltage was reduced from 3.3kV to 415v and resulted in a cost saving for the switchgear and generator.

Another successful project nearing completion is the Mulosa River project in southern Malawi. Gilkes supplied a 3.0MW Turgo turbine and associated equipment for the powerhouse. The Turgo turbine, designed by Gilkes in 1919, is well suited to many sites in Africa with its ability to handle silty water, and is a very robust machine that needs little maintenance, with an easy operator interface.

Eaton said, “We have successfully completed the installation of [the Mulosa River project], and are on track with the commissioning. This is a great achievement as the customer put us under a tight deadline with the order being placed at the start of the pandemic.

“Our commitment from our onsite engineers is nothing short of amazing, having agreed to travel during a pandemic with the knowledge of having to self-isolate on their return. We worked closely with our customer to give our engineers confidence that all Covid precautions were in place on site and at their accommodation. This commitment from our team shows a desire to overcome the most challenging of obstacles.”

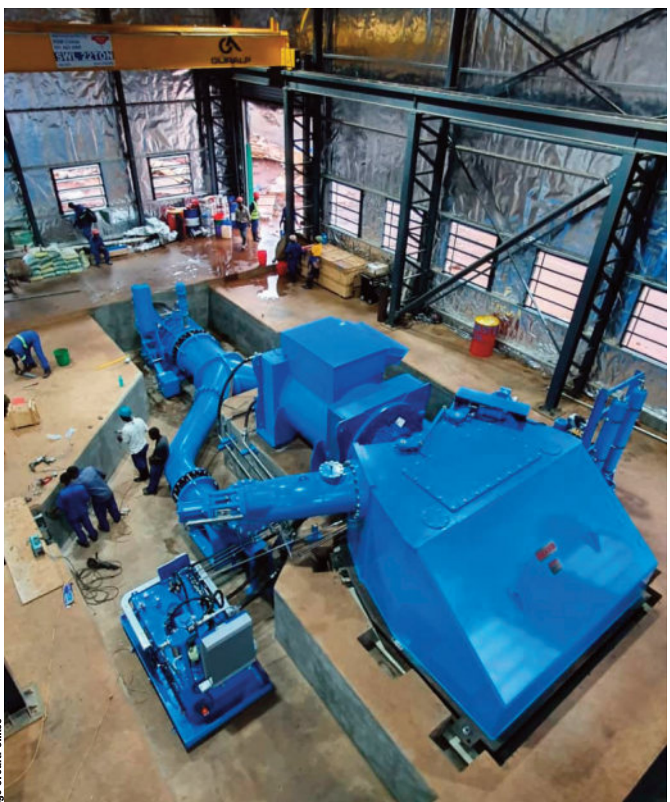


Image Credit: Gilkes

A 3.0MW Turgo turbine has been installed in the Mulosa River project.

> “Gilkes has decades of experience integrating hydropower into rural mini grids and islanded applications to provide power to remote communities.”
>
> **ANDY EATON, HEAD OF SALES, AFRICA, GILKES**

Navigating the pandemic

Gilkes has robustly navigated its way through the pandemic, with other industries being more severely impacted by the pandemic than the small hydro industry.

“At Gilkes we continue to see strong levels of enquiries for new small hydro development, particularly in Africa, where we are seeing no slow down despite the pandemic,” Eaton continued. “We are fortunate to have a good pipeline of customers and enquiries, which we continue to work with.

“As suppliers to critical infrastructure we have continued to work throughout the pandemic, meeting our customers’ expectations, with on time deliveries and uninterrupted site support. Our engineers have been able to support our customers remotely to resolve their onsite issues. While virtual events and online meetings help us stay engaged with our customers and keep up to date on the small hydro market and renewable energy sector in Africa, they cannot replace the face-to-face contact needed to build relationships, and we certainly look forward to getting back out to Africa in 2021.”

When asked what sets Gilkes apart from other similar companies, he said, “Customer relationship – we listen to the customer requirements and work in partnership with them to achieve the aims of the project. We have a long history in Africa but also a recent history. It is a place we enjoy working in, from myself visiting potential customers to our dedicated onsite engineers, who carry out the installation and commissioning. Over time, we have come to understand the unique aspects of working in Africa, often in very inaccessible locations. Gilkes has decades of experience integrating hydropower into rural mini grids and islanded applications to provide power to remote communities.”

And how does Gilkes offer peace of mind to customers?
Eaton replied, “Customers have peace of mind knowing that they have been working with a company that has been in business for more than 160 years, with a customer-focused attitude and plans to carry on supporting the small hydro industry for many, many years to come.

“Gilkes offers a full ‘concept to commissioning’ service with professional advice right from the start of the design process, as well as providing energy calculation and plant selection consultancy. We ensure consistency right the way through the project with a nominated project engineer working on the project from initial planning stages right through to onsite installation and commissioning. We also provide full training for the local site operators either at site or at our UK factory. Our equipment packages are specifically designed to minimise unscheduled downtime and our after-sales service is available throughout the life of each project. Our relationship with the customer does not finish once commissioning is completed, and we pride ourselves on supporting our customers wherever they are in the world, whether that be remotely or at site.

“Gilkes see Africa as one of their key markets, which has served us well for the last 100 years, and we are committed to seeing that partnership grow over the next 100 years.” ■

By Samantha Payne

Oil and gas opportunities are boundless for investors in the West African region

Investors and stakeholders have been invited to attend MSGBC Oil, Gas & Power 2021 to discover why the West African region has become one of the most exciting energy hotspots for the continent.

MSGBC Oil, Gas and Power 2021 has been announced for 26-27 October.

Image Credit: Adobe Stock

In recent years a steady stream of exploration and development projects have made it impossible for the oil and gas industry to not take notice of the West African region where the potential appears to be endless.

With strong economic ties to North America, the West African region has traditionally held a favoured position with their neighbours across the Atlantic and has a long legacy of welcoming American investments into the region, highlighted by the 2020 MoU signed between Senegal's national utility, Senelec, and national sovereign fund, FONSIS, for investments in health and power infrastructure, worth US$200mn. But certainly, owing to a succession of positive developments in the region, the global community has taken notice and moved in, to grab their own share of the profits to be made in the area.

Senegal has gained the most attention with the Sangomar field development; a US$4.2bn investment with production potential of up to 100,000bpd, as well as the Great Tortue Ahmeyim development led by BP and Kosmos, which is estimated to hold 100mn boe in natural gas reserves.

In 2019, a massive discovery was made by Kosmos in Mauritania so that the BirAllah area is now estimated to hold 50 trillion cubic feet of natural gas; in the same year Springfield Group made a significant offshore discovery in Ghanian waters with estimates of some 1.2bnbl of crude oil available. In Gambia's blocks A1, A2, A4 and A5 there is an estimated near 5bnbl of oil to be recovered; and new entries and drilling programs in Guinea Bissau, Guinea Conakry and elsewhere in the region show that opportunities are boundless.

"There is no better time to be in West Africa than now, and Senegal is at the heart of the opportunities. The projects are there, many investors have already succeeded, but viable projects across the value-chain still need FDI. The regional market is full of opportunity for the right investor, particularly those with a holistic view of the energy sector and a long-term eye on the energy transition," said Renée Montez-Avinir, managing director at Africa Oil & Power, Africa's dedicated energy investment platform.

> "There is no better time to be in West Africa than now."
>
> **RENÉE MONTEZ-AVINIR, MANAGING DIRECTOR AT AFRICA OIL & POWER**

MSGBC Oil, Gas and Power

To that end, MSGBC Oil, Gas and Power 2021 has been announced on 26-27 October as a platform for West Africa's oil, gas and power industries to showcase the region's investment appeal as one of the most exciting energy hotspots in Africa, with major hydrocarbons discoveries and vast renewable potential.

The event will be held in Dakar and is being organised by Africa Oil & Power under the auspices of the President of Senegal, His Excellency Macky Sall. It is held in partnership with the Ministry of Petroleum and Energy, COS Petrogaz, Petrosen and various US and Canadian Energy industry associations to gather all stakeholders and investors to promote the expansion of West Africa's energy sector and open a dialogue on energy transition.

"MSGBC Oil, Gas & Power 2021 will provide just the place for the right investors to discover deals, partners and clients that will not only benefit their companies, but the energy sector and the region's economy at large," commented Montez-Avinir. ■

Africa's gas markets poised for 'new era' of growth

A new report sees huge growth in gas production and usage across sub-Saharan Africa through to 2040, driving power generation and other key industries. Martin Clark reports.

Natural gas is set to become ever more prominent for Africa as the world shifts to cleaner fuel alternatives – and it is likely to boost the growth of local and regional energy markets, including driving up power generation.

These are among the key findings from a new report by the African Coalition for Trade & Investment in Natural Gas (ACTING).

Its inaugural report, *State of Play: African Gas*, identifies an increased localisation and regionalisation of liquefied natural gas (LNG) trade, encouraged by the African Continental Free Trade Area (AfCTFA) and more competitive gas prices. It also expects domestic gas monetisation to enter "a new era of growth" in West Africa and East Africa, supported by significant gas-to-power capacity addition.

New technology, incentives and favourable economics are opening doors to more projects.

"African gas is entering a true decade of diversification with small-scale LNG (Nigeria, South Africa), coal-bed methane (Botswana, South Africa) and helium (Tanzania, South Africa) developments taking shape," the report stated.

Upcoming LNG export projects have specific domestic gas allocations

Project	Capacity (mtpa)	DomGas Allocation (MMscfd)	Receiving Country
Greater Tortue Ahmeyim (GTA)	2.45	35	Senegal
Greater Tortue Ahmeyim (GTA)	2.45	35	Mauritania
Mozambique LNG	12.88	100	Mozambique
Coral Sul FLNG	3.4	0	Mozambique

Source: Hawilti research

Image Credit: www.actingas.org

In terms of financing, as development finance institutions (DFIs) shy away from fossil fuels, the basket of investors into Africa's gas infrastructure is also diversifying. It now includes local companies, mid-sized foreign operators, institutional and private equity investors.

It marks a significant step forward given that the African continent overall remains one of the lowest consumers of gas globally as of today. Yet these low gas penetration rates across sub-Saharan Africa contrast with the vast amount of reserves found onshore and offshore – from Senegal to Mozambique – and whose development could lift millions out of poverty and give the resources it needs to industrialise.

The ACTING report suggests that the growth of Africa's natural gas consumption and production is set to be one of the world's fastest until 2040 on the back of new LNG projects and strong policy support for natural gas consumption across industries, including transport and power.

"By 2025, sub-Saharan Africa will house four onshore LNG terminals and 3 FLNG (floating LNG) units, able to export 60 mtpa (million tons per annum) of LNG. Pending market conditions, an additional 74 mtpa of LNG export capacity could be sanctioned by 2030," the report said. Much of this activity has been made possible by huge gas discoveries in recent years off the shores of both East Africa and West Africa.

Mauritania, Senegal and Mozambique will all become LNG exporters, the report notes, while Ghana, Benin and South Africa are most likely to start importing LNG in the near future.

But it adds that the new gas price environment is making LNG exports less attractive, which may encourage localisation and regionalisation of LNG trade, including within Africa. This could unlock a vital source of clean energy for Africa's power sector.

ACTING expects to see a 55% growth in grid-connected gas-to-power generation by 2025 thanks to greenfield and brownfield projects and the conversion of coal and diesel power plants to gas in Senegal and South Africa.

West Africa is expected to become the most dynamic area in terms of lifting gas-to-power capacity addition over the next four years, through to 2025.

Across the region, new capacity additions could reach 750MW in Senegal, 643MW in Côte d'Ivoire, 450MW in Nigeria, 200MW in Ghana, 150MW in Benin and 65MW in Togo.

Significant gas-to-power capacity could also be coming on stream from the conversion of existing thermal power plants. ■

Significant additional gas-to-power capacity will be coming from the conversion of existing thermal power plants

Project	Owner/Operator	Capacity	Country	Status
Bel Air (C6)	Senelec	98.7 MW	Senegal	Awaiting domestic gas availability from the planned Senegal Gas Grid.
Cap des Biches (C4)	Senelec	30 MW	Senegal	Awaiting domestic gas availability from the planned Senegal Gas Grid.
Cap des Biches IPP	ContourGlobal	87.5 MW	Senegal	Awaiting domestic gas availability from the planned Senegal Gas Grid.
Tobene IPP	Azura Power	115 MW	Senegal	Awaiting domestic gas availability from the planned Senegal Gas Grid.
Malicounda	Matelec	120 MW	Senegal	Greenfield project under-construction and to be converted to gas once the Senegal Gas Grid is built and commissioned.
Ankerling (peak)	Eskom	1,327 MW	South Africa	Gas supply agreement expected in 2021 and conversion expected to be completed before the end of 2024..
Dedisa (peak)	Avon & Dedisa Peak Power (Engie-led)	335 MW	South Africa	Expected conversion once the Coega LNG terminal is commissioned (planned for 2024).
Gourikwa (peak)	Eskom	740 MW	South Africa	Planned conversion.
Avon (peak)	Avon & Dedisa Peak Power (Engie-led)	670 MW	South Africa	Planned conversion.

Source: Hawilti research

UPS ADDS TO SMOOTH OPERATIONS AT METRIC AUTOMOTIVE ENGINEERING

Ensuring quality customer service, even during power outages, forms part of Metric Automotive Engineering's sustainable business strategy. The company recently invested in an uninterruptible power system (UPS) at its technical facility in Germiston to ensure just this.

While the company has always had its own standby generators to provide power during load-shedding or utility outages, Metric Automotive Engineering operations director, Andrew Yorke, explained that this was still not ideal.

"The short delay between utility power failing and the generators kicking in could have negative effects on our workflow," said Yorke. "The brief stoppage of our sophisticated machines could lead to damage to major components, which are in the middle of a high-precision machining process."

Image Credit: Metric Automotive Engineering

Both uninterruptible power system (UPS) units are fed by a specialised solar inverter system.

He noted that this could not only damage components but invariably result in delays due to the unexpected rework required, which all involved additional costs. The new UPS system – which includes two separate UPS units – provides an effective solution to these challenges.

"Both UPS units are fed by a specialised solar inverter system, giving us a bridging system that allows our operations to continue unimpaired," he said.

ne UPS provides uninterrupted electricity supply to the critical machinery at Metric Automotive Engineering, powering the four crankshaft grinders, the seven reboring surfacing machines and the CNC lathes.

The other UPS supports the administrative side of the business, ensuring that there are no server outages. This facilitates smooth and continuous access to information and communication.

FTC SOLAR RELEASES VOYAGER+, SUPPORTING MODULES THAT ACHIEVE 500W OUTPUT

FTC Solar has announced the release of Voyager+, the next generation of its single-axis Voyager tracker, engineered to provide compatibility with new large-format solar modules now entering the marketplace.

The large modules entering the market are built to incorporate larger solar cells, which are the energy-producing heart of each solar panel. With these larger 182mm and 210mm cells, the modules can achieve power output exceeding 500W. Voyager+ supports these larger format modules and will be able to accommodate multiple module sizes from a variety of solar manufacturers.

"We are seeing an increasing level of interest around large-format modules and are pleased to introduce this new Voyager line to support our customers," said Tony Etnyre, FTC Solar's CEO. "As the industry transitions to larger modules, FTC Solar is ready to deliver tracking systems that are compatible with a variety of module sizes and configurations, while maintaining our two-in-portrait format and industry-leading installation speeds," he added.

FTC Solar is currently conducting tests at its research facility near Denver, Colorado, and will be evaluating the performance and structural requirements of a wide variety of large-format modules.

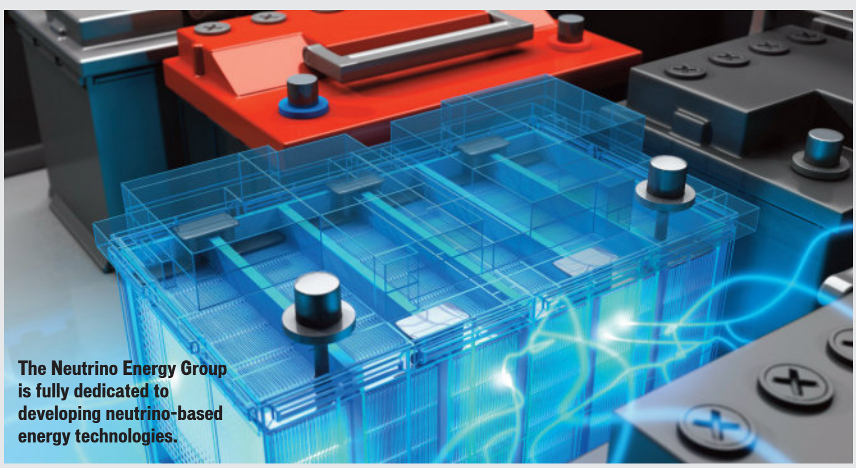
According to a Wood Mackenzie industry analysis, labour savings alone could reach up to 6%, and energy production per acre will increase, with production gains depending on the module size and technology.

Neutrinovoltaic energy and electromagnetic capacitors to foster clean energy transition

The Neutrino Energy Group continues to innovate new neutrino-based energy technologies that will take the pressure off of potentially problematic sustainable energy sources. At the same time, top energy scientists are proposing new methods for storing electricity in electromagnetic capacitors, which eliminate battery waste and last indefinitely.

Recently, a research engineer at UC Riverside's Marlan and Rosemary Bourns College of Engineering, Alex Khitun, proposed a new method of producing high-capacity electromagnetic capacitors. Like batteries, capacitors can store electrical energy, but current technological limitations prevent electromagnetic capacitors from storing large amounts of electricity. Overloading existing capacitors causes them to degrade, but Khitun says he has found the answer, believing that adding a compensatory inductive field to existing capacitor technology could eventually allow capacitors to store as much energy as gasoline. This magnetic field would prevent capacitors from breaking down over time, and it would also vastly improve the amount of energy that capacitors could discharge.

With batteries replaced by electromagnetic capacitors, the spectre of battery pollution will no longer haunt the renewable energy industry. With the development of practical neutrinovoltaic technologies, the world will become less reliant on inefficient and wasteful energy produced by fossil fuels. Since neutrinovoltaic devices constantly generate energy in practically every conceivable environment, it is not necessary to store neutrino-generated energy in either batteries or capacitors, but next-generation electromagnetic capacitor technologies will work hand-in-hand with neutrinovoltaic devices to make the future of renewable energy truly clean.



The Neutrino Energy Group is fully dedicated to developing neutrino-based energy technologies.

Image Credit: Neutrino Energy

DRY-TYPE TRANSFORMERS ENSURE SAFETY AT MOZAMBIQUE LNG CAMP

Dry-type transformers, supplied by specialist company Trafo Power Solutions, are ensuring the safe and reliable operation of substations in a construction camp at a large liquified natural gas (LNG) project in northern Mozambique.

According to David Claassen, managing director of Trafo Power Solutions, 18 dry-type transformers were included in modular substations built in South Africa, and shipped to site recently. The company is in a strategic partnership with leading Italian transformer manufacturer TMC Transformers, and is competing at the highest level with other global OEMs.

"These substations are for the project's first construction camp of about 9,500 contractors," Claassen said. "Our transformers have been specially designed for the high ambient temperatures in northern Mozambique."

Ranging from 500 kVA to 1250 kVA, the temperature of these units will rise to a maximum of 80°C when under full load. With Class-H insulation on both the medium voltage (MV) and low voltage (LV) windings, they will withstand a temperature of 180°C. This is considerably more than the potential 40°C ambient temperature in the tropics, plus the 80°C temperature rise. The transformers are designed for levels of humidity up to 95%.

Image Credit: Trafo Power Solutions

1250kVA cast resin transformer installed inside modular substation.

He highlighted that the safety advantages of dry-type transformers mean they are suitable for operation in high-temperature environments. As they do not contain oil – which is the usual coolant in conventional transformers – they pose no fire, explosion or environmental hazard.

"A transformer containing oil would present a significant risk in a construction camp accommodating thousands of people in close proximity," he said. "The safety level of dry-type transformers also means that they can be used in enclosed spaces like modular substations."

Rolls-Royce expands mtu product range with Kinolt UPS systems

The Rolls-Royce Power Systems division has expanded the portfolio of its product and solution brand mtu to include uninterruptible power supply (UPS) systems. From 1 February, the flywheel energy storage power supply systems have been marketed as mtu Kinetic PowerPacks. The manufacturer Kinolt, taken over in July 2020, has been incorporated in Rolls-Royce Power Systems and is now the competence centre for uninterruptible power supplies.

For especially critical installations such as data centres, hospitals or industrial plants with sensitive production processes, the mtu Kinetic PowerPacks provide continually high energy quality and eliminate parasitic effects on the power grid. In the event of failure of the (usually public) power grid, the systems reliably safeguard the energy supply without loss of power or voltage in the microgrid.

mtu Kinetic PowerPacks combine the function of an uninterruptible power supply with an emergency power supply using flywheel energy storage and modern diesel engines. The technology offers high quality supply to the consumer grid combined with compact dimensions.

"As compact UPS systems, the mtu Kinetic PowerPacks represent a substantial addition to our range of practice-proven emergency power gensets. We can now offer our customers complete energy security solutions for their safety-critical installations that are extremely economical in terms of both acquisition and operating costs. The sales and service organisation will gradually be incorporated in the Rolls-Royce Power Systems service organisation. As a result, customers will have access to an even closer network," said Andreas Görtz, vice-president Power Generation at Rolls-Royce Power Systems.

Image Credit: Rolls-Royce Power Systems

Uninterruptible power supply with the mtu Kinetic PowerPack: it secures the power supply of safety-critical facilities, such as data centres, hospitals or sensitive industrial processes.

FIRM LOCAL BASE SETS UP ZEST WEG FOR AFRICA GROWTH

Establishing a strong local manufacturing base in South Africa has been integral to Zest WEG's success over the past decade, building the economy and providing an important springboard into Africa.

This process has aligned closely with the strategic approach of Brazil-based parent organisation WEG, which prioritises its member companies' capability, efficiency and innovation on a local level, according to Juliano Vargas, CEO of Zest WEG.

"This has required considerable investment in our local production capacity and skills base," said Vargas. "The outcome to date has been very successful, with Zest WEG developing its local structure and supply chain, while working to world class standards and supported by WEG innovation."

As an example, he noted that Zest WEG today achieves almost 90% local content capability for its transformers and more than 70% local content capability for other products such as E-houses and panels. These products form part of the company's wide range of solutions, including electric motors, drives, switchgear, energy generation, electrical infrastructure, and generator sets, with different levels of localisation.

This locally developed supply chain delivers various benefits to customers, said Vargas. These include short lead times, as there is little reliance on Europe, China or the USA for parts and components. "The impacts to our market are considerable, and we have more predictability and control of our supply chain," he added.

EBRD supports new dry port development in Ramadan City, Egypt

The European Bank for Reconstruction and Development (EBRD) is supporting the construction of a dry port and logistics centre in 10th of Ramadan City, Egypt, with a one million euro contribution to project preparation and procurement. The city was founded in the 1970s in close vicinity to the capital Cairo and is one of the most industrialised municipalities in the country.


Image Credit: Adobe Stock

The new port is expected to improve the efficiency of Egypt's transport infrastructure.

Egypt needs urgent investment in its infrastructure capacity to alleviate the pressure on existing ports, shipment points and trade centres. New facilities are required to reduce congestion, allow for better distribution of goods and let trade flow freely.

A key element in this chain is dry ports, inland intermodal terminals directly connected by road or rail to a seaport, operating as centres for the shipment of sea cargo to inland destinations.

The new dry port is expected to improve the efficiency of Egypt's transport infrastructure by reducing congestion at seaports and creating the conditions for accelerated customs processes and procedures. Facilitating trade will contribute to an increase in the competitiveness of local producers, which will help accelerate sustainable economic growth and create employment opportunities.

The project is part of Egypt's transport master plan, which recommends the development of an intermodal corridor extending from Alexandria on the Mediterranean coast to El Sokhna on the Red Sea coast, and calls for the development of nine dry port and logistics centres throughout the country under public-private partnership (PPP) structures.

Heike Harmgart, EBRD managing director for the southern and eastern Mediterranean region, said, "We are very proud to support the preparation of sustainable infrastructure in Egypt to be implemented and financed by the private sector. The dry port in 10th of Ramadan City is the second in Egypt to receive funds from the bank's Infrastructure Project Preparation Facility, which demonstrates our commitment to this approach."

MB CRUSHER HELPS FIRMS TO RECYCLE ASPHALT

The construction industry faces many challenges, such as high costs of hauling and disposal of removed pavement material, along with the subsequent cost of new aggregate.

MB Crusher is helping companies to recycle old asphalt and create new revenue streams. The company's mobile crushers can be mounted on any brand and size of heavy machinery on a job site, transforming the equipment into a powerful crusher. Any asphalt can be crushed down to the required size to be ready for immediate reuse, such as base material for a new road.

An experienced foreman reported by MB Crusher said, "Asphalt, bitumen and an old sidewalk or city square pavement has become a valuable resource. We can reuse the material right there and then, or sell it. "With MB's mobile crushers, we increased our job's margins and have new business opportunities."

AFRICA CONSTRUCTION SECTOR SET TO GROW

The Africa construction market is expected to register a CAGR of 6.4% from 2019-2024, according to Reportlinker's '*Africa Construction Market - Growth, Trends, and Forecast (2020 - 2025)*' report.

Availability of natural resources, huge investment opportunities in energy and infrastructure, cheap labour and a fast-growing consumer market are among the growth factors cited by the report, along with a beneficial business environment.

As a region, East Africa has the largest number of recorded projects with 139. North Africa accounts for the largest share of projects in terms of value at 31.5% (US$148.3bn). Egypt is the single country having the most projects with 46 (9.5%) as well as the most projects by value at US$79.2bn (17%), edging out South Africa and Nigeria respectively.

In terms of sectors, the transport sector has 186 projects, accounting for 22.7% of total project value, followed by power and energy projects, with a share of 24.4%.

According to the report, South Africa's construction industry continues to face tough times amid lower government investment in infrastructure, low business confidence and lower foreign direct investment.

On the other hand, Kenya's construction industry has a high growth rate potential; the Kenya Vision 2030 goal for the construction sector is going to increase its contribution to GDP by at least 10% per annum and propel Kenya towards becoming Africa's industrial hub. Construction activity in Tunisia is also set to grow, supported by investments in public infrastructure, residential and renewable energy projects. Government flagship programmes such as Tunisia 2020, the five-year development plan, and Renewable Energy Action Plan 2030 are expected to drive the industry's growth over the forecast period.

BRIEFS

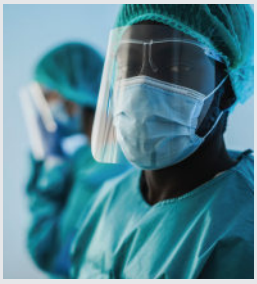


Image Credit: Adobe Stock

Sudan continues to experience public health emergencies.

Funding for PHEOC in Juba

The African Development Bank is financing the construction of the second phase of the Public Health Emergency Operations Center (PHEOC) in Juba, South Sudan. The project, comprising infrastructure, furniture and equipment, will strengthen preparedness and response capacities for public health emergencies. South Sudan continues to experience recurrent epidemic-prone diseases, and other public health and humanitarian emergencies.


Image Credit: Adobe Stock

The new body will provide a united voice for South Africa's construction industry.

New construction body formed

Twenty-nine of South Africa's professional, contractor, supplier and other bodies within the construction industry have united to form a single organisation, the Construction Alliance South Africa (CASA), according to media reports.

It is expected that CASA will lead the post-Covid recovery of the construction industry, while also tackling other long-standing industry issues such as the accelerated transformation of the sector and protection from unfair competition.

Construction predictions in 2021

Peter Kasanda, managing partner of Clyde & Co's Dar es Salaam office in Tanzania and Alon Meyerov, partner in Johannesburg, South Africa, talk about tough decisions ahead for the African construction sector.

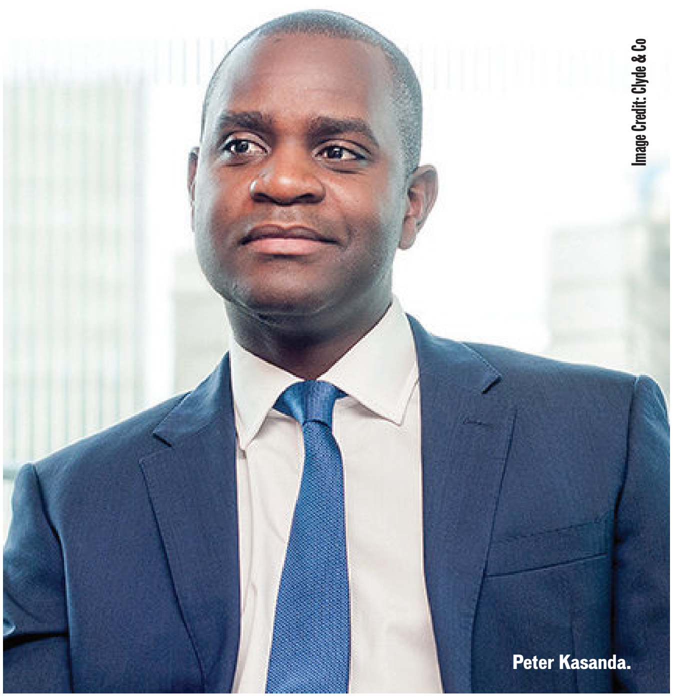
Reliance on force majeure presents a significant issue for projects in 2021 – *Peter Kasanda*

Over the past year, construction industry stakeholders in East Africa have been grappling with three related challenges, which have been the subject of disputes and have stymied the industry's response to the Covid-19 pandemic.

With decrees in a number of countries outlining restrictions, including curfews and limitations on movement, a question has arisen over where the 'decree' sits within the law – it's not equivalent to a formal change in law, so it could be open to interpretation. Similarly, does the pandemic equate to a force majeure event? While the case for force majeure can be considered strong in February 2020, does this interpretation wash in September 2021 when restrictions are very much foreseeable? And with the closure of borders in other countries and accordingly, issues with importing the skilled foreign labour needed at the outset of a project, does a resulting stoppage in projects constitute a breach of contract? These challenges will still be the subject of disputes in 2021.

But where do we go from here? It's clear that economies will not survive another year of slow progress in construction projects, and the World Bank has indicated there is an urgent need for infrastructure in the region. As a result, we expect restrictions will be lifted in an effort to get sites opening up again – with a glut of projects set in motion to make up for lost time.

However, progress over the longer term will be determined ultimately by the pace of vaccination on a global scale. While the developing world could be waiting a significant time for vaccinations – as late as the last quarter of 2022 in some cases –the vaccination programmes underway in the developed world could unlock the skilled foreign expertise necessary to drive projects forward.



Peter Kasanda.

Alon Meyerov.

South Africa faces environmental choices over coal plants – *Alon Meyerov*

At the start of this year, a survey from the University of Oxford revealed that fossil fuels are set to remain the dominant source of electricity across 54 African countries over the next decade, with around 2,500 power plants planned, enough to double electricity production by 2030.

The survey indicates that just 9.6% will come from renewable sources.

At first glance, this survey paints a pessimistic picture of environmental prospects for the continent in the coming years. But when embarking on a deeper consideration of countries and projects on their own merits, we can see a definite shift towards the environmental agenda coming to the fore.

In South Africa, the Kusile Power Station in Witbank, Mpumalanga is leading the charge. It is one of the two largest dry-cooled coal power plants in the world (the other also in South Africa), and is the first power station in Africa to install wet-flue desulphurisation technology, which is used to extract oxides of sulphur from exhaust flue gases generated by the burning of coal. This technology is an atmospheric emission abatement technology that conforms with current international practice.

In November 2020, we saw the construction of the Thabametsi South African coal plant project grind to a halt as the country's high court set aside its approval due to concerns over environmental impact, and investors are set to pull out.

It is clear that, to the extent that South Africa continues to rely on coal as part of the energy mix, the next twelve months will see key decisions made about current and future plants. It will come down to a simple choice: whether to incorporate the technology to existing power stations to reduce the environmental impact of burning fossil fuels, or to incorporate the technology into the construction of new coal-fired power stations, following the Kusile example. ■

Caterpillar's Next Generation Large Excavators

Construction giant Caterpillar launches three new Next Generation large excavators for Africa, Middle East and Eurasia markets – the strongest excavator line ever delivered in its history.

Image Credit: Caterpillar

CAT 345 GC

Up to 30% lower maintenance costs | Up to 25% more fuel efficient | Telematics Technology

Caterpillar's Next Generation excavator 345 GC can increase fuel efficiency up to 25% and lower operating costs up to 30% compared to the 349D2. In addition, the new model incorporates significant engineering advances for safety and operator convenience.

The 345 GC's overall efficiency is further enhanced with telematics technology, ProductLink, which can remotely monitor machine health, location, hours, and fuel consumption on demand through the VisionLink online interface.

Case study

Koos Masombuka, owner of Nomaphasi Investment Holdings, a plant hire and logistics firm, has been using the 345 GC excavator 24/7 for the last six months at a mining site in South Africa after purchasing it from Cat dealer Barloworld.

He praised the excavator high productivity and 'best-in-class' operator comfort, adding, "I have never encountered any problem regarding the machine, with the 3.2m^3 size bucket enabling me to reach the tonnage that the mine requires, from 5,000 to 66,000 tons per shift. I decided to purchase this excavator from Barloworld Equipment due to its reliability and efficiency. I also chose Cat Customer Value Agreements from Barloworld because they assist me with everything I need and provide us with good savings. I would recommend this 345 GC for all working environments."

345 GC Specifications

Engine: Cat C9.3B
Net Power: (ISO 9249) 258kW
Operating weight: 42,200kg
Bucket capacity, std: 2.41m^3
Hydraulic relief pressure: 35,000 kPa
Hydraulic flow: 630 L/min
Max. dig depth*: 7,200mm
**R6.9m boom with R2.9m stick*

CAT 374

Loads up to 33 x 40 ton trucks per hour | Up to 2X more structural durability | Up to 20% lower maintenance costs

The Next Generation Cat 374 excavator offers contractors high production, two times more structural durability, and up to 20% less maintenance costs than the industry leader it replaces, the 374F.

It has a new hydrostatic swing circuit, which enables regenerating swing brake energy and independent management of cylinder oil flow. "What that means for owners and operators is higher operating efficiency and smoother, more predictable performance when multitasking with the excavator," explained Brian Abbott, worldwide product manager for Caterpillar large excavators.

Booms, sticks, and frames are twice as strong as those on the previous model – aimed at giving owners reliable performance for the life of the machine.

Image Credit: Caterpillar

Booms have increased top and bottom plate thickness; sticks have increased side, bottom, and bracket plate thickness; and frames have increased base frame and counterweight mounting plate thickness.

Cat Payload helps operators increase loading efficiency with on-the-go weighing; real-time payload estimates can be calculated without swinging to help prevent overloading and underloading trucks. The monitor's USB port lets operators download results from a single shift all the way up to 30 days of work with no need for an internet connection or VisionLink subscription

Lift Assist is a new safety feature that helps prevent the excavator from tipping. 2D E-Fence prevents the excavator from moving outside operator-defined points.

374 specifications

Engine: Cat C15
Engine power (ISO 14396): 362kW (485hp)
Operating weight: 71,700kg (158, 200lb)
Max. dig depth*: 8,570mm (28'1")
Max. reach at ground level*: 13,160mm (43'2")
Max. loading height*: 8,430mm (27'8")
**7.8m (25' 7") boom, 3.6m (11'10") stick, SD 3.3 m³ (4.32 yd³) bucket.*

CAT 395

Up to 10% more productive | Up to 2X more structural durability | Up to 20% less maintenance costs

The Next Generation Cat 395 excavator offers contractors up to 10% more production, two times more structural durability, and up to 20% less maintenance costs than the industry leader it replaces, the 390F.

"We increased swing torque and stick force by 10%," said Brian Abbott, worldwide product manager for Caterpillar large excavators. "These increases enable contractors to use larger buckets for much greater productivity."

It has a new dedicated hydrostatic swing circuit – a feature found only on larger Cat mining shovels like the 6015B. Like the 374, there are three modes of operation available: Power, Smart, and ECO.

"The 395 has the industry's most comprehensive offering of factory-installed technology in its size class," said Abbott. "Our goal is taking an owner's operating efficiency to a much higher level." The technologies include Cat Payload, Cat Grade with 2D with upgrades to 3D available, Lift Assist and Auto Hammer Stop that prevents wear and tear on the attachment and machine.

Image Credit: Caterpillar

395 specifications

Engine: Cat C18
Engine power (ISO 14396): 405kW (543hp)
Operating weight: 94,100kg (207,400lb)
Max. dig depth*: 7,190mm (23'7")
Max. reach at ground level*: 12,260mm (40'3")
Max. loading height*: 7,960mm (26'1")
**Mass 7.25m (23'9") boom, 2.92m (9'7") stick, SDV 6.5 m³ (8.5 yd³) bucket, 650mm (26") shoes*

FOR MORE INFORMATION VISIT
https://www.africanreview.com/construction-a-mining/machinery

The multiple applications of pumps and valves

The pumps and valves market across Africa is a vital sector driven by several key industries, each of which rely heavily on pump and valve infrastructure in many aspects of their operations. Tim Guest reports.

KSB pumps being manufactured in Germany.

Image Credit: KSB

Whether agriculture or oil, gas or petrochemicals, civil engineering, construction or food processing, mining, utilities or water management, anywhere there is an industry involved or requiring the conveyance of liquids, gases and slurries there will be pumps and valves. In the food and drinks industry, for example, specialised peristaltic pumps, instrumentation and valves are involved in full process integrity, recipe compliance and product reliability. From baby foods, tinned soups, milk, wines and more, liquid-based foodstuffs could not be produced in quantity without highly complex infrastructure involving specialist pumps and valves.

In construction, where, despite differing regional economic struggles and factors, there is a current Pan-African focus on infrastructure development and major construction projects – roads, railways, dams, urban developments – the pumps and valves industry has many untapped opportunities in new regions across the continent. Take South Africa; while it may be facing slow, steady economic declines impacting construction, caused by factors, such as reduced government infrastructure spending, a depressed economy, less foreign investment due to ratings downgrades, rising material costs, as well as Covid-19 (with job losses and fewer construction projects), there are still major projects underway and a steady need for pump and valve infrastructure.

Latest predictions for average growth in the South Africa construction sector over the next few years offer a more positive outlook, good news for pumps and valves, too. There are a range of products in South Africa, including large dewatering pumps for construction and mining, as well as smaller systems for sectors, like pharmaceuticals and food processing. The Valve and Actuator Manufacturers Cluster of South Africa (VAMCOSA) has indicated the country's valve sector to be worth around US$300mn, annually, and its sister organisation, the South Africa Pump Systems Development Association (SAPSDA), has previously estimated the value of the South Africa pumps sector at around US$70mn, annually. According to VAMCOSA, there is a heavy reliance by the South Africa pumps and valves industry on state-owned enterprises such as utilities, with water and power generation accounting for over 40% of the valve market. Any delays in state-sponsored infrastructure projects, therefore, impact the pump and valve sector. Also, recent years have seen a downturn in the foundry sector, crucial in pump and valve production with castings accounting for the largest part of manufacture costs of both products.

> "The pumps and valves industry has many untapped opportunities in new regions across the continent."

Pump and valve players

One of the world's leading suppliers of pumps, valves and related services is Germany's KSB, active in South Africa since the early 1900s, with KSB Pumps SA established in 1959. Based in Johannesburg, with nine South Africa sales branches, another four in sub-Saharan Africa and a nationwide service network, KSB SA serves sectors including: building and construction, energy, mining, and wastewater and water management. In the latter, its energy-efficient, low-maintenance pumps are used in wastewater treatment plants at all cleaning stages, for preliminary screening in intake pumping stations, as well as handling primary and floating sludge, and recirculating activated sludge in biological wastewater treatment. Designed with non-clogging impellers, wastewater pumps from the KSB Amarex KRT and Sewatec series can handle even high-solid-content fluids.

In construction and building, the company has a range of products that includes single components for drainage, water supply and all heating and air-conditioning circuits. Its Calio, maintenance-free, high-efficiency flanged or screw-ended, glandless pump is suited to building applications for heating, ventilation, air-conditioning, cooling and circulation systems. For water extraction, KSB recently introduced its new UPA S 200 submersible borehole pump for water supply, irrigation and groundwater management, as well as pressure boosting applications with a wear-resistant design and optimum flow rates between 40 and 160 cu/m.

Continuing with the irrigation theme, improved irrigation of otherwise arid regions to promote crop growth is one of the ways NGOs, governments and international organisations like the UN are striving to make Africa's future more food secure. Planting, fertilising, irrigating and harvesting crops requires large volumes of water to be pumped, treated, and moved and without a vast infrastructure of pumps, valves, pipes and related equipment, achieving that food-security will not be possible.

Crossing the boundaries of both agriculture and renewables, Kenyan company, SunCulture, is delivering solar-powered water pumps to small-hold farmers in Ethiopia, Ivory Coast, Senegal, Togo, Uganda and Zambia for irrigation, supported by funding from investors, including Energy Access Ventures and Electricité de France. The pumps, powered by a 300W solar panel, include a 440Wh battery storage system that can also power light bulbs, telephones, as well as the submersible water pump. Solar-powered water pumping systems are a sustainable solution for lifting water from boreholes for irrigation, eliminating high maintenance and investment costs for farmers, as well as reducing electrical failure risks. As a result, small-hold profits increase and a food-secure future comes a step closer with each solar-powered pump delivered.

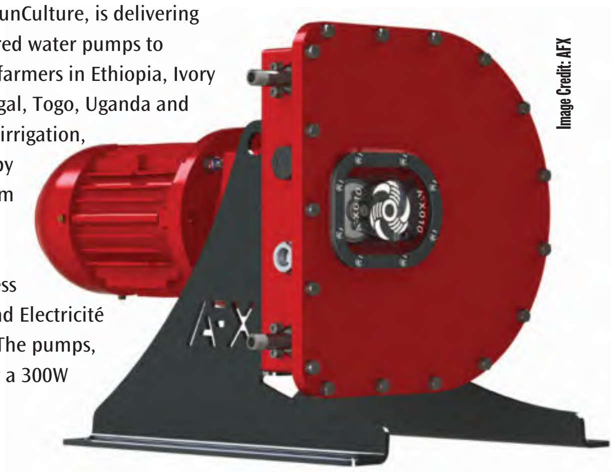


Image Credit: AFX

An Afromix peristaltic pump.

> "The South Africa Pump Systems Development Association (SAPSDA), has previously estimated the value of the South Africa pumps sector at around US$70mn, annually."

Another key player in southern Africa is AFX Holdings' Afromix whose expertise spans agriculture, mining, food and beverage, chemical, water treatment, pharmaceutical and others. Its peristaltic pumps, for example, are regularly used in the food & beverage industry where they have a wide range of applications, including within the wine segment; just about anywhere a pump is required in a winery, a peristaltic pump is suitable as they can pass significant amounts of suspended solids, in the form of grape pulp, skins and seeds without grinding or breaking any seeds, and without increasing turbidity.

Furthermore, Swiss company, Sulzer, which has been active in Africa for a number of year, offers a wide range of products and services for the construction market, including dewatering pumps for removal of water and sludge from construction and tunnel sites. In addition, its axial flow pumps are just some of its pumps in use in Egypt with the El-Nasr Company for Intermediate Chemicals (NCIC), the country's biggest fertiliser company. Its Al-Fayoum complex, includes a phosphoric acid plant using the Sulzer pumps under harsh, corrosive conditions. ■


Image Credit: SunCulture

With the new SunCulture RainMaker2 Kubwa solar-powered pumps, small-hold farmers can pump water from their own boreholes, saving time and money and enabling the farming of a wider range of crops.

LIEBHERR'S LITIU TILT UNIT FOR WHEELED AND CRAWLER EXCAVATORS

With the LiTiU tilt unit, Liebherr presents an innovative attachment, which extends the swing angle of various attachments. Fixed attachments can reach swing angles of up to 2 x 75°, thanks to the LiTiU unit. In addition, hydraulic attachments, such as sorter grabs, swivel-mounted ditch cleaning buckets and tilt buckets can be combined with the LiTiU unit for an even bigger swing angle. LiTiU is compatible with attachments from other manufacturers and the new unit is available in different versions and sizes.

The new Liebherr LiTiU attachment is designed for applications where the swing angle represents an extension of the working area. It allows more applications of wheeled and crawler excavators. Apart from classic excavation works, the machines can be used for levelling and modelling banks, levelling and ditch cleaning, as well as demolition and recycling, without the need to reposition the machine or change the attachment.

As a direct mounting, the LiTiU 18 unit is mounted directly to the stick end of the wheeled or crawler excavator and makes swing angles of up to 2 x 75° possible.

Image Credit: Liebherr

Innovative technology complements tried-and-tested technology

LiTiU is an attachment developed by Liebherr with a protected swivel motor. It is available as a direct mounting or sandwich attachment in two different sizes. As a direct mounting, LiTiU 12 or LiTiU 18 is mounted directly to the stick end of the wheeled or crawler excavator. The connection between the bottom of the LiTiU unit and the attachment is realised either with the Liebherr quick coupling system SWA 33 / SWA 48 or the fully automatic Liebherr quick coupling system SWA 33 LIKUFIX / SWA 48 LIKUFIX.

Depending on the quick coupling system, swing angles of up to 2 x 75° are possible in this version. With the optional extended hydraulic circuit, the LiTiU 18 unit can also be activated directly.

CONCOR FAST-TRACKS COVID-19 MODULES FOR JUBILEE HOSPITAL IN SA

Concor has successfully completed a fast-track Covid-19 facility at Jubilee Hospital in South Africa using innovative building technology.

The turnkey project in Hammanskraal north of Pretoria handed over ten modular units to the Gauteng Department of Health, adding another 300 beds to care for Covid-19 patients. The facility comprises five 25-bed intensive care unit modules - complete with a two-bed isolation ward - and five 35-bed high care modules.

According to Rui Santos, senior contracts director at Concor, the company already started completing modules from mid-October (excluding commissioning). The modular approach was chosen so that units could be completed and put into operation while others were still being constructed, if the need arose.

"This has certainly been a demanding project in terms of its timeframe," Santos said. "However, by applying the appropriate technologies alongside our extensive experience, we met deadlines while complying with national building standards and without compromising safety or quality."

The brief from the implementing agent - the Gauteng Department of Infrastructure Development - called for alternative construction materials to reduce the timeframe of the project. After considering different options, Concor decided on Futurecon's light frame steel with prefabricated panels. The project schedule was maintained from the earthworks stage despite encountering poor ground conditions, groundwater, existing buildings and large boulders in some areas of the site.

New Age Line: F.lll Ferrari adds heavy cranes

F.lli Ferrari has added a 60tm family to its NEW AGE Line to further strengthen its position in large size truck-mounted cranes improving the full product portfolio, which now spans from 1 to 165tm.

The 60tm family comprises two models, each with two jib options – the J1206 light jib for lifting horizontally, and the J2006 heavy jib for lifting vertically:

- 9601C – Standard Lifting Control System
- 9661C – Proportional Lifting Control System - lifting capacity 10% greater than 9601C

These strong, light and compact cranes have the best lifting capacity currently available in this segment of the market. The rewards for the customer are higher payloads and faster operation.

Standard features include: double linkage, negative second boom angle, up to eight extensions, endless slewing, multifunction radio remote control. Arange of accessories and options available in the 60tm family allow to optimise the cranes configuration, according to all applications.

NEW AGE innovations, which improve operator efficiency and safety, while increasing productivity include:

- Auto Levelling System, which automatically keeps the truck frame in a horizontal position, enabling best crane performance.
- Operator Auto Detection, which automatically activates the operator's closest stabiliser, avoiding the need for operator contact.
- Front Stabiliser control, which allows load in the front area, avoiding overload of the truck frame.

All F.lli Ferrari cranes are designed in accordance with EN12999 and are ISO 9001:2008 Quality Management and ISO 14001:2004 Environmental Management certified.

Image Credit: F.lli Ferrari

MAGNI EXTENDS THE FIXED FRAME TELEHANDLERS RANGE

Innovative lifting solutions distributor, Kranlyft Group, has announced that Magni Telescopic Handlers are extending its fixed frame telehandlers range.

The first two models to go into production are the 24m/5,500kg TH 5,5.24 and 19m/6,000kg TH 620. The TH 5,5.24 is one of three 5.5 tonne models with the TH 5,5.15 having a lift height of 15m and the TH 5,5.19 having a 19m lift height. They will be available in two versions with the full specification 75kw model or lower specification unit with 55kw power.

The TH 5,5.24 has a five section boom with a maximum lift height of 23.9m at which it can handle up to 1,500kg, while it also offers an impressive forward reach of 19.1m. The unit has an overall width of just under 2.5m, while being just under seven metres long with a ground clearance of 420mm. Total overall weight is a hefty 17 tonnes and maximum travel speed 40kph.

Image Credit: Magni

The TH range new fixed boom telehandlers from Magni.

The TH 620 has a four section boom and maximum lift height of 19.2m, at which it can handle two tonnes, while the maximum capacity is six tonnes. Maximum forward reach is 14.4m. Weighing 14.4 tonnes, the overall width is 2.55m with an overall length of 6.52m.

The new models have very low stowed booms for a lower centre of gravity, which also provides an unusual look when it is elevated. The cab has the same high specification as that fitted to Magni's 360 degree models and includes a seven inch intuitive touch screen, cab pressurisation and filtration, air conditioning and a super deluxe seat. Power comes from a Stage V Deutz engine, with 4F or Stage III engines available for regions where emission standards are less rigid.

Demag's new AC 80-4 all terrain crane

Demag already had an 80-tonne crane at one point: The AC 80-2. "The worldwide success that this model had, showed that there's significant interest in a crane with this kind of lifting capacity. In fact, a large number of customers kept confirming this time and time again. That's why we decided to add the AC 80-4 to our product portfolio in the segment of up to 100 tonnes," explained Michael Klein, the product marketing manager in charge.

Accordingly, the Demag AC 80-4 features a main boom that is 60m long and that, with some configurations, makes it possible to have the longest main boom reach in the class of up to 120 tonnes. There is more, in the class of up to 100 tonnes, no other crane comes close to its lifting capacity with a fully extended boom up to a radius of 30m. The AC 80 4 can lift an impressive 5.4 tonnes at a radius of 14m.

It also raises the bar with its main boom extended to 50m: At a radius of 10m, it can lift 9.7 tonnes, which is 2.2 tonnes more than the next most powerful competitor. In terms of line pull, the Demag AC 80-4 is also ahead of the pack with 6.8 tonnes.

If the main boom length of 60m is not enough, the reach can be expanded with a 6.5m main boom extension that can be offset by 25° and 50°. Its capacity is a generous 23.8 tonnes, meaning that it can be used to lift heavy loads over obstacles. Since the extension can be folded and carried on the main boom, it can be ready for use.

There is a 1.5m runner with a capacity of 26.6 tonnes for the Demag AC 80-4. Accordingly, the AC 80-4 is recommended for indoor projects. The main boom can be lowered up to 3° below its horizontal position so that work at height can be eliminated and the jibs can be installed quickly.

Image Credit: Demag

The new Demag crane aims high when it comes to power and performance.

KOMATSU AND PROTERRA TO DEVELOP ALL-ELECTRIC CONSTRUCTION EQUIPMENT

Proterra, a leading innovator in commercial vehicle electrification technology, and Komatsu, a global leader in construction equipment, have announced an agreement to leverage Proterra's battery technology for the development of Komatsu's first battery-electric middle class hydraulic excavator. The collaboration represents Proterra's entry into the off-road vehicle market and the company's first Proterra powered battery-electric construction equipment.

Komatsu will utilise Proterra's high-performance battery systems for the development of a proof-of-concept electric excavator in 2021 before expected commercial production in 2023 to 2024. The Proterra battery system powering the electric excavator will feature high energy density and fast charging technology.

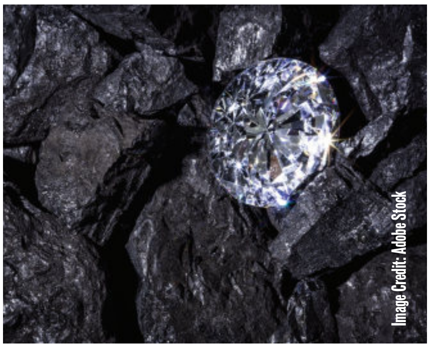
Engineered and manufactured in the USA, Proterra battery packs leverage industry-leading energy density and a customisable design to fit within a variety of vehicles. The packaging flexibility of Proterra's battery platform will enable the optimal placement of the batteries within the middle class excavator and replace the need for a normal counterweight used to balance the excavator's hydraulic arm movements. In addition to reducing noise and air pollution, the design of Proterra battery packs offer suitable application for an off-road and construction site.

"I am excited about the collaboration with Proterra, by which Komatsu will drive the electrification of construction equipment," said Seiichi Fuchita, president, Development Division, Komatsu Ltd.

Gemcorp and ENDIAMA to develop diamond project in Angola

Trade and investment group Gemcorp and ENDIAMA Mining, LDA, a subsidiary of Angola's ENDIAMA EP, have entered into a joint venture agreement to develop the Mulepe diamond deposit in Lunda Norte, Angola.

The Mulepe site, which contains significant kimberlite and alluvial deposits, represents a major strategic project that aims to provide important employment opportunities and unlock value in a remote region of the country.



The project is expected to process approximately three million tons of kimberlite per annum.

Gemcorp signed the agreement in December 2020, with ENDIAMA. To ensure rapid development of the project, a pilot mining programme will be set up during 2021 to enable initial operations and diamond exports. The pilot operations will enable the joint venture partners to improve their understanding of the mining operations, the type and quality of diamonds present within the concession, the capabilities of local third-party service providers and value generation potential through diamond sales.

Following the pilot programme, the partners will then proceed with the development and expansion of operations to fully realise the potential of the hard-rock kimberlite deposits at Mulepe. At full production, the project is expected to process approximately three million tons of kimberlite per annum with a total capital investment estimated at more than US$150mn.

In the pilot stage, Gemcorp will be building a team of experienced professionals and expects to employ approximately 140 workers, the majority coming from the local community.

Atanas Bostandjiev, CEO, Gemcorp, said, "Angola is a country full of potential, and this partnership is yet another example of our belief in Angola's economic future."

Ganga Júnior, president of ENDIAMA, added, "It is a project that will certainly contribute to the development of Angola, representing a strong sign of the opening of the sector to foreign direct investment."

OSINO ANNOUNCES DRILLING UPDATE AT TWIN HILLS CENTRAL GOLD PROJECT

Osino Resources Corp has announced an update on the resource drilling at Osino's Twin Hills Central (THC) gold project and the newly-discovered Clouds mineralisation on strike to the east.

The ongoing resource drilling at THC has also returned additional excellent assay results which continue to define and improve the resource potential at Twin Hills.

The Twin Hills project is located in north-central Namibia, where Osino holds a dominant 7,000sq km land position. The large-scale, sedimentary-hosted and structurally controlled Twin Hills gold system was discovered by Osino in 2019.

Dave Underwood, Osino's vice-president exploration, said, "The resource drill-out at THC is on schedule for the targeted maiden resource release at the end of Q1 2021. Assay results continue to indicate excellent continuity down dip and along strike with higher grades focused around fold hinges."

TOMRA DEVELOPS DIAMOND MICROSITE

TOMRA Sorting Mining has opened access to comprehensive technical information from its new diamond microsite.

TOMRA's approach in developing its diamond microsite is in line with the company's holistic approach to supporting its customers.

By opening easy access to technical information, it enables diamond producers to understand the possibilities offered by its recovery solutions, how they would fit within their operations, and how they would be adding value.

"We want to allow our potential clients and end-users better access to all of our technical information so that they can understand our solutions and best implement them," stated Ryan Szabo, sales and project manager diamonds at TOMRA Mining.

The microsite's homepage opens with a clear statement of TOMRA's promise to diamond producers – 100% detection in the specified range, irrespective of luminescence profile or coating, and a guaranteed diamond recovery greater than 99%.

Scrolling down, viewers can see at a glance the stages of the process where TOMRA sorters can add value: concentration with its XRT sorters and pre-concentration with its colour and near infrared (NIR) solutions – and they will discover that a solution for final recovery will soon be available. This will be an industry first: XRT recovery technology down to the size of a 2mm rough diamond, which will deliver concentration factors up to one million with a reduced number of concentration stages.

In the applications section of the microsite, a flowsheet shows where the different TOMRA machines fit in the recovery process and how they add value. Further detail is provided in animations of process flow diagrams in Kimberlite, alluvial batch fed and alluvial continuous feed applications.

BRIEFS

Gold Fields included in 2021 Bloomberg GEI

Gold Fields aims to build a diverse and inclusive workforce.

Gold Fields has announced that it is one of 380 companies globally included in the 2021 Bloomberg Gender-Equality Index (GEI).

The company achieved an average GEI score of 69%, above the 66% average of other companies included in the index.

"Gender and diversity have become increasingly important to Gold Fields," said Rosh Bardien, Gold Fields executive vice-president: people and organisational effectiveness.

SA mining production up by 0.1% in December

The top positive contributors were manganese ore and diamonds.

The mining production in South Africa increased by 0.1% year-on-year in December 2020, according to Statistics South Africa.

The top positive contributors were manganese ore (32.5%), diamonds (51.4%) and coal (5.7%). Platinum-group metals (PGMs) (-19.4%) were the largest negative contributor. Mining production was 10.7% lower than in 2019 in the full year. Additionally, the 10.7% decrease in yearly mining production followed a decrease of 0.5% in 2019.

Vivo Energy shares innovative power generation story at African Mining Indaba


Image Credit: Vivo Energy

Robex Resources' Nampala gold mine in Mali, with a hybrid fuel and solar energy solution, will be the pioneer project to spur further uptake of such projects in Africa.

Vivo Energy returned to Mining Indaba in 2021 with a success story around power generation for mines on the continent.

Vivo Energy, which sells and distributes Shell and Engen branded fuels and lubricants in Africa, believes it will be able to transform how energy is supplied to mines across the continent. The company announced in October last year that it had reached an agreement to supply Canadian mining company Robex Resources' Nampala gold mine, in Mali, with a hybrid fuel and solar energy solution for a period of five to 15 years.

Vivo Energy will use this pioneer project to spur further uptake of such projects in Africa to help mining operations reduce their costs and carbon dioxide emissions.

Alistair Jessop, head of power Vivo Energy said, "We are innovating in the renewable energy sector, bringing exciting commercial solutions to our customers. Vivo Energy plans to build on balance sheet hybrid solar solutions, engineered to the mines' requirements. The Mali project saves the mine US$4/MWh and will displace more than 60,000 tonnes of CO_2 over the next 10 years."

Jessop added, "Vivo Energy will expedite the provision of energy solutions, while minimising the impact on the mines' balance sheet and at the same time reducing the mines' cost of production and carbon footprint. Vivo Energy's experience in working with mines over many years is reflected in its innovative competitive power purchase agreement, aimed at meeting the mines' needs and timescales, allowing the mines to focus on their core business."

"I think 2020 was a year of real challenge for all of us. Nothing comes close to what we faced last year. What makes Vivo Energy different for its customers is the resilience we showed in 2020. That was a testament to our flat organisational structure. We were able to react quicker than most and put those decisions into action on the ground," said Alex Caldwell, head of mining for Vivo Energy.

WEBA CHUTE SYSTEMS BRINGS LONG-TERM VALUE

With the cumulative technical experience from 5,000 custom-designed chutes installed around the world, Weba Chute Systems delivers long-term value and quick payback times, according to Mark Baller, managing director of Weba Chute Systems.

He says most of his company's chutes can deliver a full return on investment within 18 months. However, the real value for the customer is in reduced operating costs and no disruption to operations.

"In our experience, many mines pay a high price when they opt for the lowest capital outlay and settle for a standard, off-the-shelf chute," said Baller. "Any initial cost they save quickly disappears when there is a blockage or spillage that demands a stoppage."

There are also often higher maintenance costs to consider, and the potential health hazards related to excessive noise and dust at the transfer point.

DRILLING AUTOMATION FOR AFRICA'S QUARRIES

Globally, the quarrying sector is embracing a trend in the automation of surface drill rigs; operations in sub-Saharan Africa are not expected to be left behind.

Vanessa Hardy, business line manager surface drills at Sandvik Mining and Rock Solutions, says she looks forward to growing interest especially in Southern Africa, with many quarry customers already owning automation-ready Sandvik drill rigs.

"The move towards autonomous drilling will be increasingly difficult to resist, especially as more users see the benefits in terms of productivity and cost-saving," says Hardy.

She highlights that Sandvik Mining and Rock Solutions offers a high level of flexibility, allowing customers to select the level of automation that best suits their operation.

"Where the customer still wants an operator in the cab, for instance, there are various one-touch buttons to improve performance and accuracy," she says. "These functions include the rig being able to level itself before operation, to automatically bring the drill up into a drilling position, and to auto-collar the drill."

The on-board technology also allows the operator to set, store and recall operating 'recipes' for different drilling applications. These recipes, which apply a predefined combination of rotations, pressures and other variables, can be automatically implemented at the push of a button.

"We have made safety, efficiency and productivity the main focus areas of our iSeries range of intelligent drill rigs, and these all help customers reduce operating costs," she says. "Our automation technologies have also opened doors for remote working; this may involve an operator standing on the bench while watching the rig, or working from a control room far from site."

For more information visit www.sandvik.com

BRIEFS

Moving freight from road to river transportation


Image Credit: Liebherr

River transportation of Liebherr-Mining Equipment Colmar SAS machines.

Liebherr-Mining Equipment Colmar has decided to experiment using river barges instead of trucks for its pre-haulage to Belgian seaports that join mine sites around the world, including Africa.
In 18 months of the experiment, the company shipped 148 machines /1,600 packages or 27,000 tonnes spread over 60 barges. This represents an environmental saving of 800,000 km on the road and 868,000 tonnes of CO_2. The eco-strategy has opened up a new path for the Liebherr Group.

Kleemann upgrades screens with large feed capacity


Image Credit: Kleeman

The MOBISCREEN MS 1202 and MS 1203.

Kleemann has released two mobile classifying screens with a feed capacity of up to 750 t/h in order to guarantee effective screening of large volumes. The MOBISCREEN MS 1202 and MS 1203 are available with two or three screen decks and have screening surface areas of 12sq m in the upper and middle deck and 11sq m in the lower deck, thus, making hourly outputs of up to 750 tons possible. The screens can be combined with the crushing plants from the Kleemann EVO series, as well as the PRO series.

President Cyril Ramaphosa officially opens Mining Indaba 2021

South Africa President Cyril Ramaphosa officially opened the 27th Investing in African Mining Indaba, held virtually for the first time due to the coronavirus pandemic. Samantha Payne reports.

Image Credit: Mining Indaba

The South Africa President, Cyril Ramaphosa, told delegates at Mining Indaba Virtual 2021 of the grave disruption caused by the pandemic to the South African economy and mining and energy sectors.

But he said South Africa mining had shown tremendous resilience and ability to come back, with mining companies showing a "strong presence" on the Johannesburg Stock Exchange in 2020.

He said, "Mining production has had an impressive recovery following the safe return of mining activities from the start of the coronavirus alert level 4. According to Statistics South Africa, the mining and quarrying industry was among the biggest contributors to growth in the third quarter of 2020. Higher production was mainly due to increased activity in the platinum group metals, iron ore, manganese, gold and diamonds.

"The ability of mining to weather the storm relatively well is also due to the positive working relations between the government and the mining industry. This is something that we should continue to build on. We should adapt to the realities of Covid-19, provide greater policy certainty, attract higher levels of investment and protect livelihoods at the same time.

"Sustainable mining is key to accelerated industrialisation, innovation, competition, and creating employment, to ensure that we increase the contribution of both mining and energy to meeting our developmental aspirations.

"We have taken significant steps to solve policy and regulatory issues that investors have identified and previously raised with us as constraints to greater investment."

He stressed that in South Africa, it was their aspiration that the recovery from Covid-19 would further the cause for a more inclusive economy.

"The mining sector should strive for greater sustainability, competitiveness as well as transformation. Mining companies should foster an inclusive approach to all aspects of mining; from ownership, participation in management, and also in procurement. There should be greater inclusion of women, women-owned businesses in all these areas," he continued.

"Mining companies should strive to incorporate and actively implement an environmental, social and governance standard in all aspects of their business decisions and operations. The social and labour plans are critical to ensuring mining communities benefit from mining activities in their areas so that no one is left behind.

"Industry must step up their efforts to provide employment, business and training opportunities to people in the communities in which mining companies operate.

> "The mining sector should strive for greater sustainability, competitiveness as well as transformation."
>
> **CYRIL RAMAPHOSA**

"All these elements are included in the mining charter. It is important that our commitment to transformation extends beyond compliance, but is understood as creating shared value and prosperity for the people of South Africa."

Alongside the country's transformation imperatives, he continues to drive policy reform in the mining sector.

Ramaphosa continued, "We want to promote greater exploration and beneficiation in minerals and upstream petroleum activities, especially developing our domestic and regional gas market.

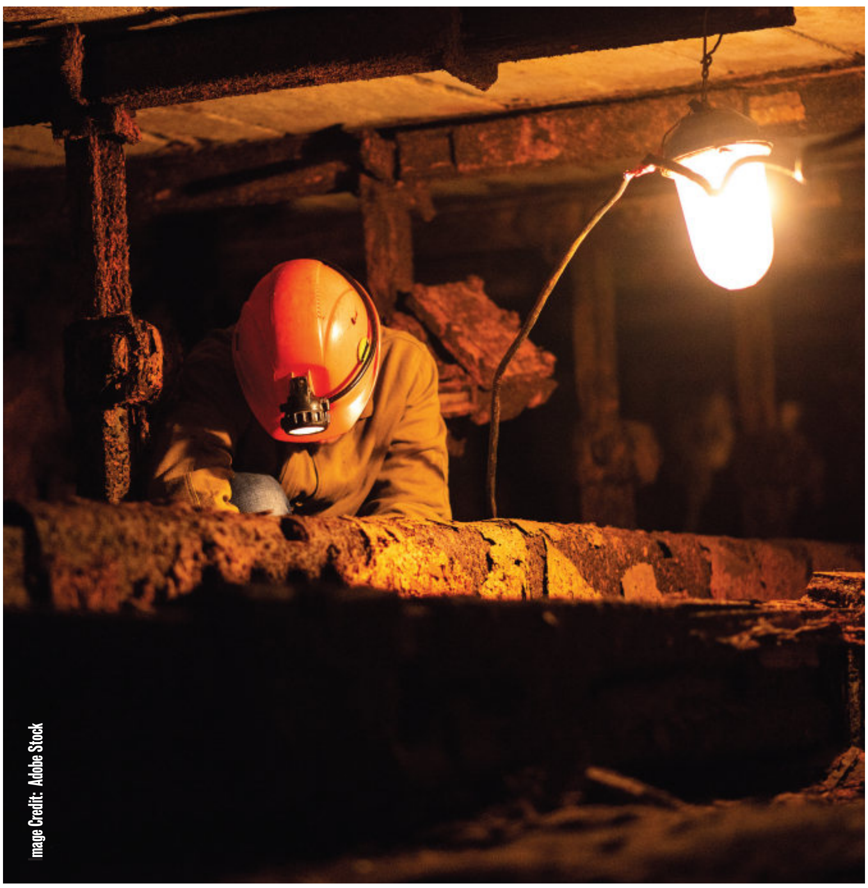
"To grow existing mining activity, we are working with industry to formalise small-scale and artisanal mining, revitalise sterile mines, and also discover new minerals, especially those that are critical for the economy of the future.

"Reliable and affordable energy supply are the lifeblood of mining and a catalyst to economic growth and development. We have witnessed the adverse impact of the high cost of unreliable energy supply on the mining sector in South Africa, that is why we are intensely engaged in the implementation of our Integrated Resource Plan. Through this plan, we are working to broaden our energy mix, enable energy generation for own use and reform and strengthen the capacity of the state power utility, Eskom. We are calling on stakeholders in both government and the private sector to work with us in providing energy that increases production in all sectors of the economy, all the while promoting job creation, growth and opportunities."

He paid tribute to the mining and energy sectors for adhering to public health protocols to protect the health and lives of workers throughout the pandemic, however he warned the challenges were far from over, and urged people to continue observing public health practices, such as hand washing and wearing masks, and ensuring workers had access to personal protective equipment in the workplace.

"As we embark on a Covid vaccination programme, that is unprecedented in its scale and reach, we must work together to ensure that workers who need the vaccine, receive it. I'm immensely encouraged by the positive sentiment from the mining industry, as expressed by the Minerals Council, towards the vaccine roll-out. Mining companies are well placed to support the vaccine programme, given their experience in managing tuberculosis and HIV amongst their employees. We must continue to ensure that the health and safety of mine workers remains a priority. But this must also apply to the mine workers' families. Mining leaders must confront and take decisive action to help the industry reduce fatalities, injuries and occupational diseases. They need to empower employees through training." ■

> "Industry must step up their efforts to provide employment, business and training opportunities to people."
>
> **CYRIL RAMAPHOSA**



mage Credit: Adobe Stock

Rebuilding the mining industry in Botswana

His Excellency, Mokgweetsi Masisi, President of Botswana, has acknowledged that 2020 was a very challenging year for the mining sector in Botswana. Robert Daniels reports.

Image Credit: Mining Indaba

Speaking at Mining Indaba 2021, President of Botswana, Mokgweetsi Masisi, outlined his government's intention to rebuild the mining industry and prioritise expansion into other resources besides diamonds.

He said, "This conference is significant as it is being held in the midst of the Covid-19 pandemic, which has destroyed the world economy. The diamond industry is one of the key sectors that has been severely affected with serious consequences for diamond producing countries like Botswana. Logistic challenges and other issues meant that in some instances the markets for minerals like diamonds were shut down almost completely, resulting in great losses for the industry and others in the value chain. This has diminished revenue in diamond dependent nations such as Botswana and has resulted in a drop in funding for mineral prospecting and development projects."

Botswana mining is dominated by its diamond production, and in an effort to rejuvenate this sector, Masisi outlined the policies his government had undertaken.

He said, "We have started to expand diamond processing beyond cutting and polishing, by introducing alternative and additional diamond supply avenues. This will provide impetus for secondary rough trading and polished trading and other diamond support services. I am happy to invite investors to come and exploit diamond opportunities."

However, Masisi noted that having an economy so dependent on one commodity means potential problems with market fluctuations. He noted that it was imperative to urgently expand the revenue base of other minerals, such as copper, nickel, silver, coal, gold, and others.

"The development of our wider mineral sector is in full steam, as evidenced by our exploration and mining licences to private companies. The advent of electrical cars has boosted the demand for battery metals and rare earth metals, which are necessary components for a wide range of applications especially high tech products, such as telephones and computer hard drives. My government is undertaking an assessment on several complexes to map and identify mineral occurrences to promote mineral prospecting in Botswana and subsequent mining of these minerals," Masisi noted.

Botswana has large coal reservoirs, estimated at 212 billion tons, which so far have remained largely unexploited. To change this, Masisi commented, "We have developed a coal road map with eight potential options to increase the contribution of this resource to our economy. These options are classified based on the overall effectiveness with coal exports, power exports and domestic power supply being highly prioritised. This roadmap also promotes sustainable coal mining through the use of clean technologies as we seek to mitigate the effects of climate change."

"In an effort to develop routes to seaborne markets, my government is working in close collaboration with our neighbours to put in place the necessary infrastructure to facilitate the export of coal."

Masisi concluded, "I would like to invite all of you to consider Botswana for your future destination of choice, and encourage global mining to continue working together, especially during this difficult period, to ensure mutually beneficial outcomes for all stakeholders and all players in the industry." ■

> "We have started to expand diamond processing beyond cutting and polishing."
>
> **MOKGWEETSI MASISI**

His Excellency Julius Maada, President of Sierra Leone, provided a keynote address to demonstrate the "boundless" opportunities available in the Sierra Leone mining sector and welcomed investors to seize this chance.

"The opportunities for international investment are boundless. Our country is richly endowed with mineral resources, such as iron ore, gold, diamonds (four of the largest stones ever discovered were mined in Sierra Leone), bauxite, chromite, ilmenite and more. The presence of these deposits represents a major opportunity for potential investors and the country to derive optimal benefits from extracting, processing and exporting these minerals.

"Although export volumes and values for major minerals have dipped as a result of Covid-19, the current outlook for the mineral market is good. There is a number of large-scale mining companies that are on track to commence large scale mining operations in 2021 and the number of small-scale mining licences granted increased significantly, from three in 2018 to 24 by the end of 2020."

The challenges and potential of 4IR for African mining

Clive Govender, CEO and founder of CGC Consulting and ADAPT Digital Solutions said the Fourth Industrial Revolution (4IR) is critical to reigniting the South African economy in the wake of the pandemic, and ensuring job creation. Robert Daniels reports.

CEO of CGC consulting Clive Govender made up a panel of experts at Mining Indaba 2021, discussing the benefits of the Fourth Industrial Revolution (41R) and its acceleration due to the coronavirus pandemic and what this means for mining workers across South Africa and the continent.

41R will play a vital role in creating 11 million jobs and reducing unemployment to 6% by 2030.

He said, "There are opportunities now, and building a digital platform that includes SMEs will allow them to see these opportunities across the entire industry as a whole. The biggest challenge when we talk to SMEs from mining communities is they feel they don't have the opportunities as they don't have transparency. Digital platforms and the new way of working could solve a lot of these problems for SMEs and communities."

Reflecting on his experiences, Alfred Baku, executive vice-president of Gold Fields, added, "As a mining company we had to ensure operations continued, we had to develop business resilience plans, and for this the supply chain was crucial. We had to maintain strategic inventory levels of regions. What we did was build a strategic alliance with local suppliers and source some suppliers from different locations such as India. With new technology we were able to track our supply chain activities and also ensure there was reduced disruption because of restrictions on shipments."

Sabine Dall'Omo, CEO of Siemens Southern and Eastern Africa, believed that the pandemic had definitely sped up the industry's transition to tech and digitalisation that, all the panellists agreed, had been lagging behind other sectors such as agriculture and energy.

> "We were able to service customers in South Africa as well as those in countries like Zambia and Ghana because we were able to log in remotely."
>
> **SABINE DALL'OMO, CEO OF SIEMENS SOUTHERN AND EASTERN AFRICA**

Dall'Omo said, "Over the last eleven months, specifically after the hard lockdown, we have seen digital technology applied everywhere. We were able to service customers in South Africa as well as those in countries like Zambia and Ghana because we were able to log in remotely. The ability to do these things was always possible before, but we never did them."

Turning to mining workers at ground level, the participants each acknowledged that there was fairly widespread concern that 4IR would lead to job losses and have real socio-economic implications for people and communities around mines that were moving to automation. However, they agreed that the switch to automation and digitalisation was not something to be feared, but to be embraced.

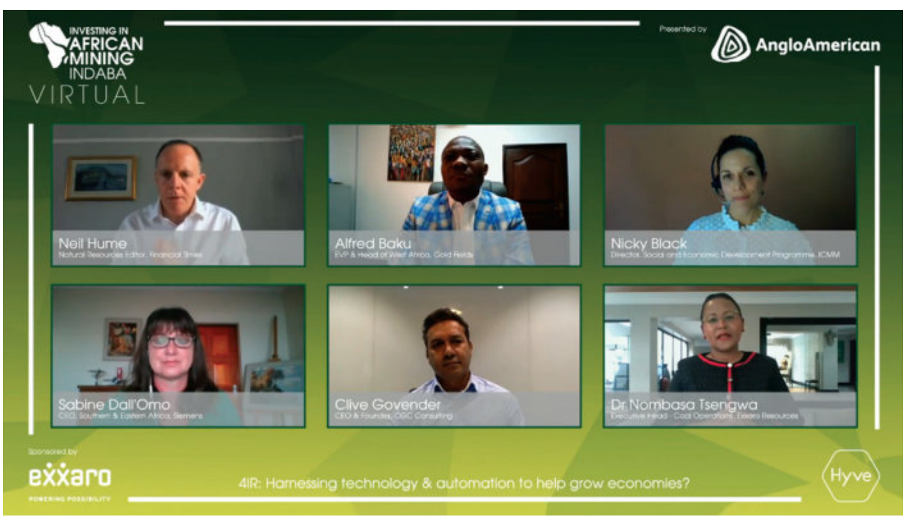
Nicky Black, director of social and economic development at ICMM, said, "The ICMM does not see this differently from the mining companies on the ground. Our members represent about a third of the global mining community. All of them have committed to a 15 year programme, called 'Skills for Our Common Future' which tries to engage directly with this challenge.

"Overwhelmingly, leaders in our sector expect the nature of the workforce to change in the near term; nearly 95% predict a transition to more skilled employees over the next five years. It is clear that unskilled workers are going to be the most impacted. But the bigger picture is that it is not just happening in mining but across all sectors. While there is significant disruption coming, the expectation from the World Economic Forum and others is that on balance more jobs will be created than lost. By 2025, they expect 85 million jobs to be displaced, but 95 million will emerge."

Echoing these comments, Nombasa Tsengwa, managing director of minerals at Exxaro Resources, said, "This is something that has got to be thought through very carefully, as it has a bearing on the welfare of the workforce and therefore you are bound to get resistance. You need to be very clear about how you are going to approach 4IR, starting with communicating the benefits of automation. Most mistakes made by many companies have been to re-imagine the workplace without including the labour. From our experience you have got to start with a very clear communication platform; why we are doing this and how is it going to benefit.

"Take your employees on this journey so they can go back to their members and say this is necessary and good for us. Some things get miscommunicated such as 'robots are coming to take your jobs', but if you map out your journey, there are a lot of skills on the mine you can upskill to white collar jobs."

Image Credit: Mining Indaba



The 41R session took place during Mining Indaba 2021.

Exponential growth of gold despite coronavirus pandemic

John Reade, chief market strategist, World Gold Council, talks about increased investor interest in gold.

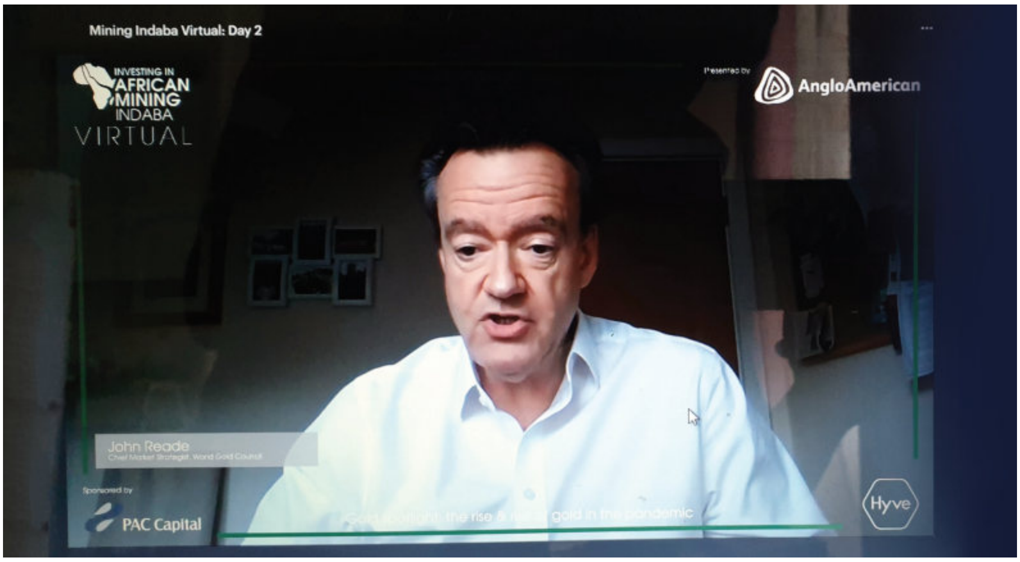


Image Credit: Mining Indaba

Garyn Rapson, partner of environmental law specialist, Webber Wentzel kick started a panel discussion on Day Two of Mining Indaba Virtual asking John Reade, chief market strategist from the World Gold Council about how 2020 was a record breaking year for gold demand and how Perseus Mining company held a successful year. Here is a brief overview of their exchanges:

Garyn Rapson: Could you unpack why investors were so interested in gold despite the global pandemic?

John Reade: Gold often gets bought, particularly when global economies start to slow, and when they slow rapidly, as we saw last year with the global pandemic. It has made sense for investors to have looked for gold to protect their portfolios. We had a great year for gold, it was up 25%, beating most other major asset classes that were driven by investor demand. The story wasn't only good. There were other aspects of gold which were quite weak. Central banks bought less gold last year than they had done in previous years. The jewellery sector was also hit very hard; a combination of higher prices, the economic slowdown that was caused by the coronavirus pandemic and the lockdowns that prevented people getting to the market saw jewellery demand fall sharply to the lowest that we have on record. But in the end it was investment buying which dominated, driving gold prices higher for much of the year. Although we saw a bit of a correction coming through in November and December, particularly with the fantastic news of the vaccines, which made people start to think about economic recovery, rather than the protection of portfolios. It was a fascinating year for gold. It really demonstrated why it should be in your portfolio, particularly against unexpected crises.

GR: Were there any surprises for you last year?

JR: There were quite a few surprises. The fact that we saw such a sharp slowdown in jewellery demand in the two biggest markets, India and China. These countries together constitute around 50% of the gold demand under normal circumstances. And yet the speed of the slowdown, particularly in China in the first quarter, then India in the second quarter, really did take me by surprise. What was good to see is that you did see sequential recovery in demand from both of these countries so that they ended up on a positive note in the fourth quarter. But it will take a while for jewellery demand to fully recover there. I'm expecting to see that sequential recovery continue through 2021.

The other big factor is the surge that we saw into exchange traded funds (ETF). Gold backed ETFs bought record quantities of gold last year, and that was partly the reason investors were returning to gold in general, but other factors played a role as well. Dislocation took place between the over the counter market, which is centred in London, and the Comex gold futures market in New York. Because of concerns about getting gold in the right form and moving it across to New York, these markets broke down in March; that was responsible for some of the buying that we saw with the ETFs as investors left the futures market.

> "It was investment buying which dominated, driving gold prices higher for the year."
>
> **JOHN READE**

GR: Perseus mining has just opened its third mine in Western Africa. Your most recent mine has achieved its early commission target. How was your company placed last year to take advantage of the global demand for gold?

Jeff Quartermaine, CEO of Perseus Mining: In 2015, we realised being a single asset company in a single jurisdiction was not good if you wanted to survive. So, we did something different from what other people were doing at the time and expanded our business. We built a second mine in 2016 and brought it online in 2018. Then our third mine in 2019 and brought it online in 2020. As the gold price was rising, we were in a position throughout 2020 to be selling into that rising market, which left us in a strong position at the end of the year." ■

TRANSFORMING LOGISTICS OPERATIONS OF THE AFRICAN MINING INDUSTRY

In the past, the mining industry has been behind in adopting new and innovative logistics techniques to help facilitate its growth. Only recently has technology played a critical role, leading to improved efficiency of processes, and reduction of costs, as stated by the Journal of Mining, Metallurgy & Exploration in their recent paper on the topic.

However, an increased use of rotorcraft and even unmanned aerial vehicles (UAVs) offer the industry solutions to some longstanding logistical challenges. These aircraft can be used to carry heavy loads and assist in the transportation of vital equipment to and from remote and difficult-to-access locations. These important developments are being supported by local authorities with, for instance, the South African Civil Aviation Authority recently approving the use of a remotely piloted aerial system for the mining sector to help revolutionise the industry.

Meanwhile, the capabilities of rotorcraft in assisting with complex and heavy logistical challenges have been exemplified in the work of Rocky Mountain Rotors, an American helicopter chartering company founded by Mark Taylor.

It has been using a Bell 505 helicopter to assist in transportation operations and rescue missions in the Rocky Mountains. With a payload of up to 2,000lb (907kg) at an altitude range of 22,500ft density altitude (6,096m) thanks to its Arrius 2R engine, the Bell 505 has proven a worthy companion against heavier and more expensive competition.

Mark and his team have tested the durability of the 505 on numerous occasions. His first job was to transport almost eight tons of equipment across 6mi (9km) of dense forest at 7,700ft (2,347m). On another occasion, Mark used a 505 to transport over 750lb (340kg) of load up the mountains. The Bell 505 flew in at 9,200ft (2,904m) and performed a delicate set down of the cargo on the frozen Delta Lake at 9,016ft (2,748m).

Bell 505 helicopter carrying cargo.

The Bell 505's extreme towing capabilities, as well as its power to weight numbers mean that it can operate at a lower cost than other, larger aircrafts. This, in turn, provides a new alternative to the mining industry in Africa, which historically is heavily reliant on trucks to access the harshest of terrains.

Bell is actively collecting information for the future of mobility and aircrafts like the Bell 505 are perfectly suited to accommodate everything from VIP transportation to external cargo lift missions. This is because it is reliable, cost-effective, and safe to perform a wide variety of missions in efficient travel times.

Another transformative technology that could reshape the mining industry in Africa is the use of Unmanned Aerial Vehicles (UAVs) in operations. UAVs have been used traditionally in geological mapping missions, but never to carry significant payloads.

In an effort to save time and costs, UAVs such as Bell's Autonomous Pod Transport (APT) might just be the answer. The vehicle is capable of autonomous flight and taking off and landing vertically. It has demonstrated the ability to carry a payload of 110Ib (50kg), offering a solution for mining companies who are looking to transport goods away from mining sites.

Bell understands the need to modernise the mining industry and is developing tools to solve this. With the 505, it can offer customers an opportunity to hoist larger cargo to and from different locations, while with the APT, swifter and less costly aircraft for smaller payload. Both aircrafts open a new world of possibilities for logistical transportation. By efficiently moving goods from one location to another, they provide safe, cost and time efficient solutions for mining companies looking at alternative means of transportation.

Sameer Rehman, managing director of Africa and the Middle East, Bell, said, "With the Bell 505, we have an aircraft that has shown time and again that it can be trusted to operate in high-risk locations and with heavy payloads, providing a capable machine for logistics operators. With APT, Bell is set to re-define on-demand logistics support across a number of industries thanks to its autonomous flight capability and intuitive interface, the simplicity of the UAV's operation means that it can go further, faster and carry payloads at increased ranges all while saving time, cost and energy."

To find out more about the 505's cargo hook capabilities, the APT's capacity and the rest of Bell's existing product line up, visit www.bellflight.com/

HIGH FLEXIBILITY, LOWER COST WITH WEIR MINERALS AFRICA'S MOBILE PUMPHOUSE

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

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

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

Koorts highlights tha as a mine's process plant matures the tailings line grows with new tailings dams being created, often using Linatex hoses and Isogate valves. It is an advantage to be able to move the pumphouse, and to add pumps to the tailings line if the increased distance requires more pressure. It is an important contributor to reducing initial capex costs. The design of the mobile pumphouse sets a new standard for tailings management applications, providing the customer with the tools to reconfigure their pumping network.

Wirtgen 220 SMi 3.8 surface miner for high-performance chalk mining


Image Credit: Wirtgen

Successful performance tests were conducted at HeidelbergCement in Couvrot, France with the 220 SMi 3.8 surface miner from Wirtgen.

On behalf of the HeidelbergCement Group, Wirtgen conducted a performance test with the 220 SMi 3.8 surface miner at a chalk quarry in Couvrot. The goal was to increase production output compared to the current mining method using a crawler dozer, while simultaneously reducing operating costs.

During the demo, several tests were conducted to convince the customer that the smallest Wirtgen surface miner is a viable and more efficient alternative. To do so, the surface miner's cutting performance, turning time, and fuel consumption were recorded, among other parameters.

Validates high expectations

Up until now, the company has used a bulldozer to break up the chalk in Couvrot, before a scraper loads the material into the hopper (also known as the bowl) and transports it to a temporary storage facility. From there the chalk is transported to the adjacent cement factory, where it is immediately processed.

Since the pieces of rock mined by the dozer are relatively large, with a grain size of up to 80cm, this mining method causes several problems at once. On the one hand, it creates an uneven surface that must first be levelled by the dozer so that the scrapers can be used to load the material in the first place – an additional, extremely time-consuming task. On the other hand, the coarse grain means that the scrapers require considerable energy and force to load the mined material. This primarily causes considerable traction issues for the scraper, which results, among other negative effects, in an extremely high-level of wear and tear to the machine's tyres. As a result, two to three dozers are currently required per shift to level the excavated area and push the scrapers. In addition to the customer's expected output of at least 500 cu/m per hour, the objective was to eliminate the aforementioned problems with the help of the surface miner.

The 220 SMi 3.8 surface miner is capable of selectively mining raw materials at cutting depths of up to 350mm and a uniaxial compressive strength of up to 35 MPa. Thanks to its 3.8m wide cutting drum designed specifically for soft-rock mining, the surface miner achieves maximum productivity at low operating costs, making the compact 220 SMi 3.8 perfect for use in small to large mining operations – a fact that it impressively demonstrated in France.

During the performance test in Couvrot, cutting zones with a length of 150m and 300m as well as a width of around 40m were first mined using the 3.8m wide cutting drum. The drum was then replaced with a 2.2m wide drum and tested for one more day.


Image Credit: Wirtgen

Wirtgen's powerful milling drums can produce significantly smaller grain sizes than, for example, drilling and blasting or, as shown here, using a dozer.

Proves its superiority under difficult conditions

According to the customer, the Couvrot region receives significantly more rainfall between October and April than in the summer months. Huge puddles make it difficult to mine the chalk and the moist material has a negative effect on further processing. These conditions were simulated at the beginning of the tests. The 220 SMi 3.8 had to perform a variety of cutting tasks in muddy and wet terrain. Needless to say, the machine also mastered this challenge without any loss in performance. All of Wirtgen's surface miner models feature adjustable


The 220 SMi 3.8 can easily handle difficult conditions - thanks to its adjustable longitudinal and cross slope, larger puddles are no problem for the machine.


Image Credit: Wirtgen

While the high-performance miner extracts the chalk non-stop at an extremely high speed, the scrapers push the material into their hoppers to transport it away.

longitudinal and cross slopes, which ensures that rainwater drains off and keeps the working surface dry.

Even when cutting on slopes with a gradient of up to 16%, the production output of the 220 SMi 3.8 remained high. The machine achieved a peak cutting performance of 1,400 cu/m per hour. This represents an outstanding result for the customer, since most of the quarry's mining areas are located on such steep slopes.

The fact that Wirtgen's surface miner can easily handle the average rock hardness of 20-30 MPa was clear even before the tests began. After all, it is designed for rock with a compressive strength of up to 35 MPa. But how would the machine perform under even harder rock conditions? Some areas of the quarry contain deposits of blue marl with a hardness of up to approximately 40 MPa. Another challenge for Wirtgen's miner that the 220 SMi 3.8 mastered with an advance rate of 5-10 m/min. ■

WIRTGEN SURFACE MINERS INCREASE PRODUCTION OUTPUT

In the final and probably most important test, the surface miner was used for an entire shift at the quarry. As part of a fleet with three scrapers and one dozer, the 220 SMi 3.8 cut at two cutting depths of 20cm and 30cm. Thanks to its powerful cutting drum and an engine output of 963 PS at a weight of 59,000kg, the miner was able to produce significantly smaller and more uniform grain sizes than the dozer. The advantage of this is that the material cut smaller is easier to load than the large pieces of rock, so the scraper and dozer need less power to load the scraper hopper. In addition, the milled material lies flat on the surface, which means it no longer needs to be levelled with the dozer, saving additional time and therefore, cutting costs. In addition, the surface miner produces level surfaces that make it easier to load the scraper and provide stable road surfaces for fast material transport. Thanks to the level haul roads, tire wear can also be reduced.

After completing the test, the quarry operator was more than satisfied with the results achieved by the 220 SMi 3.8. The surface miner far surpassed the target output rate of 500 cu/m per hour. In fact, at times the machine was able to extract almost three times the specified amount of chalk per hour. Due to its outstanding cutting performance and its production of fine grain sizes and flat surfaces, the operator no longer needs to use a dozer, which increases output and reduces costs at the quarry. In addition, the flat surfaces reduce traction problems and scraper tire wear. Since the chalk is pre-crushed by the 220 SMi 3.8 at the quarry, further costs resulting from the use of crushers can be saved during further processing at the cement factory. In other words, the smallest surface miner delivers what it promises: "maximum performance and cost-effectiveness."

Advertiser's Index

Clean mining gains foothold in Mozambique

The mining sector in Mozambique is in the midst of transformation, as it realigns with the clean energy transition by harnessing precious minerals required for the production of electric vehicles and lithium-ion batteries.

Image Credit: Africa Oil & Power Conference

Mozambique is well positioned with its resources to take advantage of the market demand for renewable and battery storage technologies.

In addition to sizeable gas reserves found offshore, Mozambique is home to commercially significant deposits of coal, gold, graphite, ilmenite, iron ore, titanium, copper, tantalum and bauxite, to name a few. While Covid-19 may have disrupted mining operations in terms of site closures and reduced export earnings, demand for precious minerals and metals has not faced the same fate as oil and gas. In fact, mining commodities have risen in the past nine months, due to demand for technology products (that rely on copper, nickel, graphite, manganese and lithium) and global green initiatives. To meet the surge in demand for clean energy technologies, the World Bank states that mineral production could increase by almost 500% by 2050 and that three billion tons of mineral and metals will be required to support wind, solar and geothermal power expansion, along with energy storage.

Mozambique is well-positioned to take advantage of this market boom, with mining operations already expanding across Cabo Delgado, Gaza, Manica, Maputo, Nampula, Niassa, Tete and Zambezia. In addition to raw mineral extraction, the sector is able to open up opportunities to suppliers across the value chain, in providing mining and refinery equipment, maintenance services and machinery and automation equipment. In the production of coal – of which the country holds some of the largest untapped deposits globally – service providers will find room to grow operations through enhanced provision of coal-mining equipment and railway logistics services. As a result, Mozambique holds extensive opportunities to add in-country value to mining operations – including through the establishment of cement plants, alumina refineries and gas-processing plants – to diversify national economies and give rise to downstream industries.

Foreign investors double down

The mining sector in Mozambique has seen several recent large-scale investments – predominantly from Australian mining firms – that speak to the sizeable returns that the industry has to offer. In the mining and processing of heavy mineral sands, Kenmare Resources invested US$106mn in Q3 2020 in moving its West Concentrator Plant at the Moma Titanium Minerals Mine in northern Mozambique. Enabling access to the high-grade Pilivili ore zone, the relocation will allow the firm to reach its targeted output of 1.2 million tons per annum of ilmenite and co-products by 2021. The Moma mine currently represents the fourth-largest producer of titanium dioxide feedstocks globally. In addition to contributing roughly 5% to domestic exports, the mine employs more than 1,300 Mozambican nationals. Other large-scale operations include Syrah Resources' Balama project, which carries a graphite production capacity of 350,000 tons per annum and accounts for 40% of the global graphite market, exporting primarily to China and the USA.

Precious minerals remain largely untapped, with gold deposits in the provinces of Niassa, Tete and Manica drawing growing attention from local and foreign investors. London-listed sustainable mining firm Gemfields, for example, invested US$13mn into its 75%-owned Montepuez ruby mine, which harnesses ruby deposits in northern Mozambique and produced 1.2 million carats in 2020. Moreover, the regulatory push from the Mozambican government for artisanal and smallholder miners to legitimise their businesses may unlock further commercialised, large-scale mining activities.

Smart mining as the future

A key determinant of mining opportunities in Mozambique and across the continent is the global energy transition, which has driven demand for certain minerals needed to fuel electric vehicles and vehicles that rely on hydrogen fuel cells. Mozambique – as well as Tanzania and Madagascar – holds substantial quantities of graphite, which is used in the production of lithium-ion batteries. While green investors have traditionally excluded mining from their portfolios due to its association with carbon-intensive coal mining, a more sustainable model is emerging through the extraction of environmentally-friendly resources. The Caula Graphite and Vanadium Project in northern Mozambique, for example, is being positioned by its developers as a low-cost supplier to the vanadium-flow and lithium battery markets that back electric vehicles and energy storage systems.

On a similar note, an initiative from the World Bank – Climate-Smart Mining – aims to ensure that mining is climate-friendly and sustainable for mineral-rich developing countries, and that benefits of extraction are extended beyond just crude revenues. Accordingly, the initiative takes a sustainable resource management approach, focused on utilising renewables to power mining operations (instead of diesel or coal) as well as recycling extracted minerals in a way that yields long-term benefits for local communities. For rising mining players such as Mozambique, the establishment of a circular economy that maximises the full scope of its resources will be integral to building a mining value chain that serves all stakeholders. ■

By Grace Goodrich
Source: Africa Oil & Power Conference