POWER
Hydrogen's potential to trigger African growth P27

CONSTRUCTION
Utilising surveying to deliver cost savings P41

MINING
African screens on the international market P46

WATER TANKS
Tips for choosing a safe and efficient solution P50

African Review

OCTOBER 2022

of BUSINESS and TECHNOLOGY

P34

BAUMA 2022

The world's leading construction and mining machinery trade fair returns

P16

DRIVING TRADE

Leading ports forming the backbone of African commerce

P20

DIESEL GENSETS

Strong demand despite rise of renewables

P30

"With the world's largest free trade area, a 1.2 billion person market and highly favourable demographics, the African continent is on a strong growth path."
Chris Antonopoulos, CEO of Lekela

59 YEARS
SERVING BUSINESS IN AFRICA SINCE 1964

VOLVO

EXCEED THE STANDARDS

With EC550E Volvo Excavators, optimize fleet use by up to 20%. These 55-tonne excavators are the perfect partner to 30-40t class Volvo articulated haulers, reducing the number of required passes – dramatically improving cycle times.

Volvo Construction Equipment

Cover picture: Ongoing construction at Tietto Minerals' Abujar Gold Project in Côte d'Ivoire
© Tietto Minerals
Cover Inset: Chris Antonopoulos, CEO of Lekela
© Lekela

Editor: Robert Daniels
Email: robert.daniels@alaincharles.com

Feature Editor: Martin Clark
Email: martin.clark@alaincharles.com

Editorial and Design team: Mariam Ahmad, Prashanth AP, Fyna Ashwath, Miriam Brtkova, Praveen CP, Shivani Dhruv, Matthew Hayhoe, Leah Kelly, Rahul Puthenveedu, Madhuri Ramesh and Madhurima Sengupta

Publisher: Nick Fordham
Sales Manager: Richard Rozelaar
Email: richard.rozelaar@alaincharles.com

Magazine Manager: Jane Wellman
Tel: +44 207 834 7676 Fax: +44 207 973 0076
Email: jane.wellman@alaincharles.com

India TANMAY MISHRA
Tel: +91 98800 75908
Email: tanmay.mishra@alaincharles.com

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

South Africa SALLY YOUNG
Tel: +27 (0) 824 906 961
Email: sally.young@alaincharles.com

UAE MURSHID MUSTAFA
Tel: +971 4 448 9260 Fax: +971 4 448 9261
Email: murshid.mustafa@alaincharles.com

UK RICHARD ROZELAAR
Tel: +44 20 7834 7676 Fax: +44 20 7973 0076
Email: richard.rozelaar@alaincharles.com

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

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

Middle East Regional Office: Alain Charles Middle East FZ-LLC, Office L2-112, Loft Office 2, Entrance B, PO Box 502207, Dubai Media City, UAE,
Tel: +971 4 448 9260, Fax: +971 4 448 9261

Production: Ranjith Ekambaram and Nelly Mendes
E-mail: production@alaincharles.com

Chairman: Derek Fordham

Printed by: Buxton Press

Printed in: SEPTEMBER 2022

ISSN: 0954 6782

SUBSCRIPTIONS:

To subscribe: visit **www.africanreview.com/subscribe**
For any other enquiry email circulation@alaincharles.com

Alain Charles Publishing
Serving the world of business

Editor's Note

Welcome to the October issue of African Review magazine. In this issue, as ever, we have essential insights and up-to-date coverage on Africa's most important industries and events from energy and trade through to construction and mining.

Our main focus falls on the return of bauma as the international trade fair opens for its 33rd edition (page 34). The event arrives with high expectations after the success of 2019, and promises to showcase innovative equipment shaping the construction and mining industries around the world.

We also delve into the changing dynamics of the ever-popular diesel generator which is continuing to provide the backbone power behind thousands of African businesses and homes (page 20). The rise of renewables, however, cannot be ignored, and to explore one resource in greater detail we speak to Chris Antonopoulos, CEO of Lekela, who explains why he believes wind power will hold a critical role in Africa's future development (page 30).

On the transport and logistics side, we look at the role of Africa's container ports and how these can help to connect the continent more efficiently with international markets (page 16) and you can also find top tips for choosing the best water tanks for your needs (page 50).

In a rapidly-changing world, African Review has been your trusted source of business information on all things Africa for almost 60 years and remains committed to your success. For rolling 24/7 news, be sure to log on to our website where you'll find more leads, stories and exclusives.

Robert Daniels, Editor

Contents

Mitsubishi Power-led consortium announces completion of STEG's Rades C Power Plant

Mitsubishi Power, the power solutions brand of Mitsubishi Heavy Industries Ltd., has announced the start of operations at the Rades C combined cycle power plant in Tunisia, owned by the Société Tunisienne de l'Electricité et du Gaz (STEG).

The high-efficiency 450MW plant was developed by a Mitsubishi Power-led consortium alongside partner Sumitomo Corporation. It is designed to expand power-generating capacity and achieve a stable supply of electricity, to help accelerate the sustainable economic development of the country.

Image Credit: Mitsubishi Power

Mitsubishi Power will support STEG with maintenance of the plant under a long-term agreement.

Located around 10 km east of the Tunisian capital, Rades C is set to provide approximately 10% of the country's current installed capacity and become the highest efficiency plant in the nation.

STEG CEO, Hichem Anene, said, "Electricity is a cornerstone of economic development, and the Rades C power plant will play a key role in accelerating Tunisia's growth for decades to come. We want to thank Mitsubishi Power and all consortium partners for this landmark project that will help us meet our energy demand today with reliable, clean and efficient power across the country, and aiming to facilitate our energy transition with industry-leading solutions and decarbonisation technologies in Japan such as hydrogen, carbon capture and energy storage."

The Rades C power plant has been designed to meet Tunisia's environmental goals, contributing significantly to a reduction of CO_2 emissions with hydrogen-ready gas turbine technology that can be easily converted to H_2 firing with minimal modifications.

Hideshi Kawamoto, president and CEO, Mitsubishi Power Ltd. and senior fellow, deputy head of energy transition & power headquarters of Energy Systems, MHI, commented, "We are proud to be here with our partners to celebrate this historic milestone marking the completion one of the most modern, most efficient and highly reliable gas-fired power plants in the world and contributing to the further advancement of Tunisia."

For the project, Mitsubishi Power provided a high-efficiency M701F gas turbine, a steam turbine, a heat recovery steam generator (HRSG), along with a team of onsite technical advisors and supervisors.

SIEMENS TO EQUIP ALEXANDRIA WITH ADMS

Siemens has been awarded a contract to upgrade the distribution management system and establish an advanced metering infrastructure for Alexandria Electricity Distribution Company (AEDC).

AEDC is responsible for the distribution network of Alexandria Governorate, the second most populated governorate in Egypt.

"We are very proud to be awarded a new contract to modernise the electrical grid, because it reconfirms Siemens' commitment to deliver world-class technology to Egypt," commented Mostafa El-Bagoury, Siemens Egypt CEO. "We are also happy to work again with JICA in Egypt. This project truly signifies what Siemens stands for: providing technology with a purpose."

Siemens will provide 300,000 smart meters and an advanced distribution management system (ADMS) control centre for the West Alexandria region.

GLOBELEQ TO DEVELOP LARGE-SCALE HYDROGEN PROJECT IN EGYPT

Globeleq, a leading independent power company, has signed a memorandum of understanding (MoU) with the New and Renewable Energy Authority (NREA), the General Authority for Suez Canal Economic Zone (SCZONE), the Sovereign Fund of Egypt for Investment and Development (TSFE), and the Egyptian Electricity Transmission Company (EETC) to jointly-develop a large-scale green hydrogen facility within the Suez Canal Economic Zone.

Globeleq will develop, finance, build, own, and operate the green hydrogen project. It will be developed in three phases, totalling 3.6GW of electrolysers and around 9GW of solar PV and wind power generation.

Mike Scholey, CEO of Globeleq, said, "Bold and rapid collective action is required to put the world on a sustainable pathway. Egypt is a key country for Globeleq, and we are excited to support the Government of Egypt's ambitious green agenda and contribute to the fight against climate change."

With around 13% of global trade flowing through the Suez Canal, the project has the potential to become a global green energy hub.

Waleid Gamal Eldien, chairman of SCZONE, added, "The new agreement with Globeleq is a continuation of our commitment to implement Egypt's vision in the transformation for green economy. The Egyptian Government has ambitious energy transition plans, and active steps are being taken to make SCZONE a major hub.

"We are pleased to partner with Globeleq, one of the major renewable energy companies in the UK and globally, and this partnership reflects the interest of the global entities specialised in investing in such projects as they choose SCZONE as a destination for investment in green fuel projects, to serve the African and international markets."

BRIEFS

EBRD promotes Egypt green investments

Image Credit: EBRD

The US$100mn loan follows the success of Egypt's GEFF project.

EBRD is extending its US$100mn loan to Banque Misr for green financing and on-lending to small- and medium-sized enterprises (SMEs).

The loan follows the success of the Green Economy Financing Facility (GEFF) in Egypt, and will support an expansion of green lending to under-served regions for investments in climate change mitigation and adaption technologies and services.

Chariot signs pipeline tie-in agreement

Image Credit: Adobe Stock

The agreement will secure access to the major Maghreb pipeline.

Chariot Limited, the African-focused transitional energy company, has announced a pipeline tie-in agreement with the Office National des Hydrocarbures et des Mines (ONHYM), securing access to the major Maghreb Europe Gas Pipeline in Morocco.

The pipeline, owned and operated by ONHYM, runs from eastern Morocco to Tangiers and Spain. The agreement will enable gas produced from the Anchois Gas Project to potential offtakers.

In life, something really matters

Aksa Power Generation is one of the leading generator set manufacturers globally, which is serving with more than 35 years experience and selling to 176 countries. Aksa provides uninterrupted energy solutions & 24/7 service guarantee with 24 branch offices in 19 countries worldwide.

Aksa Dubai as regional headquarter, manages 6 branch offices which are located in Middle East and Africa region. Dubai office established on an area of 12,000 m² and has been been operating since 2003 with more than 80 employees who are experts in their fields just to keep lighting entire Middle East and Africa.

Follow us on:

KAZANCI HOLDİNG

aksa@aksa.com.tr
www.aksa.com.tr

SADC PPDF approves regional projects to unlock business opportunities

The Southern African Development Community Project Preparation Development Facility (SADC PPDF) has approved a total of US$20.2mn for the preparation of 12 regional projects covering energy, transport and water sectors, which are expected to generate at least US$3bn in infrastructure investment.

The projects have a huge potential of unlocking business opportunities across the infrastructure value chain, not just in advisory services, but also financing, construction, equipment supply, technology and skills as well as operations and maintenance.

Image Credit: SADC

The projects are expected to generate at least US$3bn in infrastructure investment.

Among the projects approved by the PPDF and funded by the European Union (EU) and KfW Bank of Germany are the Second Alaska-Sherwood powerline in Zimbabwe; the Angola-Namibia transmission interconnector; the Kasemeno-Mwenda toll road and Luapula hydro power development – both between DRC and Zambia; Mulembo Lelya Hydro in Zambia; and the North South Rail Corridor involving Botswana, DRC, South Africa, Zambia and Zimbabwe.

The projects also include Mauritius Wastewater Pumping Station and Wastewater Treatment Plant; MOZISA power interconnector project between Mozambique, South Africa and Zimbabwe; Africa Green Co projects (all SADC Member States); Kazungula Water Supply and Sanitation Project (Zambia); Lomahasha Namaacha Cross (Eswatini and Mozambique); and the development of guidelines and standards for renewable energy projects including a funding and incentive strategy in Mauritius.

The planned expansion of power production facilities in the region needs a strong transmission network to be able to supply the additional load. The transmission projects approved by the PPDF are expected to remove bottlenecks on the Southern African Power Pool (SAPP) transmission system and to increase the capacity to wheel power and thereby enhance trade among SADC Member States.

The transmission lines would also support growth and facilitate integration of new-generation projects. The corridors in the energy and transport sectors are being advocated to create new corridors to support industrial development and improve energy security in the region.

INOSPACE ACQUIRES INDUSTRIAL SITE

Inospace, the owner and operator of logistics and industrial parks, has finalised the acquisition of a 32,000 square metre industrial site in Edenvale, east of Johannesburg, for approximately US$1.89mn from listed REIT, Accelerate Property Fund.

Formerly occupied by Meshcape Industries, a manufacturer of products for the mining industry, it is being acquired with 100% vacancy. The site includes four stand-alone industrial stands and several warehouses measuring 14,000 square metres under roof.

According to Inospace CEO David Bernstein, the acquisition represents a price of under US$113 (approximately) a square metre for a large warehouse and improvements, as well as four vacant erven.

The property will be repositioned into a serviced logistics park and rebranded as Eastleigh Exchange. It is the company's 15th new site this year.

STRYDE TO USE POLARIS' HIGH-DENSITY SUBSURFACE DATA SERVICES

UK-based seismic technology provider, STRYDE, has signed a contract with Polaris Natural Resources. The seven-figure contract, which was signed at the International Meeting for Applied Geoscience & Energy (IMAGE) in Texas, US, sees Polaris purchasing a 13,000-node system from innovative land, STRYDE. The system will be used to acquire high-density subsurface data to enable cost-effective and efficient oil and gas exploration in Africa.

This follows high-density 2D seismic data being successfully harvested from STRYDE Nodes in Zimbabwe earlier this year, before being sent for processing and interpretation, enabling an independent oil and gas operator to identify and mature additional prospects in the Cabora Bassa Basin. Drilling of the Muzarabani-1 well is now underway, with the prospect considered to be the largest undrilled conventional oil and gas prospect onshore Africa.

Bill Mooney, CEO at Polaris, said, "We required a seismic imaging system that was low-cost but wouldn't compromise the quality of the output dataset.

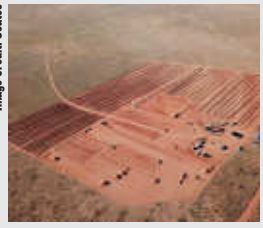
"STRYDE was able to deliver this through the use of their compact Nimble System and we were pleased to see significant cost savings and operational efficiency gains unlocked. We were able to reduce the size of the survey crew and decrease the number of vehicles and logistics required, and therefore the project timeline and associated costs and risk."

Due to the miniature size and agility of the STRYDE Nodes, Polaris was able to deploy and retrieve thousands of nodes per day, minimising the need for line clearing and land disruption, allowing to shoot the survey efficiently. Customers can also benefit from substantially reduced environmental footprint and HSE risk, while ensuring faster surveys.

BRIEFS

Eksfin provides funding for Scatec's SA solar projects

Image Credit: Scatec



Construction has begun on the Kenhardt projects.

Scatec ASA has secured US$102mn in financial risk reduction for a combined solar power/battery plant project in the Northern Cape from state-backed export credit agency Export Finance Norway (Eksfin). Scatec is set to build three power plants in the South African province with a total of 540MW of installed solar power and 225MW of battery capacity. The combination of solar power and energy storage will ensure stable supply of clean electricity even when the sun is not shining.

Johannesburg data centre set for expansion

Image Credit: Adobe Stock

The company has major expansion plans across Africa.

Africa Data Centres has announced the expansion of its Samrand facility in Johannesburg, from 10MW to 40MW of IT load. The company has expansion plans across Africa, including in North Africa, namely Morocco, Tunisia, Kenya, South Africa and Egypt. "Our unmatched investment of US$500m will enable Africa Data Centres to build numerous interconnected, cloud- and carrier-neutral data centres across the continent," said Tesh Durvasula, CEO of Africa Data Centres.

Abidjan port's second container terminal to become operational soon

Côte d'Ivoire Terminal has received six STS gantries and seven RTG gantries, marking another step in the delivery of the second container terminal (TC2) at the port of Abidjan.

Once fully functional in November 2022, TC2 will be equipped with six shore gantry cranes, 13 yards gantry cranes and 36 tractors, all of which will be electrically powered.

The gantry cranes have an outer bridge of 66 m and are known to be the largest of their kind in Africa. They are 89 m high and have the capacity to handle containers over an extension of 50 m.

Image Credit: Port Authority of Abidjan

Abidjan port's second container terminal will be fully operational before the end of 2022

The terminal, after becoming operational, will have the ability to handle 14,000 capacity container vessels boasting a 16 m draught. The Abidjan Port Authority has made an upstream investment for earthworks and the development of 37.5 ha open storage.

Côte d'Ivoire Terminal has also made significant investments for the construction of superstructures and the procurement of equipment for the future of the Ivorian port industry.

Image Credit: Port Authority of Abidjan

A number of government officials attended the reception ceremony.

A number of notable delegates and government officials attended the reception ceremony of the advanced equipment including Coné Djoman, Chief of Cabinet of the Minister of Transport; Hien Yacouba Sié, managing director of Abidjan Port Authority; Koen De Baccker, director general of Côte d'Ivoire Terminal; and Noumory Sidibé, director general of Côte d'Ivoire Energie.

DEVELOPING GHANA'S WESTERN RAILWAY LINE

The Thelo DB consortium has signed a rail management agreement with the Government of the Republic of Ghana through the Ghana Railway Company Limited, to develop and operationalise the Western Railway Line. The signing ceremony for the US$3.2bn project took place in Accra, Ghana.

The project includes planning, implementation, and operations and maintenance management. Following completion, the project aims to transform Ghana's existing rail network into a modern, robust and integrated railway system running from the Port of Takoradi to Huni Valley to Obuasi, including the branch line from Dunkwa to Awaso to Nyinahin, and to Eduadin. John-Peter Amewu, Minister of Railway Development, Ghana, mentioned that rail transport was critical to the success and achievement of traffic projections since it provided a cheaper and more efficient means of transporting such commodities.

Ronnie Ntuli, chairman of Thelo DB praised the Government for identifying the railway sector and this project in particular as a catalyst for development.

GHANA'S NEW DEVELOPMENT POLICY GAINS TRACTION

The Government of Ghana is receiving full support from the African Association of Automotive Manufacturers (AAAM) to proceed with the implementation of the next phase of its progressive Automotive Development Policy. Since being established, three new assembly plants have started producing OEM models from global vehicle brands such as VW, Toyota, Nissan and Peugeot, in addition to Ghana's own assembler, Kantanka. The assembling of Hyundai, Kia and Isuzu vehicles will also begin by the end of 2022.

The automotive industry is globally known for being a strategic sector that directly and indirectly contributes to a country's GDP. This is made possible through the multiplier effects that it generates in terms of offering employment opportunities, bringing about industrial transformation, foreign investment, innovation, and economic growth. Considering the current automotive technology revolution and globally competitive landscape, assembly investments supported by global vehicle brands offer partnership opportunities for domestic investors and hence stand as key players in the automotive value chain.

"A progressive automotive policy is essential for any country wishing to attract significant investment from international companies for either component or vehicle manufacturing, and Ghana was the first to do so, after the established vehicle manufacturing countries of Morocco and South Africa," said David Coffey, CEO of AAAM during his recent virtual AGM. "The automotive industry is gaining traction in Africa where we will see trading of vehicles between assembly hubs across the continent with Ghana being a hub in West Africa. Ghana is on a very exciting path that will have profound economic benefits in the medium and long term," he added.

BRIEFS

Julius Berger launches cashew processing factory

Image Credit: Adobe Stock

The project aims to create and retain maximum value from Nigerian cashews.

As part of its efforts to diversify beyond construction, Julius Berger has launched a state-of-the-art cashew processing factory in Lagos State, Nigeria.

Seen as a major milestone for the company, the project aims to create and retain maximum value from Nigerian cashews, thus promoting self-reliance and ensuring that Nigeria emerges internationally as a crucial contributor in the agricultural sector.

Lagos rail line enters final stage

Image Credit: CPCS

Track realignment previously performed on the Blue Line.

The China Civil Engineering Construction Corporation (CCECC) has announced that the last T-beam for the Lagos Light Rail Blue Line project, has been fully connected. A celebration ceremony marking its entry into the final critical sprint stage was attended by a number of government officials. Running over a length of 28 km, the project aims to set an example for the planning and construction of rail transit systems in Nigeria by greatly reducing the traffic pressure in Lagos.

Shopping goes green: adopting drone delivery technology

Eco-friendly and automated instant logistics leader Zipline is joining forces with leading e-commerce platform Jumia to introduce an affordable and eco-friendly means of delivering online products to consumers across Africa. The collaboration aims to seamlessly integrate Zipline's automated, on-demand delivery system with Jumia's existing distribution network to enable customers to receive any product of their choice, with minimum delays, from the very comfort of their homes.

Apoorva Kumar, EVP Jumia, Group COO, pointed out that this method would especially prove useful while delivering products to rural areas having lower connectivity and access. A pilot programme and testing was carried out a few months ago in Ghana. Deliveries to outlying Jumia hubs located as far as 85 km from the take-off location at the Zipline operational hub in Omenako were completed in less than an hour.

"This collaboration will increase access to goods for customers and help small- and medium-sized businesses grow. Zipline's safe and efficient instant logistics system will make shopping on Jumia even more convenient, sustainable and accessible," said Daniel Marfo, SVP, Zipline Africa.

Image Credit: Zipline

Zipline is collaborating with Jumia to introduce a cheap, fast and green way of delivering online products to consumers across Africa.

SADA BOOSTS DIGITAL SKILLS

Smart Africa's capacity building arm, the Smart Africa Digital Academy (SADA), in partnership with Benin's Ministry of Digital Affairs and Digitalisation has launched a national digital academy in the country, demonstrating yet again the initiative's unrelenting effort to boost digital skills on the African continent.

The launch concurred with the signing of a memorandum of understanding (MoU) between the Smart Africa Alliance Benin's Ministry of Digital Affairs and Digitalisation. "As one of the most active countries of the Smart Africa alliance, we are extremely pleased to implement SADA in Benin and advance the nation digital skills, in close collaboration with our partners," said Lacina Koné, director general and CEO of Smart Africa.

SADA's initiative in Benin will be an essential backing to the country's digital sector strategy, which is to transform Benin into West Africa's digital services platform through means including human resources with the necessary capacities to drive Benin's sustainable development. As a pan-African dynamic learning ecosystem, SADA aims to improve digital skills qualifications, employability, and meet the emerging talent needs of African citizens. SADA is also embarking on two new programmes to provide digital skills for African youth, entrepreneurs and citizens in general, for them to thrive in the global technology ecosystem.

"This MoU signature is for me, a very important step to scale up," stated Minister of Digital Affairs and Digitalisation, Aurélie Adam Soulé.

Bboxx and Unilever partner to connect Kenyan households

Bboxx, a platform providing access to essential products and services, and Unilever, a large consumer goods companies, have partnered through Sunlight, a leading detergent brand, to accelerate the provision of clean energy access for households across Kenya.

Despite significant efforts, nearly 40% of the rural population in Kenya have no access to electricity. Access to clean energy (SDG 7) is a core sustainable development goal, proven to have strong social and economic benefits. Bboxx and Sunlight will be deploying their strengths and resources to tackle this issue head on.

Image Credit: Unsplash - Matthew Henry

Bboxx and Unilever will provide essential access to clean energy for one million Kenyans.

Through joining forces, Bboxx and Sunlight will connect an additional one million people in Kenya, providing access to essential clean energy products and services over the next three years.

Mansoor Hamayun, CEO and co-founder of Bboxx, said, "At Bboxx, we understand the importance of partnering with industry leaders to achieve the best positive outcomes for our customers. We are therefore delighted to be partnering with one of the leading FMCG players, enabling us to deliver clean energy access to millions of households across Kenya. Not only is this a step towards the UN's SDG 7, clean energy for all, but it is also a marker of our expansion into other sectors, allowing us to have a more positive and widespread impact on the lives of the local communities we are present in."

Unilever home care director, Henry Muchauraya, commented, "In line with Unilever's purpose, to make sustainable living common place, our Sunlight brand is on a proud mission in partnership with Bboxx to not only help the community access clean power through our vast distribution networks but also ensure that they experience the value of its many products under the Sunlight Masterbrand. In line with Sunlight's Women of More programme, we are also looking to uplift thousands of female entrepreneurs across the country, through training and access to extra sources of income."

The partnership will drive combined marketing campaigns and mobilise agents with resources and training to promote clean energy solutions. It will also serve as a new source of income for Unilever's retailer network, comprising of more than 60% female entrepreneurs.

STIHL OPENS SECOND SUBSIDIARY IN KENYA

STIHL has opened its second subsidiary in Kenya while celebrating the 25th anniversary of its first subsidiary in South Africa. 2017 saw the opening of a Kenyan office, which offered training and product demonstrations, however, according to executive board member for marketing and sales at STIHL, Norbert Pick, the enterprise lacked the sales structure based on a dense dealer network across East Africa.

Managing director of STIHL, Francois Marais, said, "We made the decision in late 2020 to increase our investment and turn the Kenya office into a fully-fledged STIHL subsidiary with marketing, training, logistics and sales functions. This means we can leverage the potential in eastern Africa more effectively."

The new subsidiary currently employs 16 people and supplies STIHL products to the dealer network in Kenya, as well as in Tanzania, Rwanda, Burundi, Uganda, South Sudan and Ethiopia. An additional warehouse in Nairobi is operated by Fargo Courier, and external logisitics provider.

MARRIOTT SECURES LOAN FOR ETHIOPIA GREEN POWER

The UK's leading onshore deep drilling specialist, the Marriott Drilling Group, has secured a seven-figure loan to help finance the construction of two 'green' power stations in Ethiopia. The company has raised the funding from NPIF – Mercia Debt Finance, which is managed by Mercia and is part of the Northern Powerhouse Investment Fund (NPIF).

The projects at Tulu Moye and Hawassa will be the country's first independent power stations that will run off geothermal energy which has been harnessed by drilling into the volcanic rocks below.

Marriott has already invested in two new rigs which are currently being shipped to Ethiopia, and the rest of the funding will provide working capital to support the ongoing operations, which are projected to last four to five years.

Financial controller at Marriott Group, David Jones, said, "The projects at Tulu Moye and Hawassa will be critical in rolling out renewable energy to meet Ethiopia's growing power needs and we are delighted to be playing our part. However, large-scale contracts like these require us to have the right finance in place. The funding from NPIF – Mercia Debt Finance will provide additional capital to support the day-to-day operations on site."

Andy Tyas, investment manager at Mercia, commented, "Growing interest in geothermal power is opening up new opportunities for the Marriott Group. It is great to be able to support its work on these projects, which will enable it to continue to build its international reputation while supporting sustainable development in Ethiopia."

Marriott provides services worldwide to the geothermal, water, mining, and oil and gas industries and is currently working on projects in Ethiopia, Kenya, Mozambique, Bolivia, Ireland and Switzerland.

BRIEFS

Roam Rapid launched in Kenya

Image Credit: Roam

This is the first electric mass transit bus in Kenya.

Roam have launched a new electric Mass Transit Bus, the Roam Rapid, to address the challenges of public transport in Nairobi.

The bus has a high capacity of 90 passengers and features priority seating for elderly travellers and people with limited mobility.

Roam aspires to create a new perception on public transport by proving a solution that is inclusive, modern, effieicent and sustainable.

It is the first-of-its-kind in Kenya.

COSCO SHIPPING sails for Africa

Image Credit: COSCO SHIPPING

This is the first time COSCO SHIPPING has shipped to Africa.

COSCO SHIPPING Specialised Carriers has loaded 467 tankers, tractors and mining trucks onto a carrier and set sail for southeast Africa.

This is the first customised service launched by COSCO SHIPPING to deliver its construction vehicles to the region.

In recent years, many Chinese enterprises have implemented infrastructure projects and built factories across Africa, meaning the local demand for construction vehicles has grown tenfold.

Motors I Automation I Transmission & Distribution I Energy Systems I Electrical Construction

GENERATOR & ENERGY SYSTEMS

Customised configurations to provide a
tailor-made solution
for your energy challenge

Zest WEG Generator Sets prides itself in solutions driven innovation through our engineering acumen. In addition to our stock availability which allows us to rapidly respond to our customers' energy requirements, we have the ability to provide comprehensive after sales support to our customers across Africa.

Through our manufacturing facility located in Cape Town, we offer access to locally manufactured, fit-for-purpose generator sets; standard off-the-shelf diesel generator sets and custom built, application specific units; in either stationary or mobile configurations from 10 kVA up to 3350 kVA. Larger power generation requirements can be provided, through the synchronisation of multiple sets.

Transforming Energy into Solutions.

Level 1 BBBEE | CIDB Grades 9EP & 6EB | ISO 9001:2015 | African Distribution

ZEST
WEG Group

+27 (0) 21 507 7200 | 0861 009378
www.zestweg.com | gensets@zestweg.com

Upcoming Events Calendar 2022

OCTOBER

3-7

AFRICA OIL WEEK
Cape Town, South Africa
https://africa-oilweek.com/Home

4-5

GREEN ENERGY AFRICA SUMMIT
Cape Town, South Africa
https://greenenergyafricasummit.com/

18-21

AFRICA ENERGY WEEK
Cape Town, South Africa
https://aecweek.com/

24-30

BAUMA
Munich, Germany
https://bauma.de/de/

NOVEMBER

6-18

COP27
Sharm El Sheikh, Egypt
https://cop27.eg/

8-10

AFRICACOM
Cape Town, South Africa
https://tmt.knect365.com/africacom/

8-11

ECOMONDO
Rimini, Italy
https://en.ecomondo.com/

15-16

THE MINING SHOW
Dubai, UAE
https://www.terrapinn.com/exhibition/mining-show/index.stm

22-24

PROPAK WEST AFRICA
Lagos, Nigeria
https://www.propakwestafrica.com/

DECEMBER

5-7

SUPERRETURN AFRICA
Cape Town, South Africa
https://informaconnect.com/superreturn-africa/

5-8

THE BIG 5
Dubai, UAE
https://www.thebig5.ae/

JANUARY

16-18

WORLD FUTURE ENERGY SUMMIT
Abu Dhabi, UAE
https://www.worldfutureenergysummit.com/

PROPAK WEST AFRICA 2022: A CELEBRATION OF ALL THINGS PACKAGING, PROCESSING AND PLASTIC

Buckling up for the busiest year to date, the Propak West Africa exhibition will take place at the Landmark Centre in Lagos, Nigeria, with a jam-packed schedule running from 22-24 November 2022.

Organised by Afrocet Montgomery, the event is the largest packaging, plastics, printing and processing exhibition in West Africa, which sees industry professionals showcase and demonstrate their products with the aim of raising the profile of the region's manufacturing sector collectively.

In 2021, the exhibition took place off the back of the Covid-19 pandemic, however this year promises to be bigger and better as it has already surpassed the benchmark set in 2019 for the record number of attendees and brands showcasing at the event. This year, more than 5,500 visitors and 200 brands are forecasted to enjoy the exhibition over the course of three days.

Regional director of Afrocet Montgomery, George Pearson, said, "We're delighted with the speed the exhibition has bounced back to its pre-pandemic size and trajectory and this is done to the confidence our exhibitors and stakeholders have in the brand."

Visitors at this year's exhibition can explore the vast range of products and equipment on display. including live demonstrations of the newest machinery in that sector. The exhibition presents the perfect opportunity for business representatives to source the missing elements needed to enhance their company's supply chain. Visitors also have a Chance to build their network by meeting industry professionals from more than 30 countries who share the same passion to see growth across the sector. Furthermore, visitors can hear directly from experts as they share insightful information regarding their experiences and knowledge in a variety of topical conferences.

Image Credit: Afrocet Montgomery

The exhibition has already surpassed the benchmark set in 2019 for the number of brands and visitors in attendance.

Afra Technical Concept, Beaumont Industrial Services, Epson, Haitian Plastics Machinery Group, Ishida Europe, Ok Plast and TetrePak West Africa are among confirmed exhibitors, leaving only limited space to fill.

Propak will also showcase a fresh-look conference programme that runs alongside the exhibition which will take a closer look at the verticals that make up the exhibitor profiles as well as green technologies, intra-Africa trade, industry developments and capital finance for machinery.

Learn more at www.propakwestafrica.com.

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

PEPSICO EXPLORES SOLAR OPTIONS AT SOUTH AFRICAN PLANTS

Image Credit: Absolicon

Absolicon Solar Collectors.

Absolicon, a solar energy company specialising in concentrated solar heating, and PepsiCo Inc. have agreed to start a feasibility study on how to integrate solar heat in food and beverage processing at three PepsiCo plants in South Africa.

This is in line with PepsiCo's sustainability strategy which targets every stage of the company's complex value chain to use resources more efficiently and reduce greenhouse gas emissions.

Absolicon T160 patented technology, with an operational temperature of up to 160°C heat and 8 bar steam, matches the thermal energy demand of the food and beverage processing in the PepsiCo plants, and the study ordered from Absolicon is performed to calculate the positive impacts of implementing Absolicon solar heat to the local PepsiCo production.

The study will be performed by Absolicon together with local production partner GreenLine Africa.

BME DEBUTS AXXIS SILVER AT SUB-ZERO LESOTHO MINE

Image Credit: BME

AXXIS Silver model allows up to 1,800 holes to be detonated in a single blast.

Explosives and blasting specialist BME has achieved the first blast outside of South Africa with its new AXXIS Silver electronic initiation system.

BME is assisting a diamond mining customer to conduct quality blasts in all weather. Located at an altitude of over 3,000 m, the operation frequently experiences snow and sub-zero temperatures.

"This means blasting under challenging conditions, including extreme cold, snow and ice. BME provides everything from the emulsion explosive to the detonation equipment, which all continues to function well under these conditions," said Hennie du Preez, BME's AXXIS support manager.

"Among the benefits of AXXIS Silver is its thin, copper-cladded downline wire, which de-coils easily for use in small diameter holes – even when they are waterlogged. Due to their robust quality, our electronic detonators were able to remain in the holes for two days before blasting, in temperatures below zero where the hole-collars froze solid."

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

KELLER COMPLETES RAILWAY STATION FOUNDATIONS IN SOUTH AFRICA

Image Credit: Keller

The work took seven months to complete.

Keller, a geotechnical specialist contractor, has provided the foundations for a 22-storey student accommodation block, part of the R1.3bn (approx. US$81mn) Cape Town railway station landmark development.

Cape Station will include a 3,085 bed, purpose-built student accommodation block, 6,700 sq m of retail space and a new public square with landscaped gardens and artwork.

Keller's scope of work consisted of demolishing previous structures, installing new civil services and constructing new foundation piles.

Optimising the design, Keller came up with four different pile types across seven pile sizes. The majority were driven cast in-situ (also known as Franki piles) – a staple product offered by Keller.

"We installed these versatile piles in two variants: compression-only piles and tension/compression piles," said Arnold van Taak, the project manager.

On the northern site boundary, a new culvert was being constructed, requiring a relatively deep excavation adjacent to existing services and trees. To overcome these challenges, Keller came up with an alternative to the initial sheet-pile solution using reinforced ODEX piles.

In certain areas, structural loads warranted temporary cased auger piles. Again, Keller designed a number of these to work in compression as well as tension. The team also installed a number of micropiles.

BSI URGES MINING ORGANISATIONS TO TIGHTEN THEIR ESG FOCUS

Image Credit: BSI South Africa

BSI South Africa says belts have to be tighten if firms want to meet global targets on sustainability.

The British Standards Institution (BSI) South Africa is calling on mining organisations to tighten their ESG focus in order to meet global targets on sustainability.

BSI regional managing director, Theuns Kotze, said, "Compliance framework requires the inclusion of structures and processes to reduce and eventually eliminate non-compliance. At BSI we ensure this, and furthermore, will guide organisations through assessments on the efficiency of their current policies, practices, behaviours, and attitudes."

In June 2021, the department of Mineral Resources and Energy recorded the highest growth rate in the first quarter – mining recorded 18.1% growth, contributing 1.2% to the overall 4.6% seasonally adjusted and annualised GDP. This was due to increased production in the PGMs, iron ore and gold.

"Mining companies need to set regular targets, have transparent progress reports and continuously refine their approach. Furthermore, they must demonstrate that they not only understand risks and opportunities of ESG but also display a commitment to addressing them in their day-to-day operations.

"To ensure continued investment in the mining industry and cement the industry's contribution to the national economy, it is key to look at frameworks that ensure adoption and adherence to ESG strategy," added Kotze.

STARSIGHT ENERGY MERGES WITH SOLARAFRICA TO FORM LARGE C&I SOLAR DEVELOPER

Image Credit: Adobe Stock

The newly formed entity will comprise of 340 staff across multiple jurisdictions.

Renewable energy services provider, Starsight Energy, and South African-based solar firm, SolarAfrica Energy, have announced a merger agreement to become one of the continent's leading solar players to provide competitive, full-service renewable energy and energy efficiency solutions to the C&I sector.

The merger will create a pan-African renewable energy service provider, amidst a global drive towards greener and cleaner energy sources. The merged entity will comprise a portfolio of more than 220MW of operated and contracted generation capacity, and 40MWh of operational battery storage, with an additional generation pipeline exceeding 1GW.

SolarAfrica has already positioned itself as a competitive player in the newly enabled power wheeling space, having recently signed up large blue chip customers. The group is now well positioned to service large power users with a lower cost electricity alternative from a recently developed centralised solar generation site, taking advantage of South Africa's newly revised regulations permitting wheeling and self-generation of up to 100MW by private generators.

Tony Carr, Starsight Energy's group CEO, explained, "With SolarAfrica, the new combined group becomes one of the largest commercial providers of reliable and clean energy solutions to the commercial and industrial sector across the continent."

MOU TO CONSIDER NIGERIA-MOROCCO GAS PIPELINE FEASIBILITY

Image Credit: ECOWAS

The MoU was signed in Rabat, Morocco, between ECOWAS, the Federal Republic of Nigeria and the Kingdom of Morocco.

ECOWAS, the Federal Republic of Nigeria and the Kingdom of Morocco have signed a memorandum of understanding (MoU) to progress the feasibility of the Nigeria-Morocco gas pipeline.

The countries crossed by the pipeline and ECOWAS agreed to contribute to the feasibility and technical studies, mobilisation of resources and execution of the key project. This project, once completed, will supply gas to all the countries of West Africa and will open a new channel of export to Europe.

It is a strategic project that will reportedly contribute towards improving the living standards of the population, integrating the economies in the region, decreasing the level of desertification thanks to a sustainable and reliable gas supply and a reduction in or outright end to gas flaring, among others.

The pipeline project will span 6,000 km and will traverse the West African coast from Nigeria to Morocco, through Benin, Togo, Ghana, Cote d'Ivoire, Liberia, Sierra Leone, Guinea, Guinea Bissau, The Gambia, Senegal, and Mauritania. In the long term, it will be connected to the Maghreb-Europe gas pipeline and to the European gas network.

With the launch of the project, which is expected to cost US$25bn, efforts will be made to attract public and private investors including multilateral or commercial banks, pension fund, insurance companies, among others.

Nothing should get in the way of getting business done

It's time to get business done better with MTN Business ICT Solutions.

Image Credit: Getty Images

There is a growing recognition that digitising operations can offer unprecedented commercial value in flexibility, productivity and growth.

More and more often, clients are looking for ways to keep their staff productive in a dynamically changing business environment. Whether employees are working from home, the office, or abroad, there is a growing recognition that digitising operations can offer unprecedented commercial value in flexibility, productivity and growth.

This new digital reality means that it is more important than ever to stay agile – if there is anything that can slow a business down, it is being burdened by old technology.

Having made substantial investments in fibre technology, high-speed terrestrial and undersea networks and new frequency spectrums across the markets wherein it operates, MTN is perfectly positioned to respond to this shift in the market.

A few years ago, MTN also made the decision to build an IP capable radio network for its mobile services, giving its core network the ability to seamlessly integrate with enterprise IP networks. The company's mobile towers deliver services to enterprise clients absolutely anywhere they have a network, shortening the last mile and removing complexity and cost.

MTN's evolution

For MTN, the focus has shifted from just being a core telecommunications services provider towards also becoming a technology solutions provider.

Its service offering now also includes the Internet of Things (IoT), Unified communications, Cloud solutions, Security as a Service and Managed network. The scope has changed to being client and industry specific, so the requirements and service portfolio vary from one client to the next.

> "For MTN, the focus has shifted from just being a core telecommunications services provider, towards also becoming a technology solutions provider."

Now there is increasing demand from clients to connect their remote sites in all areas, including rural and semi-rural. MTN has assisted clients with overcoming this connectivity hurdle, enabling their staff to get the job done wherever they are.

The expectation is that a company like MTN must respond to these challenges, helping clients to get business done better as they shift from old to new technologies.

As many businesses continue to grapple with a digitally dynamic world, they face new challenges that have to be solved. This environment will benefit those that are more digitally enabled and agile. It is a brave new world that will favour online over on-site, wireless over wired and fluid over formulaic. Businesses will seek out partners and suppliers that are every bit as flexible and forward-looking as they are.

Ultimately, clients need partners like MTN Business that will invest in infrastructure, deliver the services they require, have market credibility, are financially sound and have a long-term commitment to their market presence. ■

Driving international trade

With more than 80% of merchandise trade carried by sea, maritime ports are an integral part of the economic bedrock for many countries across the globe, facilitating the most reliable, economical and energy efficient mode of transportation over long distances.

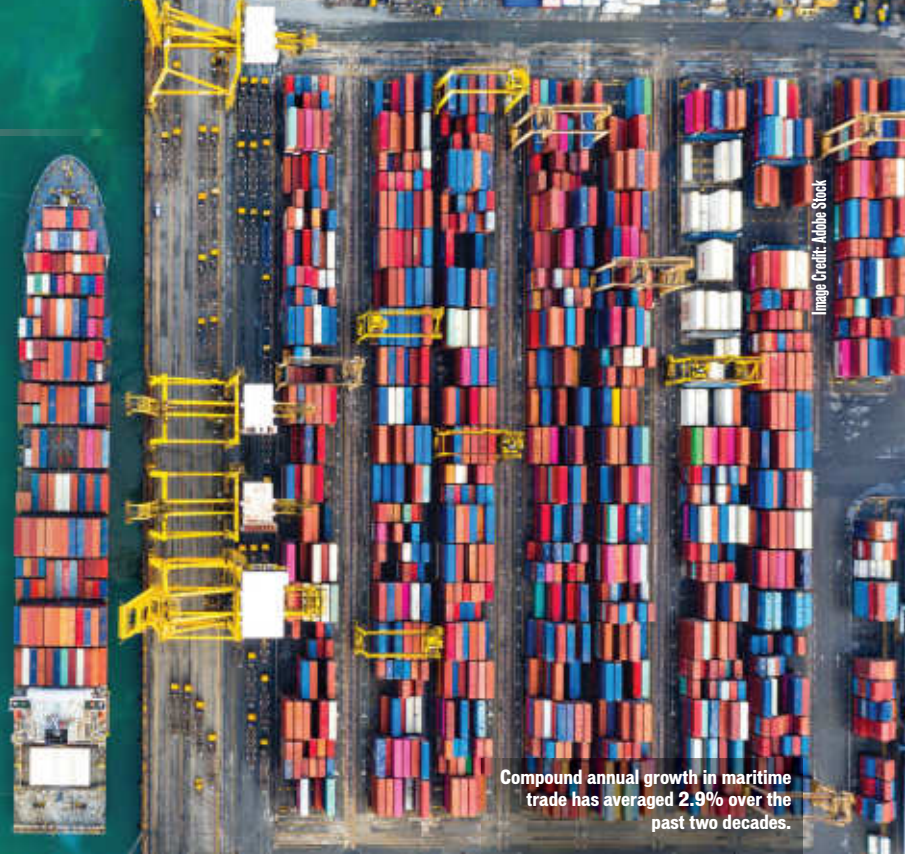


Image Credit: Adobe Stock

Compound annual growth in maritime trade has averaged 2.9% over the past two decades.

Maritime transport in today's integrated world is the backbone of global trade and the manufacturing supply chain. A large portion of merchandise trade, representing approximately 35% of total volumes and 60% of commercial value, is carried in containers (according to World Bank data).

Compound annual growth in maritime trade has averaged 2.9% over the past two decades. In 2020, maritime trade volumes fell 3.8% or 10.65bn tons (UNCTAD data) due to the Covid-19-induced downturn and, after a tentative recovery in 2021, several shocks have again hit the global economy this year in the form of the Ukrainian war fallout, a slowdown in China, the global energy crisis, spiralling inflation especially in the U.S. and major European economies, and tighter monetary policy. This has triggered debt distress in both advanced and emerging-developing countries, as well as geopolitical supply-side disruptions.

The International Monetary Fund (IMF) projects world output growth slowing from 6.1% last year to 3.2% in 2022 which, in turn, will affect the volume of maritime trade. The latest Goods Trade Barometer from the World Trade Organization (WTO) indicated that global trade growth is stagnating. The indicator (as of August end) "was steady but below the recent trend line for merchandise trade, suggesting that global goods trade continued to grow in Q2 2022 but that the pace of growth was slower than in Q1 and is likely to remain weak in the second half of the year," the WTO said.

A report from S&P Global Market Intelligence also warned of weakening trade volumes over the coming months – reflected in a drop in global freight rates. Container shipping rates have plunged by 60% this year to date, according to the Freightos Baltic Index cited by the Wall Street Journal.

Table 1 - Leading maritime ports in sub-Saharan Africa 2021

Container ports	Size by throughput capacity *1	Total calls *2	Port capacity ranking *3 1,500	1,501-5,000	5,001-8,500	8,501-13,500	>13,500
Abidjan (Cote d'Ivoire)	Medium	317	292	343	215		
Beira (Mozambique)	Small	80	92	304			
Cape Town (South Africa)	Medium	174		340	225	182	
Conakry (Guinea)	Medium	143	136	260			
Cotonou (Benin)	Medium	378	279	337	211		
Dar es Salaam (Tanzania)	Medium	139	291	349			
Dakar (Senegal)	Medium	399	276	277	172		
Douala (Cameroon)	Medium	112	282	345			
Durban (South Africa)	Medium	397		341	219	178	95
Freetown (Sierra Leone)	Medium	130	218	287			
Kribi Deep Seaport (Cameroon)	Small	135	287	338	220		
Lagos (Nigeria)	Medium	125	250	306	226		
Luanda (Angola)	Medium	174	270	333	223	183	
Lome (Togo)	Medium	168	288	334	209		
Mombasa (Kenya)	Medium	269	150	269	192		
Maputo (Mozambique)	Small	79	156	322	202		
Ngqura (South Africa)	Medium	235		319	212	176	99
Owendo (Gabon)	Small	68	253	324			
Onne (Nigeria)	Small	25		308	217		
Port Elizabeth (South Africa)	Small	60		316	193		
The Port of Djibouti (Djibouti)	Medium	225	5	120	48	53	21
Pointe-Noire (Congo, Rep.)	Small	260	284	335	218	180	
Port Louis (Mauritius)	Medium	380	260	289	167	154	72
San Pedro (Cote d'Ivoire)	Small	45	245	339			
Tin Can Island (Nigeria)	Medium	65	215	311	213		
Tema (Ghana)	Medium	665	285	314	184	151	92
Takoradi (Ghana)	Medium	27	224	305			
Walvis (Namibia)	Small	102	141	288	199	155	

Source: The Container Port Performance Index 2021 (World Bank Group)
**1 Large: >4mn TEUs/year; Medium: 0.5–4mn TEUs/year; Small: <0.5mn TEUs/year*
**2 Port call: a call to a container port/terminal by a container vessel where at least one container was discharged or loaded*
**3 Columns indicate the ranked capacity of each port (1-370 against a selection of ports across the globe) to handle container vessels of various sizes*

Image Credit: Alain Charles Publishing

Connecting global supply chains

Ports (and their associated logistical chains) are pivotal in ensuring regular supplies of essential goods and services – a prerequisite for a country's wellbeing.

The efficiency of port infrastructure has supported the 'export-led' growth strategy of many emerging economies by strengthening links with global supply chains. This, in turn, has facilitated investment in production/distribution systems, the expansion of manufacturing/logistics and job creation. There are 28 leading maritime ports in sub-Saharan Africa (see Table 1). These are mostly small and medium size ranked by 'throughput' capacity (i.e., the amount of material or items passing through a system).

More specifically, how a maritime port performs impacts a country's trading cost and overall competitiveness. However, ports and terminals in some places are key sources of shipment delays, supply chain disruptions, additional costs, and reduced competitiveness. "Poorly performing ports are characterised by limitations in spatial and operating efficiency, limitations in maritime and landside access, inadequate oversight, and poor coordination between the public agencies involved, resulting in a lack of predictability and reliability," stated the World Bank.

Decrepit port infrastructure leads to shipping delays and supply chain disruptions, which particularly affect the hinterland region and landlocked developing countries (15 in SSA) – resulting in shortages of essential commodities and higher market prices. Moreover, an inefficient port hinders economic growth, whilst increasing a country's trading cost versus competitors.

Non-tariff barriers also act as obstacles to global trade other than customs tariffs. The WTO identifies such barriers as import licensing, pre-shipment inspections, rules of origin, custom delayers, or any other rules that dictate how a product can be manufactured and handled, which result in higher costs, reduced competitiveness, and lower trade.

Shipping liners

Container shipping companies are a vital part of the global supply chain. They comprise a worldwide fleet of more than 6,200 vessels with aggregate capacity of almost 25mn twenty-foot equivalent units or (TEU), according to information provider for liner operators, Alphaliner (end-August 2021). The top 10 container carriers collectively operate around 80% of global fleet capacity.

The world's biggest shippers are Maersk (Denmark): 4,222,017 TEUs (733 ships); Mediterranean Shipping Co. (Switzerland): 4,101,961 TEUs (615 ships); CMA CGM (France): 3,007,131 TEUs (542 ships); COSCO (China): 2,970,150 TEUs (489 ships); Hapag-Lloyd (Germany): 1,780,304 TEUs (259 ships); Ocean Network Express (Singapore): 1,592,173 TEUs (218 ships); Evergreen (Taiwan): 1,397,365 TEUs (203 ships); HMM (South Korea): 825,060 TEUs (78 ships); Yang Ming (Taiwan): 625,332 TEUs (87 ships); and Wan Hai (Taiwan): 425,221 TEUs (149 ships).

Operational efficiency

Port to Berth Hours, the time from when a ship first arrived at the port limits until it is all fast alongside the berth, and Port Hours, the number of hours a ship spends at port, are critical for operators. Efficiency criteria are measured by the availability of sufficient draught, quay, and dock facilities, plus reliable accessibility to road and rail networks to the hinterland as well as the efficacy of procedures involved in container clearance.

'Time is money' because container liners operate on tight schedules. Typically, containerships spend around one-fifth of their total full rotation time in ports. Reduced port time enables ship operators to reduce vessel speed between port calls, thus conserving fuel, reducing emissions, and lowering costs. Ships falling several hours behind their pro-forma schedule often incur extra contingency costs.

"Delays at any of the scheduled ports of call on the route served by the vessel would have to be made good before the vessel arrives at the next port of call-in order to avoid an adverse impact on the efficient operations of the service," according to the World Bank.

The World Bank Logistics Performance Index (LPI) captures the perceived efficiency of seaport services and border clearance processes and indicate the extent to which inefficiencies at a nation's sea borders can impact international trade competitiveness.

Similarly, the United Nations Conference on Trade and Development's (UNCTAD's) Liner Shipping Connectivity Index (LSCI) captures how well countries are connected to global shipping networks. On this benchmark, only a few of SSA port's capabilities compare favourably with countries in other regions (see Table 2).

Encouraging development

Large-scale investments in Africa's maritime port infrastructure are a must to improve regional competitiveness and reduce trading costs, which are considerably higher than other regions.

The African continent needs to integrate more with global value chains (see ATR August 2022), which requires efficient infrastructure services, including transportation links to outside world, both by seaports and air cargo. ■

Moin Siddiqi, economist

Table 2 - Trade facilitation data on selected African countries

	Logistics performance index 1-5 (worst to best) 2018	Lead time (days): Exports 2018	Imports 2018	Liner shipping connectivity index 2019 (maximum in 2004 = 100)	Ports container traffic TEU ('000) 2020	Registered carrier departures worldwide ('000) 2020
Angola	2.05	14.0	14.0	30.5	672	4
Benin	2.75	14.0	10.0	18.00	511	
Cameroon	2.60	5.0	6.0	15.4	396	1
Congo, Rep.	2.49	18.0	12.0	29.8	557	2
Cote d'Ivoire	3.08	4.0	4.0	20.0	975	8
Djibouti	2.63	2.0	3.0	32.7	813	
Gabon	2.16	25.0	25.0	13.1	193	
Ghana	2.57	1.0	1.0	36.7	1,051	9
Guinea	2.20			14.9	198	
Kenya	2.81	4.0	4.0	17.4	1,311	33
Mauritius	2.73	1.0	2.0	33.7	438	4
Mozambique	2.68	3.0	5.0	12.1	437	7
Namibia	2.74	3.0	4.0	15.7	167	1
Nigeria	2.53	3.0	2.0	21.5	1,529	47
Senegal	2.25	1.0	7.0	16.9	563	4
South Africa	3.38	3.0	3.0	39.9	4,029	89
Sudan	2.43	11.0	12.0	8.9	493	2
Tanzania	2.99	4.0	4.0	16.0	363	54
Togo	2.45	2.0	3.0	34.6	1,725	6

Source: World Development Indicators 2021 (World Bank Group)

Image Credit: Alain Charles Publishing

Scatec to build solar facility in Botswana

Scatec and the Botswana Power Corporation (BPC) have signed a binding 25-year power purchase agreement (PPA) for the construction of a solar PV facility with a contracted capacity of 50MW at Selebi Phikwe.

Scatec will own 100% of the project and will be the designated engineering, procurement and construction company (EPC), asset manager, and O&M contractor.

Scatec will construct the solar facility in Selibe Phikwe, a former mining town located in the eastern part of the country. The solar power plant will ensure that approximately 48,000 tons of CO_2 emissions will be avoided and power approximately 20,000 households annually.

Image Credit: Scatec

Scatec will construct the solar facility in Selibe Phikwe.

The agreement has been called a significant development for Botswana and the wider green energy transition in sub-Saharan Africa.

Even though Botswana possesses 66% of Africa's coal resources, the nation's ambitions to make the most of its abundant renewable resources (the country receives more than 3,200 hours of sunshine per year for instance) is clear to see.

Renewables should account for 15% of Botswana's energy mix by 2030 – while the country's Vision 2036 calls for 50% renewable energy allocation by 2036.

"We are proud to have reached this milestone with the BPC – demonstrating our ability to support and deliver clean energy and infrastructure to sub-Saharan Africa. It is also a significant achievement for the people of Botswana," said general manager of sub-Saharan Africa at Scatec, Jan Fourie.

The agreement marks yet another project Scatec is undertaking within Africa's renewables sector. Across the border into South Africa, the company has begun construction of the three kenhardt projects in the Northern Cape and it has also signed a binding commercial agreement to undertake the co-development of the Mpatamanga hydropower project in Malawi.

VIRGINIA GAS PLANT COMES ONLINE

Renergen has announced that the Virginia Gas Project in South Africa is now operational marking Renergen's transition from explorer to producer by producing liquid hydrocarbons. The helium module producing liquid will come online in due course. Renergen has now commenced filling of bulk storage tanks to begin delivery of product to customers.

The Virginia project becomes South Africa's first commercial LNG plant and Renergen will now focus on ramping up operatins over the coming months to full Phase 1 capacity which will play a key role in reducing the country's carbon footprint.

Stefano Marani, CEO of Renergen, commented, "This is a significant step on the path to showing the world that Renergen can become a global player in liquid helium supply and a material local supplier of much needed LNG."

AVANTI COMMUNICATIONS PICKS CLEAR BLUE FOR SMART OFF-GRID POWER

Clear Blue Technologies International Inc., a smart off-grid company, has announced that it will provide smart off-grid power for Avanti Communications, a leading provider of high throughput satellite capacity across EMEA, for its e-learning services in Africa.

Avanti and its e-learning partners plan to deliver satellite connectivity to enable e-learning for an initial 3,000-5,000 schools across sub-Saharan Africa.

As per the agreement, Clear Blue will be the exclusive off-grid power provider for Avanti's eEducation services.

Toby Robinson, chief of strategy & business development at Avanti, commented, "Clear Blue's smart off-grid solves one of the biggest problems in hard-to-reach areas – a lack of easy, low cost and reliable power."

Led by Avanti Communications and its partners, iMlango was a first-of-its-kind e-learning partnership created to deliver improved educational outcomes in maths, literacy and life skills. The project has been running for seven years and has delivered improved educational outcomes for over 180,000 marginalised schoolchildren in 245 schools in northern Kenya.

Avanti's rural network coverage solution supports 2G, 3G, 4G and Wi-Fi connectivity across Africa. As part of this initiative, Avanti will provide critical connectivity services and VSAT equipment. At the same time, Clear Blue shall provide its smart off-grid solar-powered solutions with remote management and control to ensure maximum uptime of connectivity services necessary for Avanti's deployment of its integrated e-learning system(s).

Clear Blue's technology will also power the educational equipment and systems. With initial pilots beginning in Q4 2022, the rollout will continue from late 2023 through 2025.

BRIEFS

Partners consider green hydrogen feasibility

Image Credit: Adobe Stock

Mauritania's renewable resources make it a good candidate for Power-to-X solutions.

Chariot Limited and Total Eren have agreed to launch feasibility studies in order to co-develop the Nour Project - a large-scale green hydrogen project to be located in Mauritania.

With a potential reaching up to 10GW of electrolysis to be installed, it could become one of the most significant green hydrogen projects in Africa once fully implemented. The Nour Project could contribute to sustainable economic development in Mauritania.

Funding to accelerate Africa's climate resilience

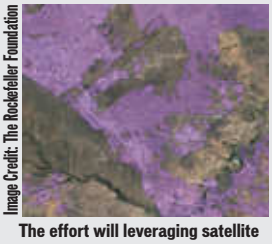


Image Credit: The Rockefeller Foundation

The effort will leveraging satellite data and machine learning technologies.

The Rockefeller Foundation has announced a US$5.5mn collaboration with e-GUIDE and Atlas AI to accelerate economic development and promote climate resilient infrastructure investment across sub-Saharan Africa. This three-year effort will produce insight into the well-being of communities through a groundbreaking digital platform, which builds upon new research and publicly available data sets covering the nexus of energy, agriculture, and transportation sector development conditions.

ALTERNATORS MADE IN ITALY

Your Success is our Mission

Linz Electric is an Italian company specialized in the production of synchronous alternators up to 1500kVA. Linz Electric's Mission is to create the most efficient solution to lead customers to success through Made in Italy quality products, flexibility in process and quick and complete service.
Linz Electric's Alternators: Energy for your Success.

PEDROLLO GROUP

www.linzelectric.com

LINZ ELECTRIC

Diesel genset market weathers rise of renewables

The demand for diesel generating sets in Africa remains as strong as ever, against a backdrop of interest in renewable energy sources and innovative hybrid solutions. Martin Clark reports.

Energy may be the hot topic in Europe right now, after the decision by western leaders to phase out Russian gas supplies, but in Africa it always has been.

That is largely down to an historically lacking energy supply infrastructure, as well as sub-economic terms that have thwarted private power investment. Where grid-based electricity supplies are unreliable, or simply unavailable, sales of diesel generating sets, or gensets, have flourished.

Demand has also rebounded relatively quickly after the Covid-19 lockdowns crushed businesses and shuttered whole economies. Imports of diesel gensets increased by 12% in the first quarter of 2022, for example, compared to the same quarter of last year, and are only 3% lower than the pre-crisis level (first quarter of 2019).The increase was particularly significant for smaller-sized generator sets, below 75kVA.

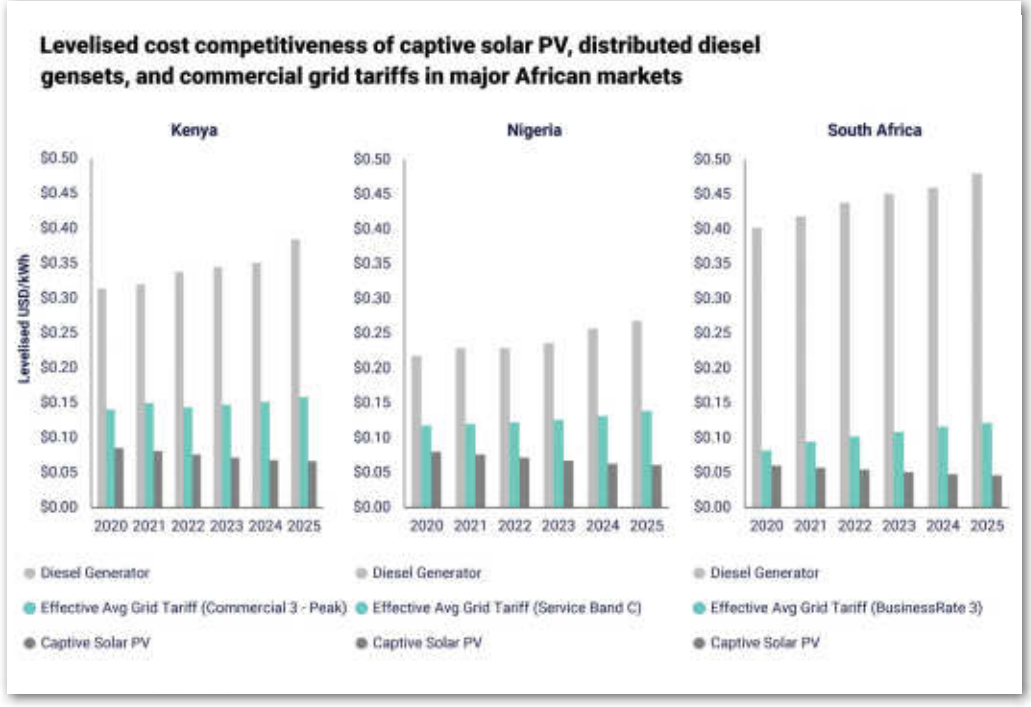


Image Credit: Wood Mackenzie

Old reliable

Today, approximately half of African businesses rely on back-up diesel generators if the grid goes down, despite high and unpredictable fuel costs. Energy consultancy Wood Mackenzie conservatively estimates that more than 100GW of distributed diesel capacity is operational across Africa today. Its findings also suggest that at least 17 African countries have more distributed diesel generator capacity than they do grid-connected power generation capacity.

Across sub-Saharan Africa (excluding South Africa) consumers spend just under US$20bn a year on fuel for back-up generators, around 80% of what they spend on grid electricity. Even so, generators provide only 7% of total electricity supply, the consultancy notes.

Shaping the market

Nigeria still remains by far the largest single market in Africa for gensets overall, with Kenya and Libya among other territories to perform well in terms of demand in recent times, driven by infrastructure and telecoms spending, as well as investment in data centres.

Even in more developed markets, such as South Africa, there is an anticipation of continuing growth in this segment.

A market research report published by P&S Intelligence estimates that demand in South Africa will grow by 3.9% annually through to 2030. It suggests that infrastructure spending, plus growth in the telecoms, construction and manufacturing sectors will help to drive demand.

Major players serving the market include Aggreko, Caterpillar, Cummins, Kohler, Atlas Copco, Jubaili Bros, PacB Power Solutions, Multilec Generator Services, Algen Power Generation, and Aksa Power Generation SA.

Increased competition has also seen a spike in demand for Chinese-built gensets, which have broadly enjoyed a steady and sustained uptick in growth over the past few years. But there are a myriad of other factors at play too, notably the shift to renewables, which is reshaping the energy sector generally, and potentially could eat away at demand for diesel gensets over the longer-term.

Environmental considerations are now key drivers in all new projects and are likewise shaping behaviour among genset makers, who are seeking on a constant basis to improve fuel consumption and energy efficiency.

Wärtsilä recently confirmed that it had been selected to help Endeavour Mining upgrade the energy infrastructure at its Sabodala-Massawa complex in Senegal. The Australian miner is looking to boost capacity at the mine, which means a big upgrade to the power plant, which it hopes will be completed and commissioned before the end of 2023. At the existing complex, electricity is provided via a dedicated power station comprising six generators running on Heavy Fuel Oil (HFO) and rated at 6MW each.

In addition, two smaller diesel generators provide back-up capacity at the site. The expansion means an additional three 6MW HFO generators are needed to provide sufficient capacity for the refractory plant, with a further two 1.6MW diesel generators to be added as back-up.

Wärtsilä said in August that it will supply an 18MW extension to the power generating facility as well as upgrade the electrical and automation system. It also said that the three new Wärtsilä 32 engines to

be installed will be approximately 20% more fuel efficient than the plant's existing engines. Looking further ahead, the upgraded power infrastructure at the mine site is also being adapted so that it can be fed by solar power sources in the future.

Such hybrid solar and thermal power plants are becoming an increasingly common sight as a transitional solution for mining and other energy-hungry installations, combining renewables and the dependency of diesel gensets.

According to Wood Mackenzie research, nearly two-thirds of mines across sub-Saharan Africa have already procured or are procuring on-site renewables, largely to reduce costs and emissions, as well as boost overall reliability and resilience.

For commercial and industrial users, there are many instances where diesel gensets have been hybridised with solar and batteries, or displaced entirely, improving reliability and price certainty, reducing costs and decarbonising operations. There are clear cost and economic factors to weigh up in what is an uncertain and fast-evolving landscape.

Wood Mackenzie notes that electricity from distributed gensets typically costs 1.5–2.5 times utility tariffs, illustrating the reliability premium customers are willing to pay. On a levelised basis, captive solar costs are 25–40% below commercial grid tariffs in markets such as Kenya, South Africa and Nigeria. While diesel prices rise, they are forecast to fall about 25% further by 2025, by when at least 10GW of distributed commercial and industrial solar to be installed across the continent.

These are all points echoed by law firm, Bird & Bird, in a report on the rise of renewables in the mining sector, one of the primary energy consumers in sub-Saharan Africa. The cost of electricity generation in a mining project is typically between 10–35% of project cost — making energy economics a matter of priority. With the cost of wind and solar expected to fall by 26-59% by 2025, it is estimated that energy costs in new mines will be reduced by 25-50% through a hybrid energy management system, the firm notes.

Bird & Bird has advised Centamin on a hybrid 36MW solar and 7.5MW battery energy storage plant for its Sukari gold mine in Egypt, which is set to be commissioned this year.

Sukari — dubbed Egypt's first large-scale modern mine — will also produce its five millionth ounce of gold this year since it began production 13 years ago.

Martin Horgan, Centamin's chief executive, said the addition of the new hybrid plant to an existing off-grid supply will yield both cost and decarbonisation benefits.

Rising prices?

Market challenges are, however, expected to test the leading genset suppliers and distributors over the coming months and years.

Manufacturers are currently being affected by global material and logistics cost hikes, plus supply chain bottlenecks, which could potentially hike prices for customers down the line. Indeed, logistics itself has always been a monumental challenge for all energy supply companies working in remote parts of the continent.

Bolloré Transport & Logistics recently delivered a 64 ton electrical transformer as part of the construction of a thermal power plant in Zinder, Niger, all the way from Benin.

It meant carrying the giant shipment over a distance of 1,650 km from the Port of Cotonou, where it arrived via a ro-ro ship, across hazardous roads, and using police escorts, to its eventual Zinder home.

While renewables, cost pressures and climate concerns continue to redraw the gensets market and transform energy economics, in Africa, at least, some things never change. ■

Reliable generators fulfilling Nigerian demand

Daniel Roudaut, Nigeria national sales manager at Kohler Power Systems, explains why generator suppliers must have the right people, products and processes to service the demand of manufacturers in the West African country.

Nigeria has an incredibly diverse industrial base – with major manufacturing sectors including rubber, wood, textiles, food and drink products, ceramics, and steel, to name but a few.

According to market insight platform Macrotrends, the total output from Nigerian manufacturers has risen steadily in recent times, standing at US$64bn in 2021, a 17.61% increase from 2020. Like many other nations around the world, future manufacturing expansion in Nigeria is restricted by global factors such as supply chain shortages and the fallout from the ongoing conflict in Ukraine. But overall, manufacturers have proved flexible, adaptable and resilient, and they expect to remain competitive over the medium-term.

The number of generator manufacturers in Nigeria has increased steadily in recent years.

Image Credit: Kohler

High demand for reliable generators

One anomaly of Nigerian industry is its reliance on generators to power machinery and production lines. Nigeria has only 23 power generating plants connected to the grid (a relatively low number for such a large country) and outages are common. According to the Lagos Chamber of Commerce and Industry, the national grid collapsed six times in the first half of 2022.

Subsequently, many manufacturers have taken the proactive stance of installing their own mission-critical power plants – with generators representing the most tried and trusted solution. Modern generators are powerful and reliable, and can run for extended periods under weather extremes such as high temperatures or heavy rain, allowing manufacturing work to take place across the day.

As a result of this dependency, generator sales have grown, with the diverse manufacturing sector adding to demand. According to market research specialists P&S Intelligence, Nigeria's genset market value will increase from US$445mn in 2021 to US$806mn by 2030.

Meeting customer demands

So, what impact has the growing demand for generators had on the supply base for such equipment in Nigeria? For one, the number of generator manufacturers has increased steadily in recent years, but the means of supplying the market differs dramatically. There has been a growing expectation from end-users that generator manufacturers have a footprint in Nigeria, allowing them to reduce delivery lead times and offer improved customisation and after-sales services.

This trend is illustrated by Kohler's decision to open a new facility in Ikeja in Lagos, where generator assembly takes place. In a typical process, chassis, alternators, engines and control panels are combined, with varying degrees of customisation depending on end-user requirements. The assembly plant can produce generators with a broad range of power outputs which could be used for manufacturing applications in the largest industrial complexes.

Generators from 20 to 1,000 kVA are held in stock at the Lagos plant, with higher-output models available for larger projects. The generators are powered by engines from John Deere, Doosan and Volvo, Mitsubishi and Kohler's own KD Series and are ready to use from installation. The machines are designed for ease of maintenance, and parts are readily available to minimise any downtime.

Having boots on the ground

Local production facilities represent a long-term commitment to the Nigerian manufacturing sector and they deliver significant benefits in several crucial areas. Firstly, regional stockholding shortens procurement times – critical in manufacturing environments where downtime means lost production.

Local assembly plants also result in more knowledgeable employees, with core skillsets built over time. This expertise is beneficial when technical queries must be dealt with face-to-face.

Generator manufacturers are additionally looking to improve their service to the Nigerian manufacturing sector by developing more extensive distribution networks. The country is home to several large metropolitan areas but many sparsely populated rural regions with small manufacturing workshops also need access to reliable power.

Well-resourced distribution networks can help ensure that customers of all sizes receive high-quality service. Nigerian manufacturers expect a rapid response to any technical problems in the field, delivered by well-trained service engineers who can deal with issues without needing a return visit.

Long-term commitment

According to the Lagos Chamber of Commerce and Industry, Nigeria's Gross Domestic Product grew by 3% year-on-year in real terms in the first quarter of 2022, indicating the sixth consecutive quarter of positive growth. Manufacturing is likely to remain a central component of continued economic success and, within this, the well-established generator market is growing at a rapid pace.

However, generator suppliers cannot take their role in the Nigerian market for granted. Manufacturers expect global companies to be committed long-term to the country and have the right people, products and processes in place. Kohler is well positioned to meet this criterion and will continue to invest in delivering the best-in-class generators of tomorrow. ■

Meeting Libya's energy needs

Libya has strengthened its electricity system through the completion of the first construction stage of a power plant by MYTILINEOS.

Image Credit: MYTILINEOS

The first stage of construction was completed in spite of difficult conditions imposed by Covid-19.

MYTILINEOS, a leading Greek industrial and energy company active in metallurgy, power & gas, renewables & storage, and sustainable engineering solutions has a vast presence in Africa with various energy projects aiming to aid countries and institutions with substantial needs and offer unique solutions.

The company has recently announced that the first stage of construction for a power plant in Tobruk, Libya, has been completed and already 185MW has been made available and distributed to the country's electricity system.

The immediate solution coming with the commissioning of the facility built by MYTILINEOS is a major relief on the wider region of Tobruk, which has been going through a tough period over the recent years due to energy instability and many hours of power cuts. In fact, the company managed to carry out the project, based on the initial timetable set, under difficult conditions imposed by the Covid-19 pandemic, without compromising employees' health and safety.

Commenting on the completion of the plant's first construction stage, Kostas Horinos, director of power, LNG, gas, industrial, T&D at MYTILINEOS' SES Business Unit, stressed, "MYTILINEOS seeks to be part of the solution towards ensuring stability in the country's electricity supply sector. We are committed to staying in Libya to upgrade the daily lives of citizens, offering energy security and stability."

> "We are committed to staying in Libya to upgrade the daily lives of citizens, offering energy security and stability."
>
> KOSTAS HORINOS, DIRECTOR OF POWER, LNG, GAS, INDUSTRIAL, T&D AT MYTILINEOS' SES BUSINESS UNIT

A stable electricity system for future growth

Greece, as a member of the European Union, has been actively involved in the reconstruction of Libya, and MYTILINEOS has been offering, right from the outset, valuable know-how in the field of energy infrastructure.

MYTILINEOS is now recognised internationally as a company that responds to demanding international markets, with significant energy needs, consistently delivering high-quality projects. The contract value for MYTILINEOS now stands at US$400mn. ■

Aksa Power Generation connecting the world

A leader in the genset market, Aksa Power Generation is working hard to continue its development in Africa and the world.

Aksa Power Generation was founded as an electrical motor factory by Ali Metin Kazancı in 1968. After manufacturing its first generator in 1984, it soon became an expert in machinery and hardware for electrical energy supply. In 1994, the Aksa community became corporate under the name Kazancı Holding and reorganised, achieving its current structure. Aksa has been a leader in the genset market for a long period of time and is among Turkey's largest 100 industrial companies and exporters.

Aksa Power Generation manufactures gasoline, diesel, natural gas and marine generating sets ranging between 1kVA to 3.125kVA as well as lighting towers and generator hardware. It boasts three manufacturing facilities in Turkey, China, the USA and two trade centres in the Netherlands and UAE and is recognised as a leader and pioneer within the industry.

> "Aksa Power Generation, with its experience of more than 30 years, is working non-stop to continue its production in 178 countries of the world."

By continiously increasing its investments in technology, Aksa holds its position as a driver of progress by manufacturing more soundproof and environment-friendly generators with lower fuel consumption.

Aksa Power Generation manufactures gasoline, diesel, natural gas and marine generating sets.

Image Credit: Aksa Power Generation

The company has carried out many successful projects around the world with the solutions it offers to healthcare, construction, mining, data centres and many other industries. In regards to data centre power systems, Aksa Power Generation, as the first and only Turkish brand in the world, has been approved by the Uptime Institute for compliance with TIER III and TIER IV standards in 61 different models produced for data centres.

Empowering Africa

Aksa Power Generation, with its experience of more than 30 years, is working to continue its production in 178 countries around the world. Aksa provides uninterrupted services with its 24/7 service guarantee with 25 offices in worldwide.

Aksa South Africa, established on a total area of 3500 sq m and in operation since 2015, has more than ten personnel who are experts in their fields. They continually strive to ensure that the southern African region has sufficient access to electrical energy.

The company has stated that it is imperative it maintains its focus on development within Africa, especially in the southern region of the continent. There are many opportunities for investment in the field of energy in sub-Saharan Africa, most notably with the industrial sector experiencing a serious spurt in the region (especially in in South Africa).

The country boasts an historical expertise in industry and the demand for generators is being driven by the appetite to maintain this while coping with insufficient electrical infrastructure. Fortunately, Aksa Power Generation is at hand to meet this market demand and ensure the region is well served for all its genset needs. ■

The Last Mile Connecivity Project aims to connect more of Kenya's households to power.

Image Credit: Adobe Stock

Bringing power to the people

Mwangi Mumero reports on the programmes being pursued by the various governments of East Africa to connect their citizens to electricity.

In Isara, a remote trading centre in Imbuko in the expansive Kajiado County, which borders Tanzania, locals can now enjoy watching their favourite television shows, charge their mobile handsets and store food in refrigerators.

Artisans from all over Kenya have also flocked to the township seeking business opportunities in metal works such as making windows and doors using grills – something that could not have previously happened in this area.

"It is a new dawn for us. Previously, even shaving has been manual. We now can enjoy all the services other Kenyans across the nation have. Businesses that require electricity are also thriving creating opportunities for our youth," observed Kirrinkai Sankaire, a local resident.

This transformation in rural townships and homes has been a result of the Last Mile Connectivity Project by the Government of Kenya in partnership with the African Development Bank (AfDB).

Launched in 2017, AfDB has supported the project with a loan of US$135mn and it has seen thousands of homes, schools and trading centres – which were previously off grid – connected to electricity for the first time.

The project targeted to connect 47% of the population to the national grid and connect 300,000 households to power by the end of 2022. These are the mostly low-income and rural populations whose economic prospects would benefit significantly from access to power.

"Access to electricity is a right of every citizen and we owe it to ourselves to provide electricity for all. The project might not be profitable but it is a social obligation," said George Tarus, KPLC manager for the Last Mile Connectivity Project.

The project aims at boosting household connections to the national grid by increasing the number of distribution transformers and by connecting every household within 600 metres.

Already, the Kenya Power and Lighting Company has been using its 45,000 distribution transformers across the country to ensure that everyone within 600 metres gains from access to electricity.

The impact of these connections is being seen and felt across this East African nation.

"School children can now do their homework without straining their eyes. We are also able to bulk and cool raw milk in the evening for sale the following morning – boosting our incomes," said Charles Cheruiyot, a resident of Mogogosiek area in Kericho County, Western Kenya, after recent connection through the Last Mile project.

As a result of the project, Kenya's electrification rate hit 75% in early 2021, up from 53% in 2016.

Two years ago, AfDB extended a second loan to connect at least 285,000 additional individuals and 15,000 businesses via low voltage lines and transformers.

"Overall, the project was found to be effective in increasing access to electricity for the beneficiaries," observed Eustace Uzor, an evaluation officer at the AfDB on the Kenyan project.

However, according to Uzor, for the sustainability of projects to continue benefiting households and businesses, reliability and demand for the productive use of electricity is critical for future electrification projects.

> "Access to electricity is a right of every citizen and we owe it to ourselves to provide electricity for all."
>
> **GEORGE TARUS, KPLC MANAGER FOR THE LAST MILE CONNECTIVITY PROJECT**

Considering sustainability

In the recent past, Kenya has invested heavily on renewable energy sources – mainly wind and solar – to ensure self-sufficiency in coming years.

Renewable energy currently accounts for 73% of Kenya's installed power generation capacity while 90% of electricity in use is from green sources among them geothermal, wind, solar and hydro-electric installations, according to Energy Regulatory Authority.

For instance, the recently completed 310MW Lake Turkana wind power project has helped curb power outages across the country, as demand soars. The wind project in northern Kenya has 365 wind turbines – each with a capacity of 850kV. The farm also has a high voltage substation.

The wind farm is connected to the national grid at Suswa substation, located about 80 km west of Nairobi, through a 428 km long double-circuit 400 k transmission line.

The wind farm produces low-cost energy – approximately 17% of Kenya's installed capacity.

The US$858mn wind farm was developed by the Lake Turkana Wind Power (LTWP) consortium comprising a number of global firms.

The Lake Turkana Wind Power project comprises 356 wind turbine generators.

Image Credit: LTWP

Tanzania follows suit

On its part, Tanzania has also rolled out a rural electrification programme for its citizens. Last year, the country connected more than 12,000 villages in the country as part of the Rural Electricity Project.

"We have reduced the price of connection from US$214 to US$12 which is quite affordable to rural people," observed Hassan Abbas, Tanzania government spokesperson.

In rural areas, households connected to electricity accounted for 24.5% in 2019/20 period compared to 16.9% in 2016/17 fiscal year. This is why the Government of Tanzania plans to increase rural connection levels to 50% by 2025 and at least 75% by 2033.

In the last couple of years, funding for rural electrification projects in the country has come from development partners, notably the European Union, African Development Bank (AfDB) and the World Bank.

According to Tanzania Electric Supply Company (TANESCO), the country has a total power installed capacity of 1,602MW which comes mostly from natural gas (48%), hydro (31%) and petrol (18%). The country also imports power from Uganda, Zambia and Kenya.

The Tanzanian Government has placed emphasis on developing renewable power, especially in areas where there is no connectivity to the grid. For instance, in 2021, hydropower met around 28.4% of the country's annual generation.

It is also developing other forms of renewable energy such as solar which accounted for 20.9% of power generation in 2021.

Uganda ups its effort

On its part, Uganda has also been intensifying efforts to connect its rural populace to power across the country.

Currently, a least 300 sub-county headquarters across 91 districts in Uganda are getting connected to power through a US$212mn loan secured by the Government from the EXIM Bank of China.

All service centres along the power lines will also benefit from this rural electrification project.

Implemented under the Rural Electrification Program by the Ministry of Energy and Mineral Development, the project is being carried out by TBEA, a Chinese firm.

"At least 170,000 last mile connections are expected under this project that will consist of more than 10,580 km of electricity network and 1,926 transformers installed in the districts," observed Wegulo Byakatonda, manager, projects department in the Rural Electrification Programme in the Ministry of Energy and Mineral Development.

According to Uganda's Electricity Regulatory Authority (ERA), the country's installed capacity stood at 1,346.6MW in 2021, with hydro-electricity contributing the highest capacity at 1,072MW constituting 79.7% of the total capacity.

The massive Owen Fall Dam on the River Nile exit from Lake Victoria is a huge generator of electricity which is even exported to neighbouring East African countries such as Kenya and Tanzania.

Other sources such as thermal and bagasse cogeneration contributed 8.2% and 7.5% of the installed capacity. ■

East African governments are turning to renewables such as solar.

Image Credit: Adobe Stock

Hydrogen to trigger African growth

Africa is in a unique position to produce hydrogen at scale, according to Michael Stusch, executive chairman & CEO of H_2-Industries, and the fuel can be used by industry locally or exported, providing a valuable source of revenue.

Developing the hydrogen economy in Africa will provide local employment opportunities, significant economic stimulus and create a valuable export commodity that can be used to help other countries decarbonise their energy supplies. The geographic positioning of the continent is ideal for the location of renewable energy generation using wind or solar. Energy transformed from these sources can be used to create hydrogen, which can then be stored to provide a continuous electrical power supply or used directly as an industrial feedstock.

Commentators are now widely recognising Africa's potential to play a leading role in a much-needed global energy transition. According to the 'Scaling Up Renewable Energy Deployment in Africa' report from IRENA, Africa can meet nearly a quarter of its energy needs from indigenous and clean renewable energy as early as 2030. And, with abundant natural resources, renewables are likely to turn out to be the most cost-effective option to the continent to meet regional energy demands.

Hydrogen from waste

As the world recognises the need to be more sustainable, technical research has been conducted to identify new ways to provide sustainable energy. One such area is the use of non-recyclable plastic and organic waste to provide clean hydrogen, or 'waste-to-hydrogen' as the technology is known.

H_2-Industries is currently poised to build the first waste-to-hydrogen plant in Egypt which will produce 300,000 tonnes of hydrogen each year at half the cost of current production technologies.

Why this is important to Africa? According to the African Union Development Agency (AUDA) sub-Saharan Africa alone produces approximately 17mn tonnes of plastic waste annually, which is often disposed of in open dumpsites. Consequently, plastic waste finds its way to rivers, lakes, and the ocean. But, this waste now has enormous value as a feedstock for waste-to-hydrogen plants.

By using waste to create hydrogen, Africa can provide a lead to the rest of the world in the generation of sustainable energy while addressing what (until now) has been an insoluble problem. Even though Africa produces less waste than other continents (according to the 'Africa Waste Management Outlook' published by the Council for Scientific and Industrial Research), rapid urbanisation means sub-Saharan Africa is set to become one of the most important regions in the world in terms of waste generation. And so, using plastic and other waste resources to produce clean hydrogen is a win-win scenario.

Image Credit: H_2-Industries

Michael Stusch is the executive chairman & CEO of H2-Industries.

The effective collection and processing of waste will, we perceive, become self-funded as what was previously viewed as an environmental problem and, in some cases, a nascent or actual catastrophe will, through advanced technology, allow it to play a key role in creation of an advanced, sustainable energy infrastructure.

Our waste-to-hydrogen process can create large amounts of clean hydrogen from organic waste, including non-recyclable plastic, agricultural waste, and sewage sludge, at a price that competing technologies simply cannot achieve. The clean hydrogen produced can be transported, stored, and released on demand for use in an array of applications that, with investment, will help Africa meet its decarbonisation targets, solve their energy problems and set a positive example to the rest of the world.

Meeting the challenges

Hydrogen produced by local waste to hydrogen plants can be used as a fuel to provide an electrical source when other renewable energy is not available. But to achieve this, clean hydrogen needs to be stored safely and potentially transported, and this, until recently, has been a challenge.

If hydrogen is stored as a liquid, it must be done at cryogenic temperatures under minus 253°C or in gas form which is very dangerous and also very expensive and all requires significant investment. Now hydrogen can be stored and transported using liquid organic hydrogen carriers (LOHC), which are organic compounds that can absorb and release hydrogen through chemical reactions.

LOHCs can be used as storage media for hydrogen. The waste-to-hydrogen process chemically binds the hydrogen in the LOHC proprietary fluid. Stored at ambient conditions, environmentally friendly (emission-free) LOHCs are non-flammable and make handling, storing, and transporting hydrogen safe and cost-effective by using the existing infrastructure. The LOHC can be charged and discharged, infusing, and releasing hydrogen as often as needed. Furthermore, LOHCs can use existing diesel transportation infrastructure and safely store hydrogen for long periods without loss.

Powering local communities

While Africa is embracing new renewable generation technologies, much of the current electricity generation is produced by coal, natural gas, or oil-fired power stations, accounting for about 70% of Africa's total electricity generation today. To date, conventionally generated power attracts far more funding than renewables, but that is changing. The cost of renewable energy equipment has reduced rapidly in recent years. As such electrical power produced by Africa's massive solar and wind resources has reduced the cost per kWh to the point where it is much more cost-effective than traditional power sources.

With abundant sunshine, African nations have a tremendous opportunity to tap into this

renewable energy source. Photo voltaic (PV) plants built in Africa have excellent capacity factors, and, of course, using the renewable energy generated is most efficient if used locally. However, solar energy cannot be produced at night and integrating solar energy into the grid can be difficult without a reliable base load generation source. By using renewable energy or waste to produce hydrogen, baseload power generation can be maintained through the hours of darkness. The hydrogen can be used directly as a feedstock for hydrogen-fuelled generators, or hydrogen released from LOHC can be used to power fuel cells for more local electric power supply. Again, surplus hydrogen production can be stored or exported as LOHC, a revenue stream that could be used to enhance infrastructure and other projects.

Hydrogen generation projects will boost economic activity and foreign investment and provide local employment opportunities. For instance, a hydrogen project in Namibia is expected to generate 15,000 jobs during its four-year construction plan, with an additional 3,000 permanent jobs for its operation. More than 90% of these jobs are expected to be filled by local workforces.

Image Credit: Hy-Industries

New advancements mean waste can be used as a feedstock to produce hydrogen.

Decarbonisation and more

Hydrogen production in Africa not only offers a solution to reduce emissions that are harmful to the environment but also presents an effective waste management solution, a way to lower energy costs, and a pathway to stimulate economic activity in the region. There is clear potential for waste to hydrogen plants which have the advantage of converting non-recyclable plastic and organic material to clean hydrogen. With waste becoming a valuable commodity, waste collection and processing can be funded, creating a virtuous energy creation circle that is sustainable.

Africa, due to its abundant resources, can play a pivotal role in our battle for a safe and prosperous future. The development of proprietary technology for waste to hydrogen production and LOHCs is generating much interest and attracting significant investment interest. Africa may well be leading the world, helping us tackle climate change, waste management, and energy security for the future. ■

MENA'S GREEN STEEL OPPORTUNITY

A recent report published by the Institute for Energy Economics and Financial Analysis has highlighted how the Middle East and North Africa (MENA) region is in a prime position to use green hydrogen to reduce emissions in the steel sector.

The report notes that the region can lead the world if it shifts to renewables and applies green hydrogen to the steel sector. With MENA's sector dominated by direct reduced iron-electric arc furnaces (DRI-EAF) technology there is an opportunity to switch to green hydrogen and electric arc furnaces powered by renewables.

Soroush Basirat, author of the report, explained, "Compared to other regions, MENA's existing DRI-EAF capacity means no extra investment is needed for replacing the base technology. All new investment could be focused on expanding production of green hydrogen among other renewables.

Image Credit: Adobe Stock

MENA is reportedly well placed to lead the world in green steel production.

"A switch from gas-fuelled DRI to green hydrogen could commence ahead of other regions, given MENA's in situ capacity of DRI-EAF. Initially, it would be possible to replace 30% of gas with hydrogen in the incumbent fleet of DR plants without any major equipment modifications. The region could then move towards 100% green hydrogen to produce carbon-free steel," Basirat added.

With MENA having one of the highest photovoltaic power potential capacity globally, the region is well placed to lead the world in green steel production.

"With ample renewable energy potential, the region could become a leader in hard-to-abate and carbon intensive industries, specifically steel."

African Farming and Food Processing

THE MAGAZINE SERVING AFRICA'S AGRICULTURAL COMMUNITY

Bi-monthly issue contains a mix of editorials devoted to sustainable development, market intelligence, products, techniques and innovations across agricultural sectors, as well as coverage of all the major exhibitions and trade events

REACH KEY BUYERS AND SPECIFIERS ACROSS AFRICA THROUGH PRINT AND DIGITAL ADVERTISING

12,000+ monthly readers

NEWSLETTER

23,500+ circulation

post@alaincharles.com www.alaincharles.com

www.africanfarming.net

Alain Charles Publishing

A critical component of Africa's energy potential

Chris Antonopoulos, CEO of Lekela, describes how the continent is on a strong growth path to realising its huge wind power potential which will be crucial for its future development.

Image Credit: Lekela

The West Bakr Wind project, Egypt, is expected to produce more than 1,000GWh per year.

African Review (AR): How is the industry reacting to the post-Covid environment and what was the mood at Africa Energy Forum (AEF) from your perspective?

Chris Antonopoulos (CA): AEF this year focused on the opportunity that renewable energy presented for Africa. We all know that the importance of renewables is only growing: both for decarbonisation and the development of new green industries, but also as an affordable, reliable source of energy.

> "With the world's largest free trade area, a 1.2 billion person market and highly favourable demographics, the African continent is on a strong growth path."
>
> CHRIS ANTONOPOULOS, CEO OF LEKELA

Worsening climate impacts and the sharp rise in fossil fuel prices we have seen this year only add further urgency to the debate. It's my view that we need to capitalise on this opportunity now, and put Africa at the centre of building the world's sustainable future.

AR: What are some of the challenges associated with delivering wind projects on the continent?

CA: The key challenge in delivering on Africa's huge energy potential is securing investment. Africa is still falsely seen as a risky investment by many developers of clean energy and other climate-friendly technologies. Instead, much of this investment is directed to other growth markets, such as South America and Asia.

But with the world's largest free trade area, a 1.2 billion person market and highly favourable demographics (the proportion of people under 25 is far higher than most places in the world), the African continent is on a strong growth path.

AR: How have you achieved success here?

CA: A large part of our success comes down to working closely with all our partners, including the governments of the countries where we operate. It is encouraging to see how many African nations have recognised that clean energy is the future, and are committing to scale up renewables as a share of their energy mix.

It is not just governments either, we collaborate with the communities in which we operate to ensure everyone is bought in. Our approach for every wind farm is to work closely with local people, groups and the environment, to ensure we're implementing projects and plans that suit their needs. It has been great to see how the local women's association in Taiba N'Diaye, Senegal, is using the marketplace we helped to build, and how our migratory birds monitoring programme in Egypt is protecting local wildlife.

> "Renewables, including wind, can ensure that development is sustainable and affordable."
>
> CHRIS ANTONOPOULOS, CEO OF LEKELA

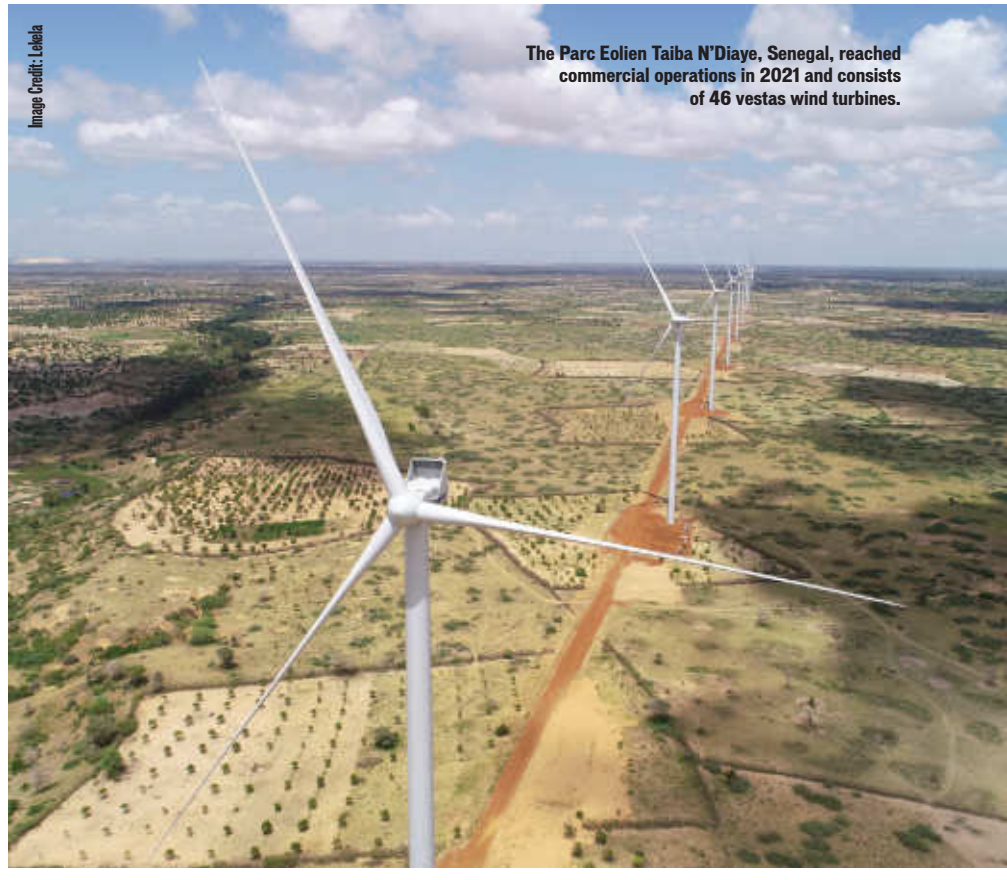


Image Credit: Lekela

The Parc Eolien Taiba N'Diaye, Senegal, reached commercial operations in 2021 and consists of 46 vestas wind turbines.

AR: How big a role do you envision wind having in Africa's future energy landscape and in its electrification?

CA: Wind power could – and should – play an important role in Africa's energy potential. Wind resources are abundant: according to the IFC, more than 59,000MW of wind power could be installed in Africa. Wind and solar power are also the most competitive form of generation in most countries in Africa, lower than the grid's marginal costs in many places.

Electricity is crucial for development. Renewables, including wind, can ensure that this development is sustainable and affordable.

Once again, investment will be vital for turning this potential into reality. In fact, in order to achieve Africa's climate and investment goals, the volume of investment must quadruple over the next 5-10 years.

Some African countries are meeting this challenge exceptionally well, such as South Africa, Egypt and Morocco. Other countries can and should seek to replicate these successes to scale up their renewable usage quickly and effectively.

Image Credit: Lekela

Chris Antonopoulos is the CEO of Lekela.

AR: How can wind play a role in the future hydrogen economy and how big an opportunity is this for the continent?

CA: Green hydrogen presents both a significant challenge and opportunity. To achieve the Paris Agreement targets by 2050 we need to significantly increase the amount of green hydrogen being produced, as it has a vital role in decarbonising industries such as aviation, shipping and manufacturing.

If we want to produce competitively priced green hydrogen, we need low-cost electricity. Therefore, cheap wind and solar power are needed. Given the level of renewable resources available in Africa, the continent has a huge role to play in the future of green hydrogen. Most of the hydrogen produced in Africa and the Middle East is exported outside the continent. As the market grows, I believe it will be those countries that have delivered on ambitious renewable energy programmes that are best placed to play a role in this market.

The opportunity for the development of hydrogen projects in Africa is huge. Whilst we don't expect the market to become significant until 2030-50, it will be initial pilot projects established in the short term that demonstrate the viability of such projects on the African continent.

AR: What is next for Lekela?

CA: Over the past seven years, we have built Lekela into the largest pure-play renewables company in Africa. Our current portfolio includes over 1GW of wind power in operation, as well as an active pipeline of projects in development across the continent.

Everyone at Lekela is excited to have our new shareholders, Infinity and Africa Finance Corporation, on board. We are looking forward to seeing how they can help us in our next phase of growth, as we expand our portfolio and look into other forms of renewable energy and emerging technologies – which we're already doing by exploring technologies like battery storage at our wind farm in Senegal.

At our core, we'll continue delivering clean, reliable power for communities and countries across Africa, while ensuring we leave a positive impact on the communities where we operate. ■

TRINA SOLAR INTRODUCES NEXT-GENERATION PV TECHNOLOGY

Trina Solar, a leading global provider for photovoltaic (PV) modules and smart energy solutions, has announced the availability of the next-generation Photovoltaic Vertex Panels to the Middle East and Africa region.

Trina Solar's latest Vertex modules are the latest innovative upgrade to the 210 mm Vertex Technology platform with rectangular cells – the first-ever non-square cells – and a lower number of cells with better hotspot performance, producing both an optical and electrical performance of 2-3%.

The new Vertex 580W technology consists of next-generation PV cells that provide up to 580W maximum power output, 21.5% module efficiency and string power with high density interconnect technology. The new Vertex S Series provides up to 435W maximum power output,

Image Credit: Trina Solar

The module offers a 12-year product and 25-year performance warranty.

21.8% module efficiency and string power with high density interconnect technology.

The upgraded Vertex module's innovation lies in its high efficiency, better reliability and more energy yield. Its features include low voltage and high string power leading to reduced balance of system cost, and shorter payback time.

Multi-busbar technology ensures a better light trapping effect, lower series resistance, and improved current collection resulting in a model with a higher return on investment (ROI).

Antonio Jimenez, managing director and vice president, Middle East & Africa, Trina Solar, commented, "We are very excited to announce the availability of the new Vertex Series in the MEA region with even higher power output and efficiency, better reliability and lower cost. The upgrade to higher power and efficiency means an outstanding product experience and exceptional investment gains, delivering higher customer value and leading industry standards."

FLOATING ELECTRICAL SUBSTATION CONCEPT UNDER DEVELOPMENT

Saipem and Siemens Energy have signed a memorandum of understanding (MoU) to develop a concept design for a 500MW high-voltage alternating current (HVAC) floating electrical substation for use in offshore wind farms.

Floating offshore substations, installed in deep water, offer several advantages such as a lighter substructure, an easier and asset-light installation in challenging conditions as well as lower decommissioning costs.

Designed to operate in the most extreme environments with enhanced stability and the ability to be scaled up as required by clients, Saipem and Siemens Energy's floating offshore substation concept will be based on a proven semisubmersible substructure. It will address the industrialisation phase as it can be adapted to fabrication and assembly infrastructures. The floating substation could represent a tangible solution for reducing the levelised cost of energy (LCOE) of floating wind farms.

Saipem's expertise in the engineering of complex and sustainable offshore infrastructures, including floating solutions, will be combined with Siemens Energy's broad transmission portfolio to develop a cutting-edge, standardised and scalable technology.

Agustin Tenorio, vice president transmission systems at Siemens Energy, surmised, "The new joint solution will significantly optimise critical technical parameters, such as weight, electrical efficiency, and asset longevity, thus lowering the production costs and enabling an unprecedented number of countries to benefit from large-scale offshore wind generation."

Sharp expands PV portfolio

Sharp has added a black-framed 410W monocrystalline PERC silicon photovoltaic panel to its half-cut cell portfolio – the NU-JC410B.

The lightweight NU-JC410B module is built with a white backsheet and a black frame. It is suitable for long and short frame side clamping and is designed for residential, small-scale commercial and industrial rooftop installations. The low weight, compact dimension as well as the mounting flexibility make this module easy and comfortable for handling, installation and overall system integration.

With an efficiency of 21%, the NU-JC410B's low temperature coefficient of -0.341%/°C ensures higher performance at high ambient temperatures, which is becoming increasingly important because of climate change and the resulting rise in temperatures.

The new module is built with M10 wafer (182 mm) half-cells. 10 busbar technology using round ribbons increases the power gain from each cell and makes them less sensitive to microcracks, thus offering higher module reliability.

All Sharp half-cell modules have three small junction boxes instead of just one, each fitted with one bypass diode. These junction boxes transfer less heat to the cells above and, in turn, boost the longevity of the panels and the overall performance of the system.

The panel is equipped with the original MC4 connector, which makes it compatible with most mainstream optimisers, inverters and mounting systems.

Andrew Lee, sales director EMEA SHARP Energy Solutions Europe, said, "With the new black-framed half-cut cell NU-JC410B panel, we are expanding our product portfolio with a module for easy handling and installation for residential and small-scale C&I rooftop installations, which offers high performance and reliability."

The NU-JC410B meets the requirements for easy residential, small-scale commercial and industrial rooftop system installation and system integration.

Image Credit: Sharp

Construction on schedule at Abujar Gold Project

Image Credit: Tietto Minerals

CIL tank construction.

Tietto Minerals, a West African gold explorer and developer, has provided a construction update for its Abujar Gold Project in Côte d'Ivoire.

Located 30 km from the city of Daloa in Côte d'Ivoire, the Abujar Gold Project is close to good regional and local infrastructure to facilitate exploration and development. The project is comprised of three contiguous exploration tenements with a total land area of 1,114 sq km, of which less than 10% has been explored. Tietto has estimated a life of mine revenue of US$2.87bn at a US$1,700/oz gold price which could help it achieve payback within a year of first production.

The company has noted that construction on the project is on track with first gold expected to be delivered within Q4 2022. CIL tanks have been completed and handed over to the SMP contractor to complete structural steel erection and all heavy lifts for the SAG mill were completed with gear alignment now begun.

Site works continue on multiple fronts with progress being made on the substation, site buildings, tailings storage facility and diversion channel.

Marking the next steps on the project, Tietto has completed a two-tranche placement to accelerate the site's development and has also entered into a binding placement agreement with Chifeng Jilong Gold Mining Co. Ltd. Subsidiary Chijn International to raise more funds.

Tietto aims to complete 100,000 m of drilling this year with a fleet of eight company rigs in operation while it advances its construction of the process plant and associated infrastructure.

Caigen Wang, managing director of Tietto, commented, "We have no debt and are fully funded to production at Abujar, which has potential to be one of the largest gold producing mines in Côte d'Ivoire, with an expected production of more than 260,000 ounces of gold in the first year and 1.2mn ounces of gold in the first six years."

Image Credit: Tietto Minerals

Site work is continuing on multiple fronts but construction is on schedule.

bauma to bring out industry's best

From 24-30 October, bauma 2022 is returning to the Trade Fair Center Messe München, Germany, to showcase all things construction and mining.

This will be the 33rd edition of the world-leading trade fair and it comes with high expectations after the last one – held in 2019 – which welcomed more than 620,000 visitors through the door and received a high approval rating.

At bauma 2022, a comprehensive and diverse supporting programme with many different formats will see established companies, start-ups, associations and research institutions present ground-breaking solutions and discuss the top current trends shaping construction and mining projects.

At the new Innovation Hall LAB0 keynotes, podium discussions, exhibitor presentations and individual talks will explore the most pressing issues facing businesses today and serve as a platform for thought leadership and knowledge transfer.

Image Credit: Messe München

The development of autonomous construction machines is among the main goals of the industry and many aspects of this will be discussed at bauma.

Alongside the Science Hub, Start-up Area, and Machines in Construction 4.0 stand in the Innovation Hall LAB0, the bauma Forum will run from 24-28 October. Each day will be dedicated to one of the event's five key topics including: construction methods and materials of tomorrow; the way to autonomous machines: mining – sustainable, efficient, reliable; digital construction site; and the way to zero emission.

This supporting programme, which also includes facets such as the International bauma Innovation Award and the THINK BIG! Career event for students, will ensure that everyone who attends will come away with the most up-to-date information and opinions shaping the working environment today.

The beating heart of bauma 2022, however, will be the enormous exhibitor area which will place visitors at the centre of the international construction, building materials and mining machinery industry. This year, attendees will get the chance to investigate products and solutions which are being displayed by more than 3,000 exhibitors from 58 countries and receive unique insights into the promising technologies driving these critical industries forward.

The following is a selection of some of the products on display from top exhibitors at bauma this year. ■

CATERPILLAR DISPLAYS DIVERSE RANGE

Under the theme 'Let's Do The Work', Cat construction equipment will be displayed by Cat dealer Zepplin and will highlight the broad range of technology, services and sustainability solutions offered by the company.

For instance, the exhibition will show the Cat Grade with Assist for excavators, which uses machine position sensors and operator-defined depth and slope parameters to automate boom and stick movements for more accurate cuts with less effort to help increase operator efficiency. The Cat Productivity provides a complete overview of machine and jobsite production to deliver consolidated and actionable site-level information to analyse performance and improve productivity.

At the trade fair, visitors to Cat's stands will also have the chance to learn about the company's services solutions including VisionLink to help increase uptime and maximise profitability; Cat Equipment Management for tracking equipment location and hours and monitor machine use health and emissions; and the new cloud-based Cat Service Information System (SIS) offering convenient, intuitive online and mobile capabilities for ordering parts.

In terms of equipment, the exhibit will include different model platforms on offer to effectively meet a broad range of customer needs and applications. Highlights include nine next generation Cat mini hydraulic excavators all delivering increased performance, higher breakout forces, longer service intervals and lower owner and operating costs compared to prior models. These will line up alongside the recently introduced Cat 906, 907 and 908 compact wheel loaders complete with the new Cat 2.8 engine with an upgraded drive and powertrain and exclusive technologies to improve operator experience.

Image Credit: Cat

The Cat 908 Compact Wheel Loader.

The range of construction equipment on display will be complemented by dozens of attachments available such as hammers, sheers, grapplers, couplers, buckets, smart dozer blades, augers, demolition grapples and tiltrotator systems.

Team members from Cat Financial will be on site to discuss the latest leasing and financing programmes as well as extended protection packages to help secure customers' investments and help them make the right decision to support their business.

Bell Equipment aims to keep it special

As an Articulated Dump Truck (ADT) specialist, Bell Equipment has always strived to meet customers' needs by delivering specifically-designed industry solutions. In Munich, this will be demonstrated by the new generation of the two-axle ADT Bell B45E 4x4, which offers compelling advantages to customers with specific requirements.

Image Credit: Bell Equipment

Thanks to standard bin heating and a high chute, the Bell B45E 4x4 dumps safely in rough terrain.

The second-generation Bell B45E 4x4 (41t) is aimed at small- to medium-sized quarry operations where it competes against rigid trucks in the 45- to 55-tonne class or 6x6 ADTs with payloads of 40 tonnes or more.

In wet weather, conventional 4x2 rigid tippers quickly reach their limits, but the all-wheel drive and oscillation joint of the Bell B45E 4x4 ensures high traction, and the retarder and service brakes can be applied in a very controlled manner even under full load thanks to constant ground contact by all tyres. In addition, the Bell B45E 4x4 can be used in overburden or new excavations. While this machine does not excel in soft underfoot conditions like its 6x6 counterpart, its twin-tyred single rear axle brings substantial advantages over 6x6 ADT tandem axles on hard roads. Greater manoeuvrability is achieved thanks to the shorter rear chassis, which, together with the rock bin typical of quarries, results in faster cycles on the quarry faces or at the primary crusher. The Bell B45E 4x4 has benefited from a number of changes incorporated after customer feedback such as a suspended rear axle and heavily modified bin, and operators will enjoy the standard package of driver-related assistance systems such as Hill Assist to ensure productivity and safety in equal measure.

The machine will be on display alongside other models from Bell Equipment and information on the programme-wide further development of its current E-series.

GORICA MIXER LINE OFFERS KEY ADVANTAGES

Gorica Group is an industry-leading developer and manufacturer of a complete range of transit cement mixers, cargo trailers, semi-trailers, fuel/water/sewage/jetting tankers, dry bulk tankers, aluminium tankers, municipality equipment, oil field equipment along with pressurised vessels, refrigerated semi-trailers and frigo bodies.

Gorica's transit cement mixer line includes models of 8 cu/m, 9 cu/m mounted on 6x4 chassis and 10 cu/m, 12 cu/m and 14 cu/m mounted on 8x4 chassis. Gorica notes that competitive advantages of its mixer line include:

- Largest mixer drum volume in the industry
- Highest geometrical volume in the range of 12 cu/m mixers
- Highest water line volume in the industry
- 2K gloss high corrosion resistant painting
- Back and rear protection plates made of aluminium reducing stress and weight
- Industry strongest rear pedestal.

Image Credit: Gorica

Gorica transit cement mixer with 9 cu/m capacity.

WIRTGEN TO WELCOME WORLD PREMIER

At bauma this year, Wirtgen will be introducing to the world the SP 20(i) offset paver designed to offer customers the ideal combination of productivity and mobility.

Typical applications of the SP 20(i) offset paver include the production of concrete safety barriers with a height of up to 2 metres and the paving of flat surfaces with widths of up to 2.5 metres. Despite the large paving widths and heights it offers, the machine has a low transport weight and compact dimensions.

Also in Munich, Wirtgen will highlight the compact SP 15(i) which has been delivering in a wide range of application scenarios around the world for many years. This enables the automatic paving of lowered curb profiles, e.g. for access to driveways. The paving process can proceed without interruption and the need for manual reworking is significantly reduced.

Image Credit: Wirtgen

With lifting columns connected directly to the chassis, the application-optimised configuration of the SP 20(i) enables efficient paving of monolithic concrete profiles with a height of up to 2.0 m or concrete surfaces with a maximum width of 2.5 m.

In addition to the machines, the company will be showing a complete paving train for fully reinforced concrete paving. This consists of a WPS 102(i) placer/spreader, an SP 94(i) inset paver and a TCM 180(i) texture curing machine. Also making an appearance at the show is an SP 124(i) with a new, integrated dowel bar inserter.

All compatible machines at the show will also feature Wirtgen's specially-developed AutoPilot 2.0 control system for stringless paving that serves as an alternative to the conventional method of mechanically scanning a stringline.

NUMEROUS INNOVATIONS BROUGHT BY BAUER

BAUER and its subsidiaries (such as Klemm) will treat attendees to products provided by the core area of the company's rotary drilling rigs, the MC series duty cycle crawler cranes, diaphragm wall technology, and more.

The largest drilling rig on display is the BG 45. With V-kinematics, it offers maximum rigidity for heavy applications and a high degree of variability in the mobilisation phase with a transport weight of approximately 35 t for the heaviest individual component. At bauma, the unit will be exhibited with a soil mixing technology equipment package: the Single Column Mixing-Double Head (SCM-DH).

At the other end of the spectrum, the smallest drilling rig on show will be the BG 23 H, a compact machine with H-kinematics. The device can be completely mobilised and loaded using the radio remote control and compact design to make transportation to city construction sites achievable. However, compact does not mean weak. In Kelly mode, a powerful 235 kNm is available for driving in the drill pipes and, with the Crowd Plus assistant, up to 400 kN retraction force can be activated for pulling drill pipes.

Image Credit: BAUER

KLEMM Bohrtechnik GmbH is presenting a total of four drilling rigs from the KR series at Bauma.

Keestrack shifts to zero drive

Keestrack has placed sustainability at the heart of its bauma exhibition in 2022 by focusing on its e-drive equipment.

The company's e-drive range can run plugged into the grid or can be run by the on-board generator. The crushers, screens and stackers can all be connected to each other, resulting in even bigger savings.

Compared to conventional diesel-hydraulic units, diesel-electric driven plants directly save up to 40% of fuel. While working in production trains, the attributable fuel consumption may even decrease by 70% when the hybrid screens and stackers are powered directly via the plug-out supply of an upstream or downstream diesel-electric crusher.

Image Credit: Keestrack

The Tracked Apron feeder A6.

The ZERO drive equipment do not have a combustion engine on-board, only electric motors, resulting in high efficiency with low energy requirements and little maintenance. The R3e, K4e, K5e, K6e, K7e, S5e, B5e and the new Tracked Apron feeder A6 are available in ZERO-drive. These will be on show at bauma 2022 alongside other products such as the newly designed I4e tracked mobile reversible impact crusher with an advanced diesel-electric drive concept.

SOLIMEC PRESENTS NEW DISPLAY LAYOUT

After three challenging years, Solimec has decided to present itself with a renewed display layout, focusing on its customer and their needs. The equipment on display will underline the distinctive features of the products that characterise the current Solimec range; streamlined and implemented with the latest technical updates.

This runs true in the Blue Tech line for drilling rigs complete with energy-saving architecture to ensure the best performance while reducing fuel consumption.

Image Credit: Solimec

The Blue Tech line for drilling rigs has been developed with an energy-saving architecture.

Meanwhile, the Hydromill line will be lead by its flagship SC-135 Tiger equipped with the HDD system, platform with drums on the machine body, a solid structure and a Caterpillar C27 engine capable of delivering 708kW power required to work in demanding conditions. At bauma it will be on display equipped with the new Solimec SH-35 excavator module. 12 instrumented flaps ensure precise verticality while a new mud pump, hydraulic compensators with improved flow rate and hydraulic fittings for connecting the motors are some of the developments installed on the equipment. Alongside these, there will also be a display of the micropile machines and an area dedicated to digitalisation, control and training.

Liebherr returns in full force

There is plenty to see among the plethora of Liebherr equipment, technology and innovations spread over its 14,000 sq m of exhibition space.

Hoisting work can be completed quickly and safely using the 258 HC-L 10/18 Fibre (front left).

From an overview of Hydrotreated Vegetable Oils now being used as an alternative fuel in the majority of Liebherr machines to the digital platform comprising products to support assets, operations and maintenance activities, Liebherr is certainly turning out in force.

One of the showstoppers on display is Liebherr's first hydraulic luffing jib crane which will be unveiled at the show. The 195 HC-LH 6/12 can hoist up to 2550 kg at the jib head at its maximum radius. The hydraulic luffing jib crane achieves these values when combined with the climbable 16 EC tower system which boasts dimensions of 1.6 m x 1.6 m, meaning it has a very small footprint and can be transported easily to the site by truck or container. Slimline tower systems, great hook heights, high performance and climbable – this complete package makes Liebherr's hydraulic luffing jib crane unique.

Liebherr has also unveiled that, for the first time, HC-L and EC-H series cranes will now be available in fibre versions – the crane for special projects, the 1188 EC-H 40 Fibre, and the luffing jib crane, the 258 HC-L 10/18 Fibre. The high-tensile fibre rope for large cranes has a diameter of 25 mm which is a significant weight difference compared to a steel rope of the same dimensions, making the new fibre crane able to operate at even greater efficiency.

AQUAJET'S FULL LINE OF HYDRODEMOLITION ROBOTS

Aquajet, a global leader in the design and manufacturing of hydrodemolition technology, will showcase its full line of hydrodemolition robots at bauma.

At its stand, attendees can view the new Aqua Cutter 750V with patented Infinity Oscillation. The 750V features the next generation Evolution 3.0 Control System that boasts new functions to make operators' lives easier, including the ability to automatically calculate optimal settings for lance motion for greater precision and efficiency. Like all Aqua Cutter robots, the 750V cleans and descales rebar without causing microfracturing and maintains exceptional horizontal, vertical and overhead reach, making it suitable for a wide variety of concrete removal tasks, such as renovation and bridge and road repair.

The 750V will be on display alongside the Aqua Cutter 410A, Aqua Cutter 410V and Ergo compact hydrodemolition robot. The company will also highlight several accessories that increase versatility.

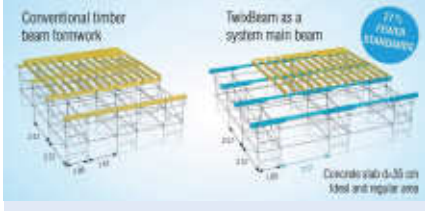
The Aqua Cutter 750V.

LAYHER TARGETS VERSATILITY

The desire to innovate is a long standing tradition at Layher and with the new aluminium TwixBeam, the company's portfolio has been extended to include a versatile, high-strength solution.

The supplementary component consists of two 200 mm-high perforated aluminium U-sections bolted to one another. The components are between 0.80 and 6.60 m long and their lightweight aluminium design speeds up assembly and makes them easier to use in cramped conditions. Thanks to this innovation, scaffolding constructors can erect a wide range of economical structures at the building site from conventional support beams and suspended scaffolding through to use as a system main beam in combination with Allround Shoring TG 60.

Image Credit: Layher



With the TwixBeam, the Layher portfolio has now been extended to include a versatile, high-strength solution.

TwixBeam's load-bearing capacity is much greater than that of timber beam formwork, making it possible to improve load transmission while simultaneously reducing materials consumption and assembly effort. The result is that fewer shoring towers are needed. This saves time during transportation – as well as during assembly and dismantling.

BOBCAT DEBUTS MEA PRODUCTS

Being shown for the first time at bauma is Bobcat's new MEA products including the 5000 and 600 Series compact loader models.

As well as the best-selling S550 and S630 models, the eight new machines include the S510/S530/S570/S590 and S650 skid-steer loader and the T590 compact track loader.

The new 500 and 600 Series loaders provide operators with increased performance, enhanced comfort and optimised maintenance requirements to maximise job site efficiency.

In the new S510 and S530 models, a move to the well proven Kubota V2403 engine improves overall machine performance and meets stricter emission regulations. In the new S550, S570, S590 and T590 models, power is provided by the Kubota V2607 interim engine while the new S630 and S650 skid-steer loaders are powered by the dependable Kubota V3307 interim engine.

In all the new models, the Cloth Suspension Seat option is available to improve operator's comfort in hot weather and other features are available including cushioned lift and tilt cylinders to increase productivity as well as comfort.

Image Credit: Bobcat

The S550 radius lift path loader.

The new loaders can be equipped with the option of Versatile Duty Tyres, with a bi-directional design for use on most common mixed surfaces, improving lifetime significantly and Industrial Solid Flex Tyres are also available as an option.

VÖGELE'S NEW GENERATION OF ROAD PAVERS

bauma 2022 will serve as the stage for the world premiere for Vögele's first road pavers and screeds of the new Dash 5 generation: the SUPER 1900-5(i) and SUPER 2100-5(i) Highway Class pavers and the latest-generation AB 500 and AB 600 Extending Screeds.

Most details of the Dash 5 generation are being kept under wraps until the fair begins, however Vögele has confirmed the new generation will feature reduced setup times, improved logistics, greater machine availability and the optimisation of the automation of processes with assistance and control systems.

Image Credit: Vögele

Vögele has said user requirements is a key focus.

World's first fossil-free steel by SSAB

Nordic steel producer SSAB will exhibit a piece of its fossil-free steel at bauma.

The first steel plate was produced with hydrogen reduced sponge iron in August 2021 and delivered to Volvo Group. At bauma this year, a cut-off of that steel plate will be on display and SSAB's sustainability experts will be on hand to explain the unique HYBRIT technology and how fossil-free steel can be used as a platform for creating end-customer products to help eliminate greenhouse gas emissions.

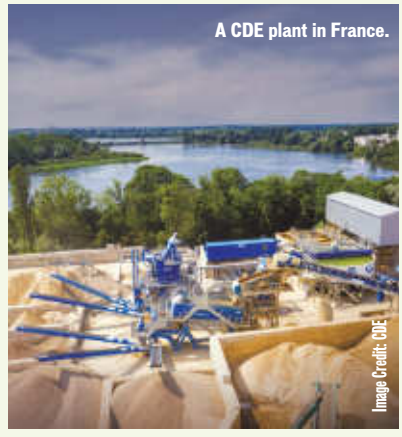
With HYBRIT technology, SSAB is aiming to replace coking coal – traditionally needed for ore-based steelmaking – with fossil-free electricity and hydrogen. Volvo CE recently became the first manufacturer in the world to deliver a construction machine to a customer using the fossil-free steel in the form of the A30G articulated hauler.

The remarkable steel will share the stand with other advances from SSAB including Hardox 500 Turf wear-resistant steel which boasts a Brinell hardness of 500 HBW. Through this innovation, SSAB is looking to shake up the earthmoving industry and multiple companies have already launched new bucket lines making the most of the properties of Hardox 500 Tuf.

Image Credit: SSAB

SSAB aims to be the first company in the world to bring fossil-free steel to the market.

CDE SUPPORTS THE CIRCULAR ECONOMY


A CDE plant in France.
Image Credit: CDE

At the international trade show this year, CDE, a leading global provider of sand and aggregate wet processing solutions for the natural processing and waste recycling sectors, will highlight the role of its technology in supporting the circular economy and zero waste agenda.

As the construction sector continues to cope with the limited availability and high cost of raw materials, CDE will demonstrate the potential of construction, demolition and excavation (CD&E) waste to address the challenges facing the sector.

On the stand, using a combination of 3D animations, 360-degree virtual tours, 3D-printed models and augmented reality, the company will introduce a new way of immersing visitors in its process engineering expertise and some of its most innovative projects and products, including the leading AggMax and EvoWash technologies.

HAMM's new generation of compactors


Image Credit: HAMM

With operating weight of 11-25 t and a wide range of equipment variants, the HC Series can comply with a wide range of requirements.

Representing a new generation of soil compactors for all markets, HAMM's HC Series will be front and centre of their display at bauma.

The compactors achieve a high level of compaction power while simultaneously achieving a reduction in CO_2 emissions and can be equipped with various interfaces for the digital construction site.

The HC series is recognisable from the new, athletic design and the view channel in the engine hood. A new frame concept guarantees increased tank volume and, in comparison to the predecessor models, HAMM has increased the compaction power. The manufacturer has increased the centrifugal force by up to 15% and the static linear load is as high as 80.6 kg/cm. Thanks to the optimised weight distribution in combination with the Traction Control, the gradeability has also been further improved and the front vehicle and scraper have been redesigned.

Operator comfort has also been taken into consideration as the cab offers around 30% increased space, numerous storage compartments. and the vibrations and the noise level are significantly reduced.

MOBILE POWER AT HIMOINSA'S STAND

As a market leader in the design and manufacture of power technology solutions, HIMOINSA will present its complete range of 'Mobile Power' products at bauma 2022.

This includes battery power storage systems, lighting towers and gas and diesel generator sets. Highlights will include a demonstration of the company's electrification process in the form of the EHR | Battery Power Generator which was already introduced to the market. HIMOINSA is working on the development of high power outputs; with 500kWh units and 1MW units in 20-foot containers and 2MW units in 40-foot containers. The EHR is equipped with the HICORE System, a management technology designed by HIMOINSA which allows a more efficient use of energy. This smart management system selects the most favourable energy source for each charging condition.

Visitors will also get the chance to learn more about 1MW generator sets with Yanmar engines, as the company will be showcasing the HRYW 1275 D5/6 generator set, which stands out because of its low fuel consumption, due to the AY40 engine incorporating YANMAR's unique patented 'ASSIGN' combustion technology. This ensures best-in-class fuel consumption for the entire operating profile, with a highly reliable mechanical control system, considerably reducing noise and smoke emissions. It is the first HIMOINSA heavy-duty generator set with a Yanmar engine.

Image Credit: HIMOINSA

The HRYW-1275 D5/6 generator set incorporates a variable speed remote cooling system.

VOLVO PENTA TO HIGHLIGHT CURRENT AND FUTURE TECHNOLOGY


Volvo Penta's Stage V D5 to D16 diesel engines.
Image Credit: Volvo Penta

While its purpose-built electric driveline will take centre stage, Volvo Penta will use its presence at bauma to focus on the role of its market-leading diesel engines in the construction and mining industries, as well as the company's transformation into new sustainable technologies.

The company's display will provide an overview of how its current portfolio of ultra-efficient D5 to D16 diesel engines has resulted in technological advances and market share gains that support its transformation journey.

A popular choice in a wide range of machinery, from crushers and screeners to underground mining trucks, its diesel engines and gensets have been fully optimised to meet customer needs in terms of productivity, uptime and TCO. Passive regeneration of the aftertreatment system has been maximised, for example, eliminating unplanned stops during operation, while fuel consumption has been reduced.

The new D16 received the 2021 Engine of the Year award – largely in recognition of its increased output (796hp / 585kW) which was achieved at the same time as an up to 10% reduction in fuel consumption. By incorporating water-cooled charged air, its dual-stage turbo delivers high performance right across the operational range, enabling maximum torque to be produced at both low and high engine speeds.

Sharing the stand is Volvo Penta's electric driveline which was originally unveiled in 2019 as a proof of concept in a modified terminal tractor. Working alongside pioneering terminal tractor manufacturer TICO, Volvo Penta's wealth of experience enabled it to speed up the development and installation of the complete modular driveline solution and its integration into a fully electric terminal tractor prototype.

SENNEBOGEN PUTS FORWARD BROAD MACHINERY RANGE

Channelling its extensive experience in the design and construction of high-quality crane and lifting technology, SENNEBOGEN is bringing a strong portfolio to bauma.

Included within this is the flexible crane concept by the example of the 100 t telescopic crawler crane 6103E, which was recently launched on the market. The model covers a popular performance class and shines through its boom length of up to 62 m and outstanding pick and carry capabilities, especially on rough terrain. Thanks to a wide range of equipment variants, this telecrane, like all SENNEBOGEN telescopic cranes, can be configured to meet the most diverse requirements in hydraulic engineering or special civil engineering.

Also in the limelight will be the 200 t crawler crane 5500 G. Proven over many years in civil engineering, the 5500 in the G series version features state-of-the-art engine, drive and exhaust systems, as well as large-diameter piping and valves that ensure the best efficiency in operation and reduce emissions and consumption to an absolute minimum. Another plus point of the machine is that, thanks to the reinforced boom structure and higher ballasting, the payloads have been increased by values between 15 and 50% compared to the E series, depending on boom configurations.

Image Credit: SENNEBOGEN

The durability and reliability of SENNEBOGEN cranes is based on decades of experience in the design of high-quality crane technology.

Across its more than 2100 sq m booth, the company will be exhibiting a total of 12 machines from the crane and material handling sector.

FAYMONVILLE FEATURES AS A FULL-RANGE SUPPLIER

The Faymonville Group, as a leading manufacturer of special vehicles for heavy-duty and special transport, is presenting a cross-section of its expertise and is lining up with a large booth of around 1,450 sq m. A unique variety will be on show thanks to the three product brands MAX Trailer, Faymonville and Cometto.

The new BladeMAX1000 from Cometto, for example, will celebrate its premiere in Munich. This rotor blade adapter has a load capacity of 1000 mT and is used to safely transport the latest mega wind turbine blades over the last section of the route to the installation site.

Image Credit: Faymonville Group

Cometto is also presenting a 4-axle Eco1000 with hybrid technology.

The MAX Trailer brand will bring cause for celebration after reaching its 10 year anniversary in 2022. Faymonville has stated it has revolutionised the market thanks to its modular construction and so, this year, four exhibits will underline the product variety that is now on offer.

Variety is certainly what the group has in abundance, and information for bauma visitors on its extensive brand portfolio – including transport solutions for payloads from 15 tons to more than 15,000 tons – will certainly demonstrate this.

KLEEMANN'S CRUSHING AND SCREENING PLANTS

At this year's bauma, Kleemann will be presenting innovations from its product portfolio, with a total of nine mobile crushing and screening plants as well as its operating concept SPECTIVE.

The impact crusher MOBIREX MR 130(i) PRO will make its world premiere at the show as a new family member to the PRO line. The plant is used as a primary and secondary crusher and combines output, precision and sustainability. Thanks to its all-electric drive concept with the option of an external power supply and therefore CO_2-free operation, the plant guarantees low energy consumption per ton of final product.

Image Credit: Kleemann

The Kleemann MSS 802(i) EVO impresses as a new screen for coarse elements in natural stone and recycling.

Flanking this will be the new MOBISCREEN MSS 802(i) EVO which has been designed as a powerful mobile screen for coarse elements. With its plant design and flexible conversion options, it guarantees an optimum material flow in natural stone and recycling applications. The large range of screen surfaces and simple setting of screen parameters make it possible to adapt the MSS 802(i) EVO easily to new application conditions.

FLEXIBLE AND PROFITABLE SOLUTIONS WITH GOLDHOFER

Presenting machines from its wide-ranging portfolio, Goldhofer will showcase various advanced and optimised transportation solutions for the construction and heavy-haul industries.

Included here is the »ADDRIVE« 2.0, a heavy-duty module which can be used as a towed or self-propelled unit and now boasts a number of modifications especially for highly complex and ultra-heavy transports. Its larger hydraulic pumps and additional drive axles mean increased tractive power and higher speeds.

Image Credit: Goldhofer

Goldhofer represents a strong partner for the construction and heavy haul industries.

The highlight from their exhibition this year, however, will be a completely new vehicle concept: the »FT SERIES« which has a focus on outstanding operational flexibility and combines simple handling with the versatility needed to meet a wide variety of transportation needs.

Goldhofer is upholding its tradition of not releasing information until this latest heavy haul solution is unveiled at the show.

From conception to reality

Ensuring efficiency, safety and accuracy, surveying can play a critical role in the delivery of construction projects throughout their lifetime, says Shaheed Rahman, marketing manager at Topcon Positioning Middle East and Africa.

Utilising surveying can result in considerable cost savings for organisations.

Image Credit: Topcon Positioning

African Review (AR): How important is the use of surveying within construction projects?

Shaheed Rahman (SR): Surveying plays an important role in any construction project. It can take many forms and is used to establish the location and alignment of any man-made project, from a simple house/building to the most complex construction projects. Making sure that structures are safe and that projects are as efficient as possible, surveys are a must for all stages of any construction site/project.

During planning, surveys are used to determine the feasibility of the project. Then, during the design phase, surveys provide the basis for an accurate design and identify any potential roadblocks, keeping the project on track. Throughout the construction phase, surveys are used for accurately locating project features and help keep the project going on-budget and on-time.

Finally, during the post-construction phase, they are used to document the finished project and 'as-built surveys' are conducted to evaluate the finished project compared to the initial design/plans.

Every client of any construction project expects the deliverable to be up to the standard and you cannot do that without surveying instruments. There are several added values a surveying instrument can bring to a project. Amongst others, the benefits include time-saving, accuracy, reliability, and cost saving. A project that does not incorporate the usage of surveying instruments in the construction process is prone to incur higher labour costs (require up to 5 times more workforce to complete a job that can be done using a surveying instrument operated by 1 to 2 person). The level of error in surveying operations done by humans is much higher than that of a surveying instrument and data emanating from the usage of surveying instruments is more reliable, traceable and archivable. The combination of those benefits results in considerable cost savings for organisations.

AR: On the African continent, what is the standard of site surveying and why?

SR: The standard of site surveying in Africa varies from region to region. If you take, for example, North Africa, you will notice that the standard is relatively higher than in sub-Saharan Africa. This is primarily due to the high cost associated with acquiring recent up-to-date instruments by private surveyors who constitute the majority of the professionals in those regions. Also, the lack of solid regulations and follow-up by government entities on construction projects within those areas contributes to the proliferation of bad practices and low usage of accredited instruments. Added to that is the low rate of funding by governments to boost the sector and the underdeveloped status of most of those countries.

Another aspect is that most construction projects in Africa (especially sub-Saharan Africa) are handled by big multinationals and, due to this, the use of surveying instruments is quite present as it forms part of the good practice by those organisations. However, when you look at individual surveyors from the private sector, it is often way below the standard level as many of them lack the financial means to acquire up-to-date surveying instruments. Thus, the proliferation of outdated and low-quality instruments in the profession. Having said that, it can be noticed that in the past 10 years, the adoption and desire to utilise surveying tools in construction projects in Africa has been somewhat positive.

AR: How can this be improved?

SR: The way to improve this situation is a combined effort by the public and private sectors to develop solid regulation. For example, imposing the usage of up-to-date instruments on national projects, improving funding and educational activities to develop the industry, and exonerating or reducing the customs duties drastically on the import of such instruments to impact the end-user cost and boost their buying power. For manufacturers such as Topcon, the contribution to these efforts could be to develop customised instruments that respond to both the quality standard and the buying power of those regions.

I would encourage construction companies to rely more on new technologies (such as what we at Topcon and Sokkia can provide). For instance, using and implementing our Hybrid Solution which combines a robotic total station with GNSS receivers and its controller, would definitely be of huge benefit. Relying on the speed and accuracy of our new equipment would help prevent human errors, reduce labour hours and finish more projects on time, efficiently and replying to specs and standards.

We at Topcon are working thoroughly with our dealers to elevate the standard and to implement new solutions based on new technologies in order to rely

more on our equipment (and their efficiency) and less on human labour which is more vulnerable to errors.

AR: What presence does Topcon have on the African continent?

SR: Our motto at Topcon is 'Topcon for Human Life'. This means our business aims to contribute to the improvement of human life and this is implemented across Africa through the multiple dealership networks we have established to give access to our technology and products to the majority of users and potential users in that area. Apart from our sales activities, we also engage in charity initiatives like the 'Bridges to Prosperity' efforts to support the underprivileged to get a better life. Or our Continuously Operated Reference Station (CORS) located at the Kaduna Polytechnic Institute in Kaduna, Nigeria, to give students access to state-of-the-art technologies in the field of surveying and positioning.

> "In the past 10 years, the adoption and desire to utilise surveying tools in construction projects in Africa has been somewhat positive."
>
> **SHAHEED RAHMAN, MARKETING MANAGER AT TOPCON POSITIONING MIDDLE EAST AND AFRICA.**

Broadly, our equipment is used in several industries across the continent including construction (where it is used for projects such as roads, airports, residential and commercial complexes, etc.), oil and gas (for inspection mainly), and in the mining sector.

AR: What are some of the technological advances which have shaped surveying in the last few years?

SR: Topcon has been a pioneer in technological innovation in the survey field for several decades. In recent years we have pushed these successes even further by launching ground-breaking world first instruments. One of them is our LN-150 Layout Navigator which makes the most of Topcon's robotic laser total station technologies to offer innovative and user-friendly features without neglecting the precision and versatility inherent in all types of layouts. Another is our revolutionising GTL-1200 Dual Robotic total station and laser scanner for Real-Time Reality Capture Solution.

On the continent in recent years, laser scanners, drones, and even mobile mapping systems have been utilised by surveying companies and specialists for projects of varying types. We have found that customers using these have been very satisfied with the end results whether this was due to the improved precision, the time and efforts saved in capturing and processing data, or eliminating redos, checks and inspections along the way. ■

WHITE NOISE ALARM TO REDUCE NOISE EMISSIONS

The new Genie Lift Guard White Noise Alarm has been released to provide an alternative to a traditional tonal alarm.

The new White Noise Alarm sounds when a mobile elevating work platform (MEWP) travels forward or in reverse, or moves up or down. Instead of making a beeping sound, the White Noise Alarm makes more of a whooshing sound which is easy to hear by personnel who are in direct proximity to the MEWP. This noise, however, dissipates quicker than a tonal alarm.

The White Noise Alarm is available as an option now on all new Genie slab scissor lifts, telehandlers (ANSI only), RunaboutsT and AWPs, and will be available in Q1 2023 on boom lifts and RT scissor lifts.

Image Credit: Genie

The alarm can be beneficial for environmentally sensitive work areas.

VOLVO BEGINS PRODUCTION OF HEAVY ELECTRIC TRUCKS

Volvo Trucks is now starting series production of heavy electric, 44 tonne trucks, making it the first global truck manufacturer to do so.

The company is beginning series production of the electric versions of the company's most important product range, its heavy-duty trucks: Volvo FH, Volvo FM and Volvo FMX. These trucks can operate at a total weight of 44 tonnes and the three models represent around two thirds of the company's sales.

With these new additions, Volvo Trucks has six electric truck models in series production globally – the broadest electric truck line up in the industry.

Image Credit: Volvo Trucks

Volvo Trucks has six electric truck models in series production globally.

Roger Alm, president of Volvo Trucks, commented, "This is a milestone and proves that we are leading the transformation of the industry. It's less than two years ago since we showcased our heavy electric trucks for the very first time."

"This marks the first steps locally in embracing electric vehicles as part of sustainable transport solutions here in South Africa," said Waldemar Christensen, MD of Volvo Trucks South Africa.

Series production of Volvo's heaviest electric trucks will start in the Tuve factory in Gothenburg, Sweden and next year the factory in Ghent, Belgium will follow. Volvo produces the electric trucks on the same line as its conventional trucks, which gives high production flexibility and efficiency gains.

Alm added, "We have sold around 1,000 units of our heavy electric trucks and more than 2,600 of our electric trucks in total. We expect volumes to increase significantly in the next few years. By 2030, at least 50% of the trucks we sell globally should be electric."

Volvo Trucks' electric line-up of six truck models covers a wide range of applications such as city distribution and refuse handling, regional transport and construction work.

Lifting the standard

From safety advancements to fresh models, new innovations continue to shape construction's largest piece of machinery.

Image Credit: Amco Veba

Amco Veba's 815Q.

With a view to improving safety and reliability for cranes operating on construction sites, the Crosby Group, a global leader in lifting, rigging and load securement hardware, has released upgrades to its range of Crosby BlokCam crane camera systems.

The updates extend the legacy of the X2 and M3 systems which are respectively renowned as the industry's first fully modular system compatible with tower cranes and the first fully modular camera for telescopic and mobile cranes.

The additions and enhancements include a new version of the X2 and M3 and add a new transmitter to connect up to two sensors upon request; a repeater that comes with a ball joint mount; a new sensor with integrated audio and video plug; and assembly with an improved Wi-Fi signal. X3L and M3L versions are also available with a state-of-the-art lithium-ion battery and charger.

Wide Boom Plus

Manitowoc, one of the world's largest providers of lifting equipment for the construction industry, has expanded its boom insert offering with the new Wide Boom Plus kit for its 350 t MLC300 lattice-boom crawler crane.

Providing operators with extra reach by lengthening booms up to 131 metres when used in combination with the VPC-MAX and extended upper boom points, the inserts will be particularly useful for assembling wind turbines, according to Manitowoc.

The new Wide Boom Plus inserts kit for the Manitowoc MLC300 crawler crane is now available for purchase everywhere Manitowoc cranes are sold.

Quality cranes

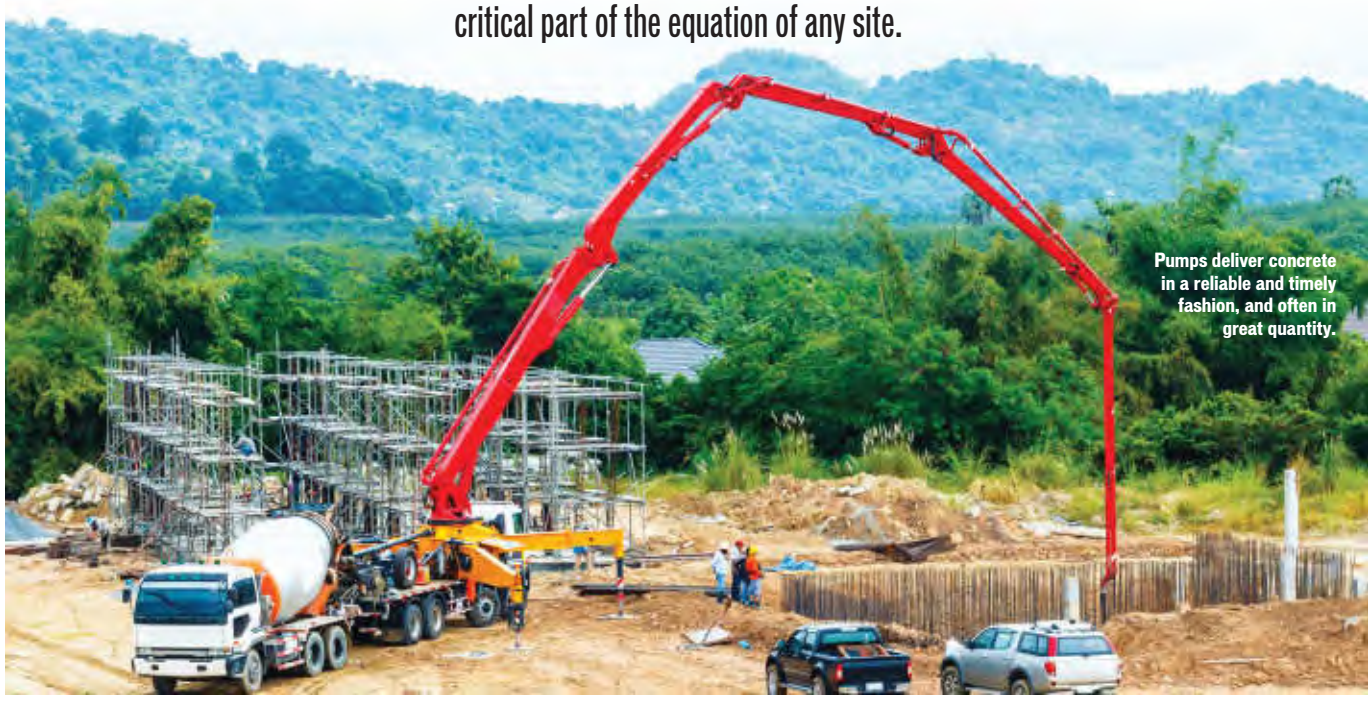
Amco Veba, one of the longest-standing names in the crane world, has strengthened its position in truck-mounted cranes with the launch of new crane range QUALITY LINE.

The 810Q, 815Q and 820Q models are all rack and pinion without linkage and, across the range, have between one and six extensions. The jib version completes the models 815Q with 3SJ2 and 820Q with 5SJ2.

The new models have a lifting capacity of 10 tm, 15 tm and 20 tm and can be recognised by high-quality painting treatment and modern design, the boom pack with conventional hexagonal profile and a user-friendly control station improving comfort during operation. ■

Concrete pumps built to deliver anytime, anywhere

Construction projects require a constant supply of concrete, making the pumps that deliver it a critical part of the equation of any site.



Pumps deliver concrete in a reliable and timely fashion, and often in great quantity.

Image Credit: Adobe Stock

Africa's construction sector, and its massive infrastructure roll-out, all hinge on a vast array of critical components coming together, from skilled manpower to state-of-the-art machinery, including concrete pumps.

These assets perform a variety of roles on a building site, delivering concrete supplies in a reliable and timely fashion – and often in great quantity. Pumps can be a faster and easier way to place concrete, with great accuracy, especially in high or hard-to-reach places. Factors such as the design of concrete mix, vertical and horizontal distances, size of the aggregate being used, as well as the volume or quantity of concrete being used, all influence the choice of pump.

Generally speaking, the larger and more powerful the pump, the costlier it can be. Leading companies in Africa serving the market successfully include the likes of Foxcrete Concrete Pumping, Schwing Stetter Africa and PMSA KwaZulu-Natal. Global heavyweight providers of concrete pumping machines also include the likes of Germany's Liebherr Concrete Technology and China's Zoomlion Heavy Industry. The latter recently played a part in the construction of the N'Djamena Stadium in Chad, providing a mix of 10 cranes, excavators, bulldozers and concrete pumping trucks.

But other pump assets can commonly be found on work sites, such as to move water continuously from one place to another. The selection of which concrete pumps to deploy can be a test in itself for site managers and may involve a multitude of factors and complexities.

Boom pumps

Usually attached to a truck and characterised by a controlled hydraulic arm where concrete is placed and dispersed accurately in the direction it is needed. They can deliver a large amount of concrete at speed and are commonly used for large construction projects.

Stationary pumps

Also known as line pumps or static pumps, these can be suitable for projects where a concrete pump truck cannot reach. Although characterised by less manoeuvrability, it is still often attended to a truck or mounted on a trailer with the concrete pumped through rubber hoses or steel pipelines.

Concrete pumps

Usually referred to as trailer – or truck-mounted concrete pumps, they feature a line pump attached to the back of a trailer or truck. These pumps are compact and are often recommended for smaller construction projects.

Specialised usage pumps

These pumps are typically a premium option, and are designed for certain types of construction projects or installations, such as delivering concrete into mines of tunnels.

Innovation, attention to quality and a focus on safety have all shaped the direction of today's concrete pumps, which have evolved significantly in recent times. South Africa's PMSA Kwa-Zulu Natal started out as Concrete Pumps (Pty) Ltd in 1968 with the manufacture and marketing of a revolutionary air-operated concrete pump, the SEM Concrete Placer Pump.

Simple and inexpensive to operate, it soon became a market leader in concrete pumps in the local civil, building and mining industries. The company now offers a wide range of concrete equipment, solutions and technology, including truck-mounted, portable and concrete placer pumps for all applications.

Innovations have focused on a host of areas, including power and performance, environmental and safety, and continue to reimagine and improve concrete pumps today. Last year, Liebherr launched its 36 XXT truck-mounted concrete pump, built on a three-axle chassis, making it exceptionally manoeuvrable. The distribution boom is flush with the hopper, which shortens the machine and thus improves manoeuvrability on narrow construction sites and in road traffic.

Today's concrete pumps are also smarter than decades previously, with technology and electronics embedded into all new machinery. Italy's CIFA, a part of the Zoomlion family, achieves versatility and manoeuvrability on its K36L-5 truck pump thanks to a 'smart' boom, which can be used to pump in any situation, even in the most difficult places. This is possible due to its five sections and a new continuous rotation joint on the last section. It makes it easier to unfold and set up even in indoor sites, because the joint means the boom can be positioned and rotated in either direction. ■

Rio Tinto and Volvo Group collaborate for low-carbon materials

Image Credit: Volvo Group

The companies will work together to strengthen the supply of responsibly sourced low-carbon materials.

Rio Tinto and Volvo Group have signed a memorandum of understanding (MoU) to create a strategic partnership where Rio will supply responsibly sourced low-carbon products and solutions to Volvo Group and the companies will work towards decarbonising Rio Tinto's operations through piloting Volvo Group's sustainable autonomous hauling solutions.

The multi-materials partnership will allow Rio Tinto, a leading global mining and metals company, to progress sustainability commitments in its operations and supply chains. It will support Volvo Group, one of the world's largest transport and infrastructure providers, in its ambition towards a net-zero future. The partnership aims to secure supplies of materials including lithium, low-carbon aluminium, copper, and metallics.

Jakob Stausholm, CEO of Rio Tinto, said, "We look forward to partnering with Volvo to progress our contribution to a net-zero future, as we collaborate to deliver sustainable outcomes from the mine to the showroom floor. We will be working together to support the decarbonisation of Rio Tinto's operations and deliver low-carbon materials for use in Volvo's innovative product range, including electric and autonomous vehicles."

Martin Lundstedt, president and CEO at Volvo, stated, "We are eager to partner with Rio Tinto, a true collaboration aiming to accelerate our ambitions towards a fossil-free, decarbonised future. By addressing the full value chain, from the use of low-carbon materials in our products, to providing our customers with sustainable autonomous hauling solutions, we can contribute to a better and more sustainable future."

The companies will work together to strengthen the supply of responsibly sourced low-carbon materials such as RenewAl aluminium, aluminium produced using the ELYSISTM zero-carbon smelting technology, Aluminium Stewardship Initiative (ASI) certified aluminium and Copper Mark certified copper, and explore product development opportunities such as the supply of lithium for batteries.

GIYANI SIGNS CONSTRUCTION CONTRACT FOR DEMONSTRATION PLANT AT K.HILL

Giyani Metals Corp., the developer of the K.Hill battery-grade manganese project in Botswana has signed a design-build contract with specialist South African-based hydrometallurgical engineering firm Met63 Ltd. for the construction of a demonstration plant for approximately US$9.2mn.

The contract covers the engineering, construction and commissioning of the plant, on an open book and cost-reimbursable basis. The plant is designed for a continuous process, so that HPMSM crystals meeting the stringent product specifications set by potential off-takers can be produced in a steady state operation. To support the continuous process, the plant will be equipped with a sophisticated instrumentation and control system that also provides the flexibility to use the plant for de-risking the commercial plant development and as a training facility. The companies have selected a construction site in Johannesburg where the plant will be commissioned and operated before expected relocation to Botswana.

LOTUS RAISES FUNDS FOR MALAWI URANIUM PROJECT

Lotus Resources Limited has announced the completion of a placement to professional and institutional investors to raise funds for the progression of the Kayelekera Uranium Project in Malawi. The placement was reportedly strongly supported by domestic and international investors, which the company has suggested is an indication of the strong investor interest in the project.

Lotus Resources stated their particular pleasure at welcoming a number of specialist uranium investors to the register, which is a strong endorsement for the recommencement of uranium production at the project as outlined in the company's recently released definitive feasibility study.

Keith Bowes, Lotus' managing director said, "We are very pleased to have received such strong support for the placement which will enable us to progress offtake negotiations with the various utilities and project funding during a period of significant support for nuclear energy globally.

"In particular, the demand received from global sector specialists during the bookbuild provides significant validation for the company's restart strategy and underscores the value of the project as one of the nearest term producers globally.

"I'd also like to thank our existing shareholders for their strong, ongoing support, and welcome all our new shareholders aboard. We look forward to providing further updates on our activities in the coming weeks and months," concluded Bowes.

Lotus Resources currently owns an 85% interest in the Kayelekera Uranium Project which hosts a current resource of 51.1 Mlbs and previously produced around 11 Mlbs of uranium between 2009 and 2014. The company's positive feasibility study determined that Kayelekera can support a viable long-term operation.

BRIEFS

Partners advance mining tyre recycling

Kal Tire's Mining Tire Group, a leading international mining tyre supply and management partner, and Mitsui & Co., a global corporate group focusing on innovation and sustainability, have announced the formation of a joint venture aimed at advancing mining tyre recycling solutions. The collaboration will support demand for solutions to handle end-of-life mining tyres in ways that lead to the best use of recycled rubber products, and promote a circular economy.

Image Credit: Kal Tire

Kal Tire's thermal conversion recycling facility in Chile is the first operating facility of its kind.

Construction begins on Kipushi's processing plant

Kipushi Corporation SA (KICO), a joint venture between Ivanhoe and DRC state-owned mining company Gécamines, has hosted a breaking-ground ceremony to commemorate the start of construction on the processing plant at the Kipushi mine. In addition, Ivanhoe signed a memorandum of understanding (MOU) with the provincial government of Haut-Katanga to study options for upgrading the DRC-Zambia border crossing for commercial imports and exports.

Image Credit: Ivanhoe

The ceremony follows the agreement signed to bring the Kipushi mine back into production.

Screening success for Kwatani

Africa screening expertise recognised as South African firm gets busy on mammoth export deal for large Asia copper mine.

Kwatani's busy assembly workshop floor.

Image Credit: Kwatani

Screening, an integral part of the mining process, is also big business in what is now a buoyant and thriving industry in Africa and beyond.

South African vibrating screen specialist OEM, Kwatani, competing with leading rivals from around the world, recently landed a huge export order for more than 70 of its screens.

The company will supply the machines to a large copper mine site in central Asia, which has a production rate of some 35mn tons a year. It is Kwatani's largest order to date and is probably the largest single order for screens ever placed on a company in Africa, according to general manager for sales and service, Jan Schoepflin.

To win such a bid in the face of intense competition shows how the firm's global reputation is growing, Schoepflin said.

Deadlines and deliveries

Kwatani screens have already been supplied to more than 50 countries within Africa and elsewhere. But it also places intense pressure on the company to deliver on time. It is now busy working on the screens at its South African manufacturing facility on a tight lead time.

Meeting delivery deadlines and avoiding penalties will require detailed logistical planning for the completed units, said Schoepflin. The screens will be delivered in batches to a South African port, and shipped as break-bulk due to their size. Production of the screens is expected to be completed by early 2023.

Kwatani recently took part in Johannesburg's Electra Mining event in September, to showcase its products and expertise. With growing demand and confidence in the mining industry, the company has added another 3,000 sq m to its existing 17,000 sq m facility in Spartan, Johannesburg.

> "It is Kwatani's largest order to date and is probably the largest single order for screens ever placed on a company in Africa."

The Asia copper mine order is for large double-deck multi-slope screens, which feed high pressure grinding rolls (HPGRs), as well as for single-deck linear screens feeding concentrators. The screens will be installed on isolation frames to minimise the extent to which dynamic loads affect the plant's building structures.

"As the screens are delivered, Kwatani service technicians will supervise their installation and commissioning on site, as part of our customer support," added Schoepflin. "Our specialists will witness the cold commissioning – running without load – as well as

hot commissioning with full load. We will confirm everything is running to specification and to customer expectations."

Sandvik on the march

Kwatani is now part of Sandvik Rock Processing Solutions, a leading supplier of crushing and screening equipment for processing rock and minerals in the mining and infrastructure industries, all within the Sweden-based Sandvik Group. The parent company is likewise making strong in-roads in other African markets, recently appointing Tesim as its authorised distributor of mobile crushing and screening equipment for West Africa.

Tesim Teknoloji A.Ş. was established in 2013 and operates from its headquarters in Ankara, Turkey. It will be responsible for equipment sales as well as the provision of full after-market support through the supply of spare parts and local customer service across 18 territories, including Ghana, Nigeria and Ivory Coast.

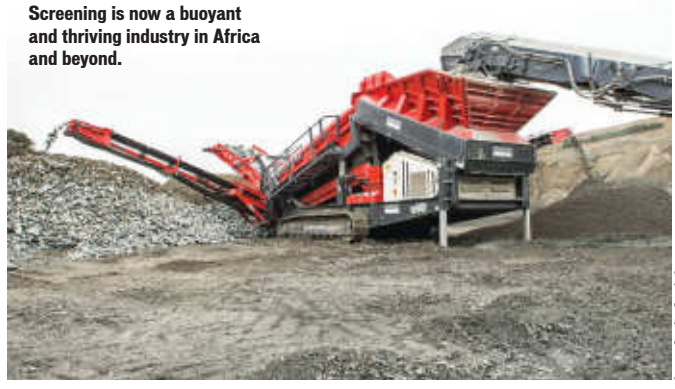


Image Credit: Sandvik

Screening is now a buoyant and thriving industry in Africa and beyond.

Other markets covered include key mining hubs such as Guinea, Sierra Leone, Mali and Burkina Faso, among others. The goal is to further grow the Sandvik mobiles' business and brand across the dynamic West Africa region.

Sandvik only signed the deal to acquire Kwatani in May 2021, underlining its Africa ambitions. Kwatani's offering of large vibrating screens and feeders was seen as a good complement to Sandvik's strong competence and experience within stationary crushing and screening.

Competition heats up

Positivity in Africa's mining industry means there is plenty of competition in this sector niche. In April, Metso Outotec signed a distribution agreement for its stationary and mobile crushing and screening equipment for the aggregates and mining contractor customer segments with Panafrican Equipment Group.

The agreement covers Nigeria, Sierra Leone, Ghana, Kenya, Tanzania, Uganda, Rwanda and Burundi – all markets where Panafrican Equipment Group already has an extensive footprint in the construction and mining sectors.

For Metso Outotec, a market leader in crushing and screening, the intent is to upgrade the service for customers who invest in its equipment and provide better support on the aftermarket side.

It says the new pact will offer the brand better agility, service and presence in the Africa market. ■

The power behind the payload: fuelling the Lefa mine

Nordgold Group has launched a 33MW power plant at the Lefa gold mine - one of the largest gold mines in Guinea.

Nordgold, an internationally diversified gold producer with a portfolio of eight mines, commissioned the new heavy fuel oil (HFO), US$30mn project in order to replace the old facility. The new facility will reduce fuel consumption for electricity production by 15%, engine oil by 30% and save 17,000 tons of greenhouse gas emissions annually. In addition, it will enable a significant reduction in operating costs and enhance the stability of the electricity supply for more than 15 years of the mine's life. It includes the latest fire detection systems to increase employee safety.

The facility was designed and constructed by SUMEC, a key member of China National Machinery Industry Corporation (SINOMACH), and Hyundai Heavy Industries provided the main generating equipment for the plant.

African Review reached out to Lefa's management to find out more about the ambitious project.

Image Credit: Nordgold

The HFO power plant will enable a significant reduction in operating costs.

A stable power supply

Brian Nel, Lefa's new power plant project manager, provided some technical details on the plant explaining that the new facility boasts eight generators, each producing 4.125MW. Of this 33MW capacity, Lefa now uses approximately 51-66% at any one time. The design for the power-generating facility is done at N+2 option: six engines in operation at full capacity, one engine at maintenance and one engine on stand-by.

The power plant, Nel continued, will operate for five years before its first major planned maintenance – a period extended by the additional capacity making it easier to control the running hours on each machine.

Nel also noted that while prefabricated structures were brought from China, main essential construction materials included sand, cement, gravel, and more, which were sourced locally from Guinean suppliers.

Explaining why the project was undertaken, Nel commented, "Nordgold examined all available options for Lefa power supply before taking investment decision to construct the new power plant. The mine cannot be connected to national energy grid as its construction is not yet completed and a power station running on liquefied gas delivered from Ghana was also considered but analysis proved the option was not economically viable. Solar energy to fuel Lefa's Power Plant could be considered in future should it become cost-effective."

With other options explored but found wanting, Nordgold entered into an engineering, procurement and construction (EPC) agreement with SUMEC in April 2020.

After this, construction on the site began in Q1 2021 before being finished and launched in July 2022. With Covid-19 delaying the project by six months, it was a notable achievement that it moved from EPC to commissioning in just two years and three months.

Challenges on the way

The pandemic, as to be expected, provided the main problems related to the project, Nel explained. It took six months to get all necessary permissions to bring SUMEC's team from China to Guinea and the engineering stage was conducted remotely.

Supply of equipment and materials from abroad to Guinea proved difficult in such times, but was overcome thanks to high flexibility of a Chinese partner, Jiangsu Chuanshang Co. Ltd, which managed to speed up all logistics as much as it was possible during the pandemic.

Nel also remarked, "Due to travel restrictions we were not able to visit Hyundai Heavy Industries in Korea to accept the engines. So, we utilised a new process of acceptance which included thorough examination of the equipment via real-time video stream. Thanks to Nordgold's strong track record of operational delivery in Guinea, SUMEC's team on site was able to quickly develop effective relations with local suppliers."

Supporting expansion

It was suggested that the delivery of the new HFO plant will help in the expansion of the mine's resources. Providing clarification here, Samuel Addo-Frempong, Lefa's mining director, commented, "In 2023, Nordgold is commencing an underground gold mine development at its operating Lefa mine in Guinea. The Lero-Karta underground mine will be developed and operated in an environmentally responsible manner with deep commitment to community engagement, sustainability and efficiency.

"We plan to produce first gold from Lero-Karta underground mine in 2024. The life of the mine is estimated to be more than nine years. The Lero-Karta project added 7.1 Mt of ore to the Lefa mine reserves and the deposit ore body is open at depth, suggesting high potential for increasing resources as the underground mining develops."

The stable platform provided by the new power plant represents a promising milestone which will help enable this future expansion and development of the Guinean mine. While a notable achievement for Nordgold and those involved in its delivery, it is also a welcome site for the local community as more than 1,300 employees are directly employed at the site and more than 1,000 indirect jobs are dependent on it success. They can rest assured that their livelihoods will be supported in the coming years and that Nordgold, which has injected almost US$1.5bn into the country since it acquired the mine in 2010, remains committed to investing in Guinea and delivering knowledge transfer on advanced technology unto the wider continent. ■

ZEST WEG UNVEILS NEW MOTOR ASSEMBLY LINE

Zest WEG has made another advancement in sustainability and local economic impact with a new assembly line at its corporate premises at Longlake, South Africa, for its low voltage (LV) premium efficiency WEG IE3 electric motors.

Zest WEG CEO, Eduardo Werninghaus, says the addition of the new facility is an important contribution to local manufacturing capacity in the country. It improves flexibility in the company's electric motor supply chain, and ensures prompt delivery times for customers. The line produces WEG W22 IE3 LV motors in various sizes, offering high reliability in all applications.

"As a Level 1 B-BBEE company, our commitment to transformation includes continuous promotion of local manufacture," said Werninghaus. "Our focus on premium efficiency IE3 motors is also significant as it helps drive energy efficiency – a key sustainability goal for mines and other industries."

According to Sindi Mbhalati, operations executive at Zest WEG, the assembly line required considerable investment in equipment. This included jib cranes for easier materials handling, an air reticulation system to feed compressed air to the pneumatic tools on the line as well as to the spray booth and packaging equipment, enhancing the efficiency of the production processes and a state-of-the-art test panel.

Image Credit: ZEST WEG

WEG motors in different phases of the process.

As with any manufacturing and assembly operation, record keeping is an important cornerstone. The panel is therefore synchronised with the advanced WEG manufacturing facilities in Brazil, for complete and accurate record tracking and evaluation. Each motor undergoes routine testing which includes winding resistance tests, accessories tests, insulation resistance tests and no-load tests.

Mbhalati says that the panel tests winding resistance per phase with an imbalance test to compare the imbalances between the resistance results, while the accessories resistance test confirms that the accessories installed in the motor are in working order. The panel also tests for insulation resistance which provides the team with data on the motor winding health. A No-Load test is conducted to determine the current that the motor draws at no-load and determines the imbalance of the current drawn between the phases.

The facility created several new jobs within the business, most dedicated to the W22 motor assembly line.

Advertiser's Index

FRITSCH PROVIDES EVERYTHING NEEDED FOR SIEVING

The FRITSCH sieve range can act as the answer to all typical sieving tasks in the laboratory with three instruments for every application, designed to make work simpler and faster.

The Vibratory Sieve Shaker ANALYSETTE 3 PRO offers everything customers need for fast determination of quantitative particle size distribution in the laboratory. As a shaking sieve system with an electromagnetic drive oscillates the sieve stack into regulated vertical oscillations, and is the ideal solution for sieving sample quantities up to 2 kg and a measurement range from 20 mm to 63 mm.

Suited for quality control of incoming and outgoing products, the ANALYSETTE 3 PRO offers user-friendly operation and is low-noise, robust and long-lasting.

Image Credit: FRITSCH

The FRITSCH ANALYSETTE 3 PRO.

The Vibratory Sieve Shaker ANALYSETTE 3 SPARTAN (known as the little sister of the ANALYSETTE 3 PRO) is designed for all typical sieving tasks in the laboratory with optical adjustment of the amplitude on the running instrument. It comes complete with the practical FRITSCH sieve stack tensioning system EASYTWIST and the FRITSCH evaluation software AUTOSIEVE for evaluation of the sieve analysis.

Finally, the Heavy Duty Analytical Sieve Shaker ANALYSETTE 18 provides a more robust sieve shaker. It can sieve up to 15 kg of material between 20 mm and 125 mm and the three-dimensional sieving motion ensures particularly fast sieving results without manual re-sieving, and also optimal reproducibility.

FRITSCH, with the three sieve shakers on offer, is determined to provide the perfect solution for each application required.

Tips for water tank safety and efficiency

Josh Swank, vice president of marketing at Philippi-Hagenbuch Inc., describes how the ideal solution to safely and efficiently spraying haul roads can be found in a water tank's design and spraying system.

Site safety and efficiency are two of the main reasons why spraying haul roads is common practice. Yet ironically, the equipment many operations use to wet the roads is neither the safest nor most efficient option. The secret to finding the ideal solution lies within the water tank's design and spraying system.

Water-metering controls increase driver safety by allowing them to focus more on the surroundings and less on water output.

Image Credit: Philippi-Hagenbuch Inc.

Don't cut corners

Rounded water tanks are the most common. They get the job done, but not without challenges. The tank's curved sides raise the water's centre of gravity, making the truck less stable when navigating haul roads. To mitigate the instability, operators often avoid filling their tanks completely. This means they need to refill more frequently, contributing to added downtime and increased fuel consumption as they backtrack to the water source.

Additionally, rounded tank designs contribute to water churning since there are no corners, edges, or obstructions to slow the water's momentum. This constant, and sometimes rapid, water movement poses a safety risk for the driver and people nearby since the water can shift the centre of gravity and cause the truck to become unstable.

Alternatively, water tanks with square corners minimise churning and have a larger capacity by simply not rounding off the sides of the tank. They also maximise productivity and operator safety due to their box-shaped structure, water baffles and water metering systems. The design also lowers the unit's overall centre of gravity, enhancing stability and allowing drivers to safely fill the tank to capacity. The box-shaped structure makes it possible to haul about 20% more water than rounded tanks, resulting in considerable time and cost savings.

Spray smarter

Providing drivers with precise control of the tank's water output increases efficiency. Individually controlled spray heads make it easier for drivers to optimise water use while reducing the risk of oversaturating roads. Operators can turn on the individual spray heads and, with some systems, programme a spraying interval to cover a greater surface area without making the roads too slick.

Water-metering controls also increase driver safety by allowing them to focus more on the surroundings and less on water output. Remote controls can further improve safety by keeping drivers out of harm's way – especially when battling fires. Traditional systems require the operator to use a joystick and monitor in the cab, but some remote-control systems allow control of a water cannon from as far as half a mile away.

Bafflingly safe

A tank's baffling system affects both safety and efficiency as it prevents water from surging side-to-side and front-to-back. Almost all water tanks feature baffles, but some designs are more effective than others.

Many baffles have large holes for maintenance personnel to access individual compartments through which water can also move freely, resulting in surging. While baffles require holes for water to flow throughout the tank, they should be small enough to prevent surging. Additionally, some tanks feature baffling from floor to ceiling, along the total length and width of the tank, for complete compartmentalisation. Others take it even further with side-surge stabilisers along interior walls to prevent water from churning within individual sections. These added measures go a long way toward improving tank stability and overall safety.

Some manufacturers incorporate baffle access doors on the water tanks that are about as tall as an average-sized worker to provide a more advanced solution than simply a hole near the ground in the baffle walls. These baffle doors remain shut while the water tank is in operation, suppressing water surge. When they are open, technicians can easily walk through, practically eliminating the need to crouch down during tank maintenance.

Anytime safety and efficiency are the main objectives, using equipment that falls short in either category doesn't add up. When evaluating future tank purchases, take a close look at how its design lends itself to accomplishing these goals. ■

A LONG WAY TOGETHER

WHEREVER YOU ARE, BKT IS WITH YOU

No matter how challenging your needs, BKT is with you offering an extensive product portfolio for every field such as agriculture, OTR and industrial applications.

BKT provides concrete, reliable and high-quality solutions to your requests and working needs.

Wherever you are, BKT is with you.

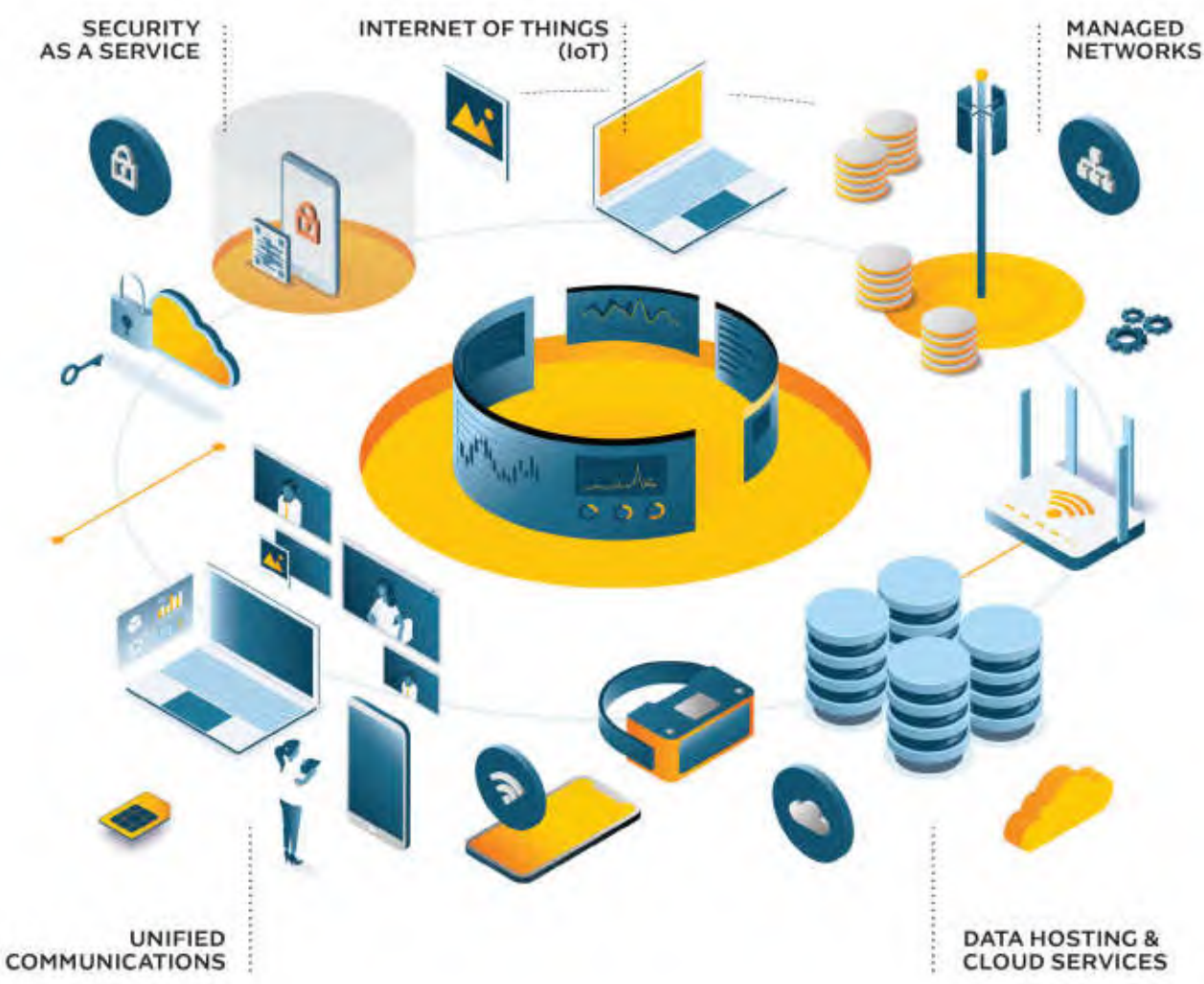
OFF-HIGHWAY TIRE SOLUTIONS

BKT

GROWING TOGETHER

bkt-tires.com

For info:
africa@bkt-tires.com



Nothing should get in the way of getting business done

A modern business always strives to improve productivity. It can't afford to slow down or go down. Not for a day, not even for a minute. That's why you need ICT Solutions from MTN Business. With access to Unified Communications, Managed Network Services, Cloud, Internet of Things (IoT) and Security as a Service, nothing should stop you from getting business done.
So. ***What are we doing today?***

#BusinessDoneBetter

To find out more about MTN Business ICT solutions

Visit **mtnbusiness.com**

MTN