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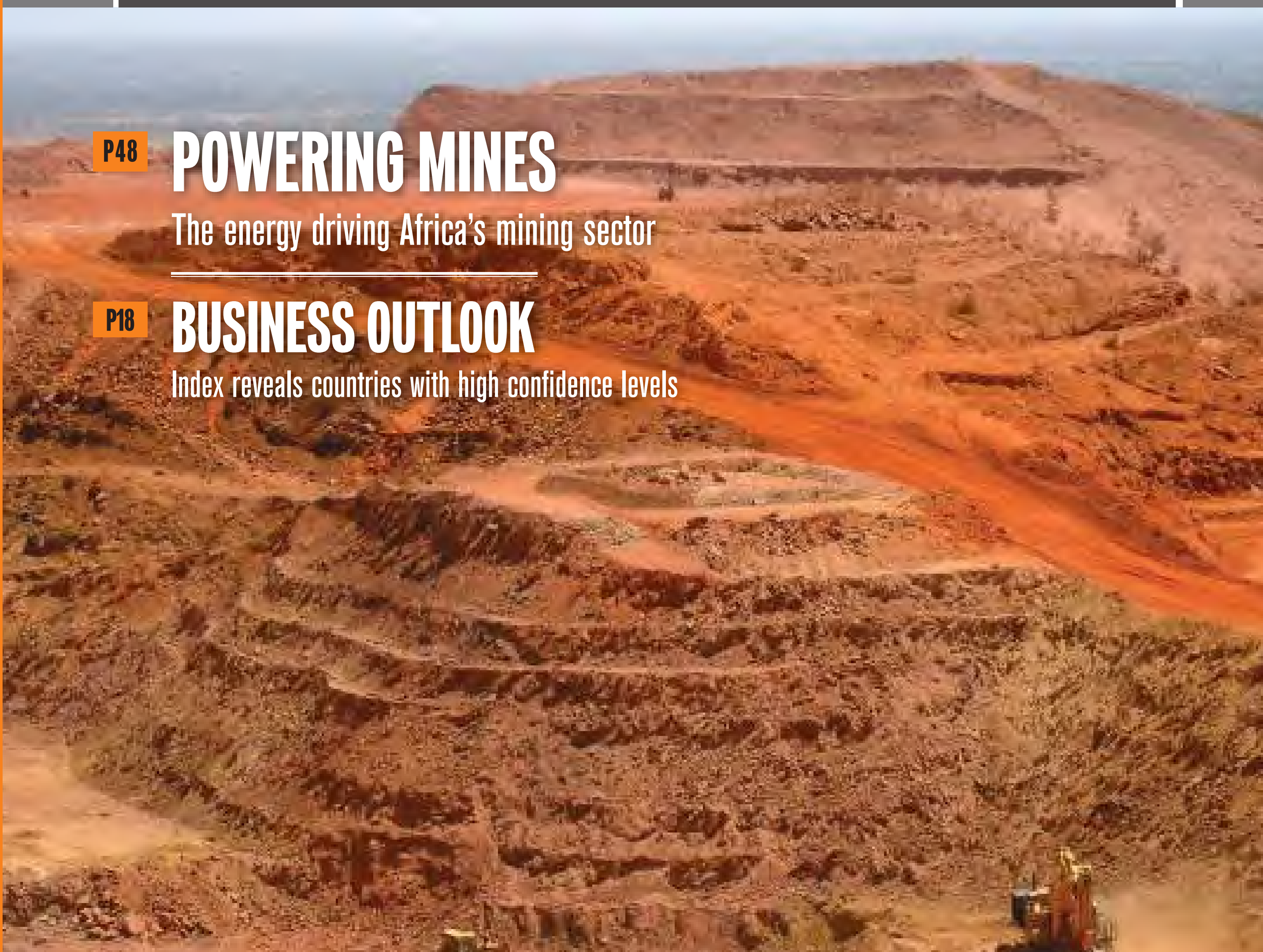

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Richard Musukwa, Zambia's Minister of Mines and Minerals Development

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Equipment Group

INVESTING IN AFRICAN MINING INDABA

Office Number 2304
Jumeirah Business Centre 1, Cluster G
Jumeirah Lakes Towers
P.O. Box 3921163, Dubai, UAE

Tel: +971 (0)4 212 4750
FAX: +971 4 442 5690
Email: info@panafricangroup.com,
Website: http://www.panafricangroup.com

KOMATSU WIRTGEN GROUP AGCO

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Editor: Samantha Payne
Email: samantha.payne@alaincharles.com

Editorial and Design team: Mariam Ahmad, Prashanth AP, Fyna Ashwath Miriam Brtkova, Praveen CP, Manojkumar K, Nonalynka Nongrum Abhishek Paul, Rahul Puthenveedu, Deblina Roy and Louise Waters

Managing editor: Georgia Lewis

Contributing editor: Martin Clark

Publisher: Nick Fordham

Sales Director: Michael Ferridge

Magazine Manager: Serenella Ferraro
Tel: +44 207 834 7676 Fax: +44 207 973 0076
Email: serenella.ferraro@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

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

UK — **MICHAEL FERRIDGE**
Tel: +44 20 7834 7676 Fax: +44 20 7973 0076
Email: michael.ferridge@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: Srinidhi Chikkars, Swati Gupta, Nelly Mendes and Arjun S
E-mail: production@alaincharles.com

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Editor's Note

Happy New Year! There's no better way to kick off the year other than with the biggest mining event in the world – Investing in African Mining Indaba – which is set to return to Cape Town on 3-6 February. Our team will be on the ground talking to major players in the industry so do keep an eye out, and say hello. See our special coverage of the event on pages 38-44.

In the business section, we outline a very positive East African business outlook from The African List, a membership organisation of African private sector leaders established by the CDC Group, in partnership with the Wheeler Institute for Business and Development at London Business School, page 18.

Elsewhere in the issue, you'll find latest developments in the construction and energy sectors, including commentary from Wärtsilä Nigeria on how flexible power systems will integrate a large share of renewable energy into the country's energy mix, page 26.

Finally, waste management systems are vital to healthy living in rural Africa. We look at the latest installations making life easier for residents in Malawi.

Samantha Payne, *Editor*

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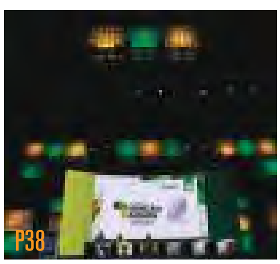

Eni and ETAP inaugurate solar park at oil and gas field in Tunisia

The photovoltaic plant in the Adam concession in the Tataouine Governorship has a 5MW maximum capacity.

Eni Tunisia BV has inaugurated a new photovoltaic plant in partnership with the national company, Entreprise Tunisienne d'Activités Pétrolières (ETAP).

The plant is in the Adam concession in the south of Tataouine Governorship, where Eni is the operator. The installation will produce solar energy using an offgrid operational configuration.

Energy produced by the Adam photovoltaic plant, which has a maximum capacity of 5MW, will be used directly from the industrial site, reducing gas consumption and saving more than 6,500 tons of CO_2 emissions per year. The plant, which was built under the co-operation agreement with ETAP to develop renewable energy generation projects in Tunisia, also includes a 2.2 MWp/1.5MWh storage battery system that will facilitate integration with existing gas turbines, ensuring optimisation of operating costs. This hybrid generation system, which combines gas, photovoltaic and storage, is one of the most important and innovative in the world.

In the Tataouine region under the Eni-ETAP cooperation agreement, works are also ongoing to construct an additional photovoltaic plant in the city of Tataouine, which will have an installed capacity of 10 MWp. This project, undertaken after a public tender issued by the Tunisian Energy Ministry, also includes supplying green electricity to the national company, Société Tunisienne de l'Electricité et du Gaz (STEG).

These initiatives confirm Eni's commitment to the decarbonisation of Tunisian energy systems, leading towards an increasingly low-carbon scenario, in which renewable energies are a fundamental and integrated element of its energy mix.

Eni has been present in Tunisia since 1961 and operates in the country's upstream sector, with activities concentrated in the southern desert areas and in the Mediterranean offshore, the gas and LNG power and marketing sector, the management of the Transmed pipeline that connects Algeria to Italy through Tunisia, and in the refining and marketing sector.

ALUMINIUM WHEEL FACTORY SET UP IN MOROCCO

Chinese firm, Citic Dicastal Group – the largest producer of aluminium wheels in the world – has launched a second factory in the Kenitra, Morocco.

The 350 million-euro (US$380mn) plant is part of a project, dubbed Citic Dicastal, and follows the opening of a similar plant last year, according to the newspaper North Africa Post. It will position Morocco to become the third largest aluminium wheel producer in the world and will boost China's One Belt One Road Initiative, aimed at developing Africa's industrial potential.

In June 2019, French carmaker PSA opened its 555 mn-euro (US$630mn) factory in Kenitra's Atlantic Free Zone, near Rabat and aims to produce an annual 100,000 cars in 2020 increasing to 200,000 by 2023. Some 116,000 jobs in the automotive sector were created by mid 2019, according to latest statistics. Cars in Morocco accounted for 27 per cent of total exports, ahead of phosphates and agriculture.

TOTAL & NOC TO EXPLORE WAHA CONCESSIONS

Total and National Oil Corporation (NOC), with the agreement of the Government of Libya, signed an agreement to implement Total's participation in the Waha concessions, in the Sirte Basin in Libya.

Under the terms of this agreement, Total commits to assisting NOC in accelerating the development of the Waha concessions by providing its technologies and expertise; by developing the North Gialo and NC 98 fields, which are expected to add production of 180,000 boe/d; and by supporting social responsibility programmes carried out by NOC in the areas adjacent to oil operations.

To that end, Total will finance contributions of US$70mn at the outset, US$30mn when North Gialo will come on stream and US$30mn when NC 98 will come on stream.

"Total is satisfied to sign this agreement with NOC, with the agreement of the Government of Libya, which definitively endorses our entry into the Waha concessions", stated Patrick Pouyanné, chairman and CEO of Total. "We will engage resolutely with NOC and Waha Oil Company in order to invest, optimise the infrastructure and develop new reserves for the benefit of all parties and notably Libya and the Libyans."

On March 1, 2018, Total acquired a 16.3 per cent working interest in the six Waha concessions by the purchase of Marathon Oil Libya Limited, a wholly owned affiliate of the US-based Marathon Oil Corporation. The Waha concessions produce 350,000 boe/d.

The acquisition gives Total access to reserves and resources in excess of 500 million boe and an exploration potential across the 53,000 sq km area covered by the concessions. The NOC (59.18 per cent), Total (16.33 per cent), ConocoPhillips (16.33 per cent) and Hess (8.16 per cent) jointly own the Waha concessions. Waha Oil Company, wholly owned by NOC, operates the asset.

BRIEFS

Egyptian energy complex opens for business

Developing high-quality research in energy at Ain Shams University in Egypt.

The Center of Excellence for Energy at Ain Shams University in Egypt opened for business, with support from the United States Agency for International Development and in co-operation with the Ministry of Higher Education and the Massachusetts Institute of Technology.

The establishment of this building is part of a commitment by the USA to support Egypt's most important priorities, including producing high-quality applied research in energy.

Transmission equipment trumps other tenders

The T&D Equipment received 255 tenders for business in quarter three of 2019.

T&D Equipment came top compared to other power tender categories in the Middle East and Africa in the third quarter of 2019, said GlobalData. This power segment had 255 tenders and a 49.4 per cent share, followed by T&D Project with 165 tenders and a 32 per cent share, according to its database. But there were less power plant tenders in the Middle East and Africa region during the same period (29), marking a drop of 36 per cent over the last 12-month average of 45.

The new G9290 motor grader from SDLG is our most powerful yet, with excellent blade pull force of 14 850 kg and blade down force of 10 879 kg. Easy to operate and maintain, it has been designed with the operator's needs in mind.

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AfDB inaugurates power substation in Rwanda

The African Development Bank, Embassy of Germany in Rwanda and the KfW Development Bank joined the Rwandan Government to inaugurate the high voltage 188 MVA Shango power substation in Kigali and its related transmission network.

The substation is part of the NELSAP Regional Interconnection Project involving Kenya, Uganda, Rwanda, the DRC and Burundi. The Rwandan component, at an estimated cost of 111 million euros, involves the construction of 286km of 220 kV lines, three substations and the upgrade of two substations. The African Development Fund, part of the African Development Bank Group, contributed 38 million euros (about 34 per cent) of the total project cost.

Image Credit: Adobe Stock

The Shango substation has been designed to play a role in the electricity distribution services in Rwanda.

The Shango substation, the biggest in the country, has been designed to play a role in the management of electricity dispatching services in Rwanda and a routing node for electricity trading between the East African neighbours. It is line with the bank's High 5 priorities, Light Up and Power Africa and Integrate Africa.

Speaking at the inauguration, held on 5 December, Martha Phiri, bank country manager in Rwanda, expressed appreciation for the strong co-operation that the bank continues to enjoy with the Government of Rwanda. The Shango substation and related network will facilitate the country's access to 1,040MW of additional power from the regional market, reducing reliance on expensive fossil-fuel generated power.

"This would benefit the people and industries in Rwanda through increased availability, reliability of clean power and possible reduction in electricity tariffs," Phiri said.

Rwanda is pursuing an ambitious target to achieve affordable, reliable and universal access to electricity by 2024 in line with the National Strategy for Transformation.

HELPING TANZANIA DIASPORA SEND MONEY HOME

Vodacom Tanzania has partnered with leading online money transfer service WorldRemit to enable ten million M-Pesa customers to receive money directly to their M-Pesa wallets from people living abroad.

The new service increases convenience for money transfer recipients in urban and rural areas of Tanzania as they can receive international money transfers directly to their phones, without the need for a bank account or internet connection.

Using the WorldRemit app, Tanzanians living abroad in more than 50 countries, including the USA, UK and Canada, can send money home 24/7 in just a few taps.

"Once the money is in their M-Pesa accounts, recipients can use it for development and other economic activities such as savings and loans, overdraft services, group savings, e-payments and many more services offered by Vodacom," said Epimack Mbeteni, Vodacom Tanzania M-Pesa director.

US$1MN SUPPORT FOR BURUNDI HYBRID PROJECT

The African Development Bank-managed Sustainable Energy Fund for Africa (SEFA) has approved a US$990,000 grant to support the preparation of a 9MW solar-hydro hybrid project in Burundi. The project consists of two plants, each featuring a solar and a hydro component as well as a local distribution network and interconnection to the national power grid. The innovative hybrid design is anticipated to regularise the power output during dry and wet season and mitigate power shortfalls caused by climate change.

The SEFA grant, which is instrumental in assuring project bankability, will support technical feasibility, environmental and social impact assessment and financial advisory for the project.

Upon completion, the project will also electrify about 20,000 households in surrounding communities through a local distribution network. By enhancing access to electricity, the project will generate socio-economic benefits especially for women and small and medium-sized enterprises.

"In addition to the energy access and socio-economic benefits, with the strong government support, this innovative project will pave the way for increased private sector participation in renewable energy to diversify the energy mix in Burundi," said Wale Shonibare, the bank's acting vice-president for Power, Energy, Climate, and Green Growth.

Welcoming SEFA's support, Daniel Brose, president and CEO of Songa Energy Burundi said, "We are privileged to have secured this funding which is instrumental to the further development of our portfolio. This funding will bring us and the people of Burundi one step closer to our collective goal of widespread rural electrification in a country that has one of the lowest rates of access to electricity in the world."

BRIEFS

Image Credit: Corteva

Larger-scale commercial farming in Ethiopia could improve productivity.

Increasing yields in Ethiopia

The policy to drive larger-scale commercial farming in Ethiopia is a step towards improving productivity and yield per hectare, stated agricultural firm Corteva.

Investments in irrigation projects and transport infrastructure will, in the longer term, be key to driving the growth of agriculture. In the short term, encouraging farmers to use improved seed and pesticide, and to learn new-age farm management practices, could help to vastly increase yields.

Sudan to adopt solar irrigation pumps

Image Credit: Adobe Stock

The pump project meets the Sudanese government's renewable energy objectives.

The African Development Bank's Board of Directors has approved a grant to the government of Sudan to accelerate the adoption of solar-powered irrigation pumps in the country's West Kordofan and North Kordofan states.

The project will enable farmers' adoption of renewable energy technology through the installation of 1,170 PV irrigation pumps, the establishment of maintenance and repair workshops for the pumps, and the supply of equipment for a pump testing lab.

Swedish Stirling and Samancor Chrome sign deal on smelter facility in South Africa

Swedish Stirling AB has signed an agreement with the South African company Samancor Chrome's subsidiary TC Smelter Proprietary Limited (Samancor Chrome) for the installation of a pilot facility with one PWR BLOK unit at the TC Smelter facility in South Africa. The facility is intended to be commissioned during Q2 2020.

Under the terms of the agreement, Swedish Stirling will install a pilot energy conversion facility consisting of one PWR BLOK 400-F unit at the South African ferrochrome producer Samancor Chrome's TC Smelter production facility.


Image Credit: Adobe Stock

Samancor Chrome will purchase all the electricity that the facility generates at a set price.

Swedish Stirling will own and operate the facility, while Samancor Chrome will provide residual gas from TC Smelter as well as purchase all the electricity that the facility generates at a set price. The agreement runs for three years from the date the facility is operational. The agreement will provide Swedish Stirling with revenue running to just under MSEK 2/year (KEUR 180/year), i.e. MSEK 6 (KEUR 540) over the duration of the agreement.

The agreement was preceded by an inquiry submitted by Samancor Chrome to Swedish Stirling earlier this year related to the startup of an energy conversion facility at TC Smelter. With its five major production facilities in South Africa, Samancor Chrome is one of the country's two top ferrochrome producers.

"This marks our second PWR BLOK reference facility installed in South Africa in quick succession, possible thanks to the flexibility in the renegotiated agreement with Afarak Mogale, plus the opportunity to show Samancor Chrome the full potential of the technology in a live setting. A future goal, of course, is to install full-scale facilities at all of Samancor's South African production facilities," said Gunnar Larsson, CEO of Swedish Stirling.

Swedish Stirling has previously signed an agreement and declaration of intent with South African ferrochrome producers Afarak Mogale and Glencore for two facilities comprising 7 and 25 PWR BLOK units, respectively. In both cases, the agreements relate to energy conversion services, where Swedish Stirling's PWR BLOK units convert the ferrochrome companies' residual gases into electricity that the companies then buy.

AFRICAN DEVELOPMENT BANK SUPPORTS HYDRO-POWER PROJECT IN MADAGASCAR

The African Development Bank has approved a Partial Risk Guarantee (PRG) of US$100mn in support of the Sahofika hydro-power project in Madagascar. The project is expected to add 205MW of renewable energy generation capacity to the national grid, with 1,570GWh of renewable power annually. In addition, the project is expected to displace 90 per cent of thermal energy generation, benefitting more than two million people.

Wale Shonibare, the Bank's acting vice-president for Power, Energy, Climate Change and Green Growth, said, "The Bank's support to the national utility, JIRAMA, through the PRG provides much needed credit enhancement as JIRAMA continues to build its track-record as a bankable electricity off-taker that will in-turn mobilise investments into Madagascar's energy sector."

MALAWI'S SOLAR POWER PLANT GETS US$67MM FUNDING

One of Malawi's first solar projects has reached financial close after attracting investment volume totalling US$67mn. Initial site works have begun in Nkhotakota, and construction of the first phase is targeted for completion by March 2020. Once complete, the project will add 46MW of clean energy to the local power supply.

Developed by UAE-based Phanes Group in collaboration with responsAbility Renewable Energy Holding and the Overseas Private Investment Corporation (OPIC), the project was the result of the first Power Purchase Agreement (PPA) signed with Malawi's national utility (ESCOM) in February 2019. This was Malawi's first competitive tender in the power sector, and the PPA is projected to last 20 years. Phanes Group and its partners were awarded the project in May 2017 following an international tendering process which attracted bids from 21 companies globally. Phanes Group will work closely with its partners throughout the development of the project: responsAbility Renewable Energy Holding is supporting with the provision of equity financing, while also taking on the role of co-developer. OPIC is contributing to debt financing, and Natsons is the local development partner.

"This project will empower underserved communities in some of Africa's poorest regions through access to affordable, reliable, and diversified energy," said Tracey Webb, OPIC vice-president for structured finance and insurance. The Nkhotakota project is part of a push by the Malawian government to use solar power to strengthen the country's electricity infrastructure. Only 15 per cent of the population has access to power, and the national capacity is estimated at 362MW. The capacity added will make a contribution to the government's target of increasing power access to 30 per cent of the population by 2030.

BRIEFS

Rio Tinto to resume operations at RMB, South Africa


Image Credit: Rettet den Regenwald e.V./Flickr

Rio Tinto said regular production will be reached in early 2020.

Mining company Rio Tinto has started the process of resuming operations at Richards Bay Minerals (RBM) in South Africa after cutting back because of security concerns for its workers.
This follows discussions led by the premier of KwaZulu-Natal, Sihle Zikalala, involving all stakeholders focused on securing stability in order to address the issues in the community and provide the stable environment necessary for RBM to resume operations.

Zambia & DRC sign MOU for road and bridge project

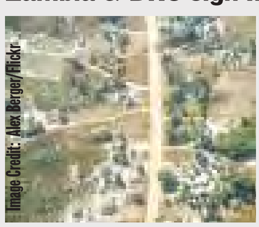


Image Credit: Alex Berger/Flickr

The project will be handed over to the two governments on completion.

The governments of the Republic of Zambia and the Democratic Republic of Congo (DRC) have signed a memorandum of understanding (MoU) for the Kasomeno-Mwenda toll road and Luapula Bridge project. The project will create direct and indirect jobs, decongest the Kasumbalesa Border Post, increase direct revenue for the two countries, enhance border security and improve trade. The toll road and the bridge project will be done on the build, operate and transfer (BOT) basis.

South African countries agree on business continuity with UK


Image Credit: Rudi/Adobe Stock

The economic partnership agreement aims to solidify the strong trade relations and partnership between the southern African nations and the UK.

The SACU Member States (Botswana, Eswatini, Lesotho, Namibia and South Africa) and Mozambique on the one part, and Great Britain and Northern Ireland on the other part, concluded the negotiations on the economic partnership agreement in September 2019 in Gaborone, Botswana.

The agreement is intended to provide continuity and certainty in trade amongst the parties, when the UK is no longer a member of the European Union (EU).

The agreement and the MoU were signed by Bogolo J Kenewendo, minister of investment, trade and industry of Botswana; Christian M Nkambule, high commissioner of Eswatini to the UK; Rethabile M Mokaeane, high commissioner Lesotho to the UK; Tjekero Tweya, minister of industrialisation, trade and SME development of Namibia; Filipe Chidumo, high commissioner of Mozambique to the UK; Ebrahim Patel, minister of trade and industry of South Africa and Elizabeth Truss, secretary of state for international trade of the UK.

The economic partnership agreement aims to solidify the strong trade relations and partnership between the SACU member states, Mozambique and the UK. It further reflects the commitment on both sides.

The ministers reaffirmed the importance of ensuring a smooth implementation of the agreement to achieve its intended objectives, through the finalisation of the ratification processes.

NEW ROAD PROJECT UNDERWAY IN BOTSWANA

Area MP Pono Moatlhodi has updated the Tonota residents on the planned construction of the US$70.27mn Tonota-Semotswane-Mandunyane-Borolong-Chadibe-Mathangwane road.

As reported on the Botswana Daily News, the project includes the construction of a flyover at Molotong junction along the Tonota/Francistown road and another at Chadibe rail crossing.

Moatlhodi further added that 17 households at Semotswane, 59 households at Mandunyane and 71 households at Shashemooke would be affected by the project.

Quoting Moatlhodi, the source noted that the project is intended to temporarily alleviate shortage of unemployment in Tonota and Shashe West constituencies. Additionally, a plot had been secured for the construction of a hospital, reported the source.

ANGOLA CABLES AND CTM TO EXPLORE DIGITAL CROSS CONTINENT COLLABORATION

CTM, a subsidiary of CITIC Telecom International Holdings Limited, and Angola Cables have signed a MoU to enhance digital opportunities for business between Macau, Mainland China, African Portuguese-speaking countries and Brazil.

Angola Cables has a submarine cable network linking the continents in the Atlantic region, with high availability and good quality, it is owner of datacenters, in Angola and Brazil and it is promoting the southern Atlantic digital hub.

The partnership aims primarily to establish the terms, to promote strategies and opportunities to link the Greater Bay Area to Africa and the Americas, in particular Portuguese-speaking countries.

Angola Cables CEO, António Nunes said that discussions and co-operation between the parties can be instrumental in reshaping the digital ecosystems within Africa, to leapfrog the existing gap with the rest of the world.

CTM and Macau could play a very important role, to enable this link and open doors to the Orient. ‘’Expanding connectivity across the southern hemisphere has the potential to unlock the many advantages and benefits brought about by secure, digital access – from the promotion of foreign trade to robust economic development,” added Nunes. “Advancing technology in subsea cables networks have provided a backbone to support data centres and digital ecosystems that will connect our new, digitally-driven world.”

CTM CEO Vandy Poon commented that the potential partnership reflects the company’s positioning to actively participate in the realization of Macau’s designs in the context of the Greater Bay Area and the One Belt One Road Initiative.

BRIEFS


Image Credit: Image credit: kamilpetran/Adobe Stock

Zimbabwe is set to boost its power generation.

Zimbabwe-Chinese JV to construct 50MW power plant

Zimbabwe Energy Regulatory Authority (ZERA) has announced the joint venture (JV) Zimbabwe Zhongxin Electrical Energy Private Limited (ZZEE) with Zhongxin Electrical Energy Private Limited to establish a 50MW coal-fired power plant.

The company will be based in Hwange in the western part of the country. The ZZEE license, which was issued on 22 November 2019, will allow the company to operate for 25 years.

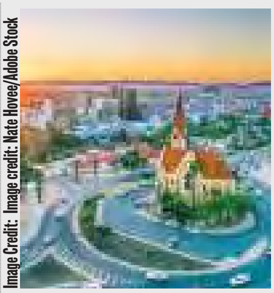


Image Credit: Image credit: Nate Hovee/Adobe Stock

Namibia has potential for vast investment opportunities.

Namibia and Britain to solidify trade ties

Namibia and Britain seek to strengthen bilateral relations and trade ties post-Brexit, said Britain's joint minister of state at the Foreign and Commonwealth Office and the Department for International Development Andrew Stephenson. He said this to Namibian President Hage Geingob at the State House.

Geingob highlighted the country’s potential for vast investment opportunities across various

ECOWAS hails the success of AfDB investments in the region

Image Credit: Adobe Stock

West Africa's economy grew by 3.3 per cent in 2019.

The African Development Bank's (AfDB) investments in West Africa are yielding remarkable results, the President of the Economic Community of West African States (ECOWAS), Jean-Claude Kassi Brou, announced in Abuja on Saturday.

He was speaking at the bloc's fifty-sixth ordinary session, attended by regional heads of state and government on 21 December.

Brou said the bank had provided "invaluable technical and financial interventions…in the implementation of numerous projects and programmes".

The region's economy is showing positive achievements, reaching 3.3 per cent growth in 2019, he said, "despite facing significant challenges, particularly with regards to security. ECOWAS member states have demonstrated remarkable resilience".

In a speech, Nigeria's President Muhammadu Buhari assured ECOWAS that his country was committed to regional integration, requesting members to channel collective energies towards accelerating sustainable peace, security, stability and inclusive economic growth.

"It is always gratifying when our regional bloc comes together to advance our agenda for regional integration and promote the socioeconomic development of our subregion," he told delegates.

For his part, the President of the AfDB Akinwunmi Adesina put the bank's current portfolio of investments in West Africa at US$20bn, with a strong focus on critical sectors.

"The AfDB has always been there at the right time, with the right product, for the right needs of countries," Adesina said.

"Such was the case in Nigeria, where the bank helped to provide US$600mn of budget support that helped it get out of recession, a tough time for Nigeria. The bank also provided US$500mn to establish the Development Bank of Nigeria. Last week, we provided US$280mn to support social investments in Côte d'Ivoire," he added.

"You can always count on the African Development Bank – your Bank," Adesina assured delegates.

The bank's support in the region includes 525 million euros for the construction of the Blaise Diagne international airport in Senegal and US$120mn for the new Terminal 3 for Kotoka international airport in Ghana.

The AfDB also provided US$30mn for the construction of the Mandela Praia airport in Cabo Verde, and US$130mn for Air Côte d'Ivoire to acquire a new aircraft fleet. Other investments include 60 milion euros for the Lomé Container Terminal port and another US$96mn for the new landmark Senegambia Bridge that now links the Gambia and Senegal. A 183 million-euro facility was critical for Senegal's Regional Express Train.

During the bank's second Africa Investment Forum held in November 2019, the institution and its partners mobilised investments of US$2.6bn for the development of the Accra Sky Train and US$251mn towards the Lagos Cable Car Transit System projects. Adesina also highlighted the bank's US$1.5bn financing for the development of major transport corridors to improve connectivity in the ECOWAS region. This includes the construction and rehabilitation of 4,000km of main corridor roads.
The Lagos-Abidjan Highway, for instance, will become a reality, Adesina added.

NIGERIA AND GHANA TO WATCH FOR KEY PROJECTS

In its African Energy Outlook 2020 report launched last month, the African Energy Chamber highlighted the importance of increased infrastructure capacity in Africa's long-term industrial development.

Highlighting the US$12bn Dangote Refinery in Nigeria and Ghana's Tema LNG Terminal, the chamber noted the essential role such projects play in revamping the sector and creating opportunities for private sector investors.

"At a time when the low oil price is gripping treasury revenues, private capital is developing key oil and gas infrastructure projects which could have a significant impact on the African energy and power landscape over the next decade," the report said.

On the Dangote Refinery, the chamber called attention to the current state of Nigeria's infrastructure and the contribution the project would have specifically as the country works towards tripling its refining capacity to 1.5 million bpd by 2025 as a means to reduce its reliance on fuel imports.

To this, the report said, "the refinery's tank farms are set out for completion in the last quarter of 2019 and they may be used as a depot before the refinery's production starts. This would provide an immediate increase to fuel storage capacity."

Ghana's determination to become sub-Saharan Africa's first LNG importer in 2020 is set to become a reality as the Tema LNG terminal project nears completion. The project will cover 25 per cent of Ghana's total electricity generation capacity, with gas providing a cheaper alternative to oil.

"The deal with Rosneft company enables Ghana to diversify gas imports away from Nigeria, which has consistently failed to provide the agreed level of supply since the West African Gas Pipeline started operating in November 2011," the chamber explained.

BRIEFS

Identities for unbanked would add to region's GDP

Image Credit: Adobe Stock

Nigeria, Côte d'Ivoire and Madagascar would benefit from a GDP boost if the unbanked population had financial identities.

A new report projects that establishing financial identities for the "unbanked" population across sub-Saharan Africa would add an extra US$43bn to annual GDP for the region. This figure equates to an average increase in GDP of US$41 per person. Oxford Economics, which authored the report for identity tech firm Juvo, identified Nigeria (US$7bn GDP uplift), Côte d'Ivoire and Madagascar (both US$3bn uplift), as the stand-out markets for this growth.

Dangote ends 2019 US$4.3bn richer

Image Credit: Dangote Industries

Aliko Dangote is the 96th wealthiest man in the world.

Aliko Dangote, Africa's richest man, became US$4.3bn richer in 2019 as his fortune continued to grow on the back of investments in cement, flour and sugar.

The 62-year-old Nigerian businessman ended the decade with a net worth of almost US$15bn, making him the 96th wealthiest man in the world, according to the Bloomberg Billionaires Index. Dangote is now close to completing one of the world's largest oil refineries in Nigeria.

Mining reform for Burkina Faso and Mali

Although Burkina Faso and Mali have recently modified their mining codes, they are considered to be two of the lowest risk African countries for mining operations in the latest Resource Nationalism Index 2019 edited by Verisk Maplecroft.

The gold rush

In the space of just a few years, gold production in Burkina Faso has increased from 780kg to 59.3 tonnes and the country has become the fifth largest gold producer in Africa, with the third highest level of exploration in the continent. Existing mines had estimated reserves of about 26 tonnes, but recent discoveries suggest that untapped reserves are far higher.

Currently, and according to the International Monetary Fund (IMF), Burkina Faso has the largest number of identified but as yet unmined deposits in West Africa. Although the physical characteristics of Burkina Faso's gold deposits are considered "less than remarkable", with a deposit grade of about 2 g/t (grams per ton), some projects promise very high profits. The Fekola mine is a recent example of a high-grade gold deposit (around 2.5 g/t) discovered over the past few years that produces at an average operating cash cost of US$373/oz (second quarter of 2019).

For its part, Mali is a long-established African gold producer with a production of 61.2 tonnes in 2018, making this country the fourth largest African gold producer after Ghana, South Africa and Sudan. With gold reserves estimated at 800 tonnes, an equivalent of 13 years' production at the current rate of around 60 tonnes per year, Mali continues to attract gold mining investments.

New mining regulatory framework

Acknowledging the fact that the development of these vast gold resources holds enormous potential for local economic development, Mali and Burkina Faso have recently modified their mining legislations to maximise the benefits of mining for both the state and local communities.

On June 26, 2015, Burkina Faso's National Transitional Council (Conseil National de Transition, CNT), acting as Parliament, approved new mining legislation, thus joining the Africa-wide wave of mining law reforms which place an emphasis on transparency and accountability by both mining companies and host governments.

More recently, the Government of Mali adopted a new mining code on August 21, 2019 which is intended to bring about a "substantial increase" in the contribution to the Malian economy from the mining sector, and especially from the gold industry.

Redefining the national interest of African nations

Referred to as the fourth generation of African mining codes, these recent modifications in the mining legislation of Burkina Faso and Mali reflect a continent-wide mining reform which redefines the state's national interest for the development of its natural resources. ■

Upcoming Events Calendar 2020

FEBRUARY

3 - 6

MINING INDABA
Cape Town, Africa
www.miningindaba.com

14 - 16

ITME AFRICA
Addis Ababa, Ethiopia
www.itme-africa.com

24 - 26

POWERING AFRICA
Maimi, USA
www.poweringafrica-summit.com

MARCH

3 - 4

AFRICA ENERGY INDABA
Cape Town, South Africa
www.africaenergyindaba.com

10 - 14

CONEXPO-CON/AGG
Las Vegas, America
www.conexpoconagg.com

17 - 19

PROPAK EAST AFRICA
Nairobi, Kenya
www.propakeastafrica.com

17 - 18

SECUREX WEST AFRICA
Lagos, Nigeria
www.securexwestafrica.com

APRIL

9 - 11

INTERPLAST-INTERPACKPRINT 2020
Dar es Salaam, Tanzania
www.mxmexhibitions.com/interplastpackprint_tanzania

21 - 23

WAITEX 2020
Accra, Ghana
www.waitex.com.gh

MAY

12 - 14

AFRICAN UTILITY WEEK/ POWER-GEN AFRICA
Cape Town, South Africa
www.african-utility-week.com

JUNE

2 - 4

SECUREX SOUTH AFRICA
Johannesburg, South Africa
www.securex.co.za

3 - 5

WAMPEX 2020
Accra, Ghana
www.wampexghana.com

EXPO 2020 TO CREATE OPPORTUNITIES FOR GLOBAL COMMUNITIES

Her Excellency, Reem Al Hashemi, director general of Expo 2020 has confirmed that the expo will host the largest number of African countries to participate in a world expo. Participating African nations include countries such as Rwanda, Uganda, and Zambia. The expo team has pledged to work closely with each delegation in order to curate a narrative and experience true to each respective nation and enable each country to reflect its unique identity to the international community.

Image Credit: AdobeStock

Expo 2020 will attract the largest number of African countries to participate in an expo to date.

Expo 2020 is expected to host over 25 million visitors during its six-month run. With 70 per cent of visitors projected to come from outside the UAE – the largest proportion of international visitors in the history of the event. Its location, Dubai, is expected to be a major draw as more citizens of African and Southeast Asian nations are set to attend.

Africa's non-oil trade with Dubai has grown steadily over the last decade, accounting for 10.5 per cent of the emirate's total non-oil foreign trade in 2018, and the recent signing of the African Continent Free Trade Agreement will serve to spur further growth and trade between the respective regions. Furthermore, a report released ahead of the recent Global Business Forum on Africa stated that the top UAE exports to African markets in 2017 by value include plastics and rubber (US$925.3mn), metal products (US$407.7mn), sugar (US$190.2mn), beauty products and perfumes (US$165.7mn), among other sectors.

Untapped potential

Despite increased trade with the region, recent analysis from Dubai Chamber of Commerce and Industry estimates that the current untapped potential of UAE exports to Africa to be US$3.6bn. In Kenya, East Africa's manufacturing hub, for example, the plastic and rubber products industry alone has a potential to reach an US$88.2mn in annual trade volumes. Similarly, sugar exports to Egypt could hit US$66mn if the trade opportunity were fully realised. Given the Dubai Chamber of Commerce's strong network across the region with established offices in Kenya, Mozambique and Ethiopia as well as DP World's growing footprint in over 10 African cities, there has never been a more opportune time for African economies to leverage Dubai's strategic location as a hub linking developed and emerging markets and the expo's platform to tap into new trade opportunities.

For more information visit www.expo2020dubai.com

EGHOSA ORIAIKHI MABHENA NOMINATED IN TOP WOMEN CEOS IN AFRICA

Eghosa Mabhena CEO of Puma Energy.

Puma Energy, the globally integrated midstream and downstream energy company, is delighted to announce its CEO Eghosa Oriaikhi Mabhena has been nominated in the Top 100 Women CEOs in Africa. The ranking highlights and recognises the accomplishments of women CEOs from 24 countries across the continent.

Eghosa was appointed as CEO of Africa for Puma Energy in July last year, following an executive director role at Baker Hughes for its sub-Saharan Africa oilfield services business. She has also worked at Schlumberger for over nine years, working across Europe and North America.

In her current position at Puma Energy, Eghosa plays an integral role on the executive committee and is responsible for all 18 country operations across Africa. Her work ranges from government relations through to developing strategic relationships with other critical stakeholders across the continent, including logistics, industry bodies, and oil and gas operators.

Eghosa said, “I am absolutely delighted to be nominated for this list, and to feature alongside so many other inspiring women in leadership roles across Africa. I feel humbled to be standing on the shoulders of many great women who have broken down barriers before me both personally and professionally.”

The top 100 Women CEOs in Africa is compiled by Reset Global People and Pulse editors with support from the PR Agency, Avance Media.

FRANCE PLANS TO END THE CFA FRANC IN WEST AFRICA

French President Emmanuel Macron.

A new common currency in West Africa known as the ECO will be launched in 2020, according to French President Emmanuel Macron.

The President announced the decision while on a whistlestop tour of Cote d’Ivoire on 21 December.

The CFA franc is currently being used in eight west African and six countries in central Africa.

“I wanted to engage France in a historic and ambitious reform of cooperation between the West African economic and monetary union and our country. We do it for African youth,” Macron wrote on his official Twitter page. Kristalina Georgieva, the managing director of the IMF, said, “I welcome the reforms to the WAEMU’s CFA franc currency arrangement that were announced by Presidents Ouattara and Macron in Abidjan. They constitute a key step in the modernisation of long-standing arrangements between the West African Economic and Monetary Union and France.”

TOTAL AND SONANGOL FINALISE AGREEMENT TO DEVELOP RETAIL OPERATIONS IN ANGOLA

Total plans to develop retail operations in Angola.

Total has announced the closing of the agreement signed on 21 December 2018 with national oil company Sonangol to develop petroleum product retail operations in Angola. The closing follows the approval received from antitrust authorities and the related legal establishment of Total Marketing & Services Angola S.A., a 50-50 joint venture between Sonangol and Total.

Initially, they will focus on marketing fuel and selling lubricants in the B2C and B2B segments, notably through the deployment of a TOTAL-branded network of service stations, the first of which was inaugurated in the capital, Luanda, last December.

Sonangol is bringing 45 existing service stations located in urban areas and along highways in ten coastal and central provinces. On its part, Total will provide the necessary financial resources to meet the partners’ objective of doubling the number service stations over the next five years. They will develop B2B business and lubricant sales at the same time.

“We are pleased and proud to celebrate the agreement’s closing today. The development of retail operations in Angola, a key country for Total, alongside our long-term partner Sonangol opens promising prospects for our joint venture,” said Momar Nguer, president of marketing and services and member of Total’s executive committee.

ANN FANDOZZI BECOMES CEO OF RITCHIE BROS

Image Credit: Ritchie Bros

Ann Fandozzi is set to advance Ritchie Bros’ transformation as a tech-enabled global business.

Ritchie Bros, the world’s largest industrial auctioneer and a leading used equipment seller, announced that Ann Fandozzi has become CEO and joined the company’s board of directors, from January 6, 2020.

Most recently, Fandozzi was CEO of ABRA Auto Body and Glass, a leading national damaged vehicle repair company, where she engineered a step-change in profitability and laid the foundation for an all-new customer experience through technology.

“Ann is an exceptional leader with a proven track record of designing and executing winning strategies and driving profitable growth”, said Bev Briscoe, chair of the board. “She brings a strong customer focus, deep experience in technology, and outstanding management capabilities that will further Ritchie Bros’ strategic transformation as a multi-channel, technology-enabled global business.”

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

UNSMIL CONVENES MEETING OF LIBYAN ECONOMIC EXPERTS

Image Credit: alain baron/Adobe Stock

The Libyan experts agreed that the Libyan economy was under duress due to the institutional fragmentation caused by the conflict.

UNSMIL convened a meeting of 19 Libyan economic experts representing the main Libyan financial and economic institutions as well as the different economic sectors.

The experts, who took part in the meeting, were selected based on their capacity to represent interests from across the Libyan political and geographic spectrum.

The Libyan experts agreed that the Libyan economy was under duress due to the institutional fragmentation caused by the conflict and that this was having an increasingly detrimental impact on the daily lives of Libyans. It was agreed that any comprehensive political settlement would require a mechanism to unify financial and economic policy as well as the institutions.

The participants discussed a proposal to establish a Libyan Expert Economic Commission (LEEC). This proposal was initially developed in preparation for the National Dialogue and has now been introduced in the Berlin process. The participants provided input on the prospective Terms of Reference of the LEEC including ideas on its purpose, mandate and structure.

The Berlin process is the second step in the three-step initiative to bring an end to the conflict laid out by SRSG Ghassan Salame in his July 2019 briefing to the Security Council. The third step is a Libyan-led process to reach a comprehensive settlement that addresses the underlying drivers to the Libyan crisis. This meeting in Tunis is part of the economic basket, complemented by a military track and a political track. UNSMIL is working to activate all three of these Libyan-led tracks this month.

Representatives from the international community were invited to portions of yesterday's meeting to lend their support.

BORNO, NIGERIA, STARTS FIRST FLYOVER CONSTRUCTION

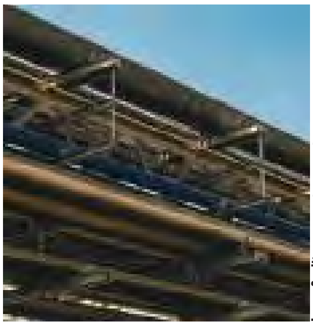


Image Credit: nskyr2/Adobe Stock

The flyover aims to ease traffic, linking three routes.

The Borno State Government has started the construction of the first flyover in the North-east region.

Launching the construction, the state governor Prof Babagana Umara said that the flyover aims to ease traffic, linking three routes. The flyover will connect Maiduguri to Dikwa-Ngala economic road that leads to neighbouring countries, such as Cameroon and Chad.

The state governor further announced that a second flyover would commence early next year, around the Post Office Roundabout at the centre of Maiduguri. As reported in *This Day*, the flyover, once operational, is set to increase the number of vehicles on the road caused by population growth.

Additionally, the Nigerian government aims to complete and start many other road projects this year, stated the governor.

The Chinese construction firm Eighteenth Engineering International Limited received the contract for the construction of the flyover at the cost of US$12mn from which 30 per cent mobilisation fee has been released.

AFDB'S US$20MN INVESTMENT IN METIER FUND FOR RENEWABLE ENERGY PROGRAMME

Image credit: Andrej/Adobe Stock

The aim is to accelerate the renewable energy programme.

The African Development Bank (AfDB) has approved a US$20mn investment in the Metier Sustainable Capital International Fund II, which channels funds to renewable energy and resource-efficient infrastructure projects across sub-Saharan Africa.

The Bank's funding will contribute to the production of an additional 178.5MW of renewable power for commercial and residential use. It will also create opportunities for industrial wastewater treatment and waste-to-energy generation. The Fund will meet the Bank's strict environment and safeguards standards to ensure potential risks are adequately mitigated.

Wale Shonibare, AfDB's acting vice-president for power, energy, climate change and green growth, said, "Metier has extensive experience in developing and financing renewable energy projects with strong technical partners and co-developers in Southern Africa. We are pleased to join other investors in supporting their expansion into new African markets to help unlock the vast renewable potential of the continent."

He said that the investment was part of the Bank's efforts to alleviate financing constraints in the renewable energy sector.

Metier is a fund manager with a track record of deploying more than US$550mn in African countries, including solar, wind and hydropower projects in Southern and East Africa.

POLICE IN EKURHULENI, SA, DISRUPT ILLEGAL MINING ACTIVITIES

Image credit: sfmthd/Adobe Stock

The police is expected to intensify such operation in the province.

A disruptive operation focusing on illegal mining was conducted in Benoni, Ekurhuleni, where police confiscated commercial explosives suspected of being used during the commission of illegal mining, iron pots, gas bottles, phendukas, as well as food items.

Members of the SAPS Bomb Disposal - Explosives Unit from Germiston who were part of the operation, had to urgently destruct some of the explosives which they found were primed and ready to be initiated.

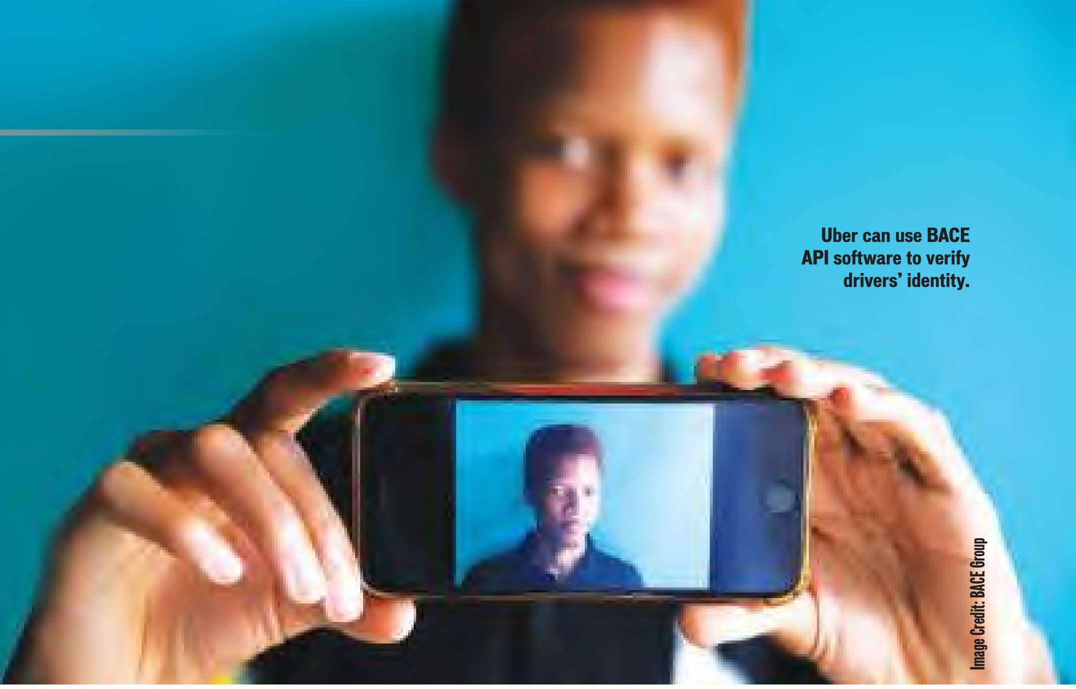
The explosives experts found that it would have been too risky to transport the primed explosives as any friction, heat or shock could set them off, exposing people to injuries and death.

About 40 blasting cartridges, seven connectors capped fuses and one length of detonating fuse was confiscated.

Around 13 undocumented foreign nationals were taken in for verification of their stay in the country, while three persons were issued with fines for running illegal liquor outlets which were shut down and alcohol seized.

Additionally, police found food, bottled water and grocery items suspected to be provision for illegal miners and these items were also seized.

Gauteng provincial commissioner, lieutenant general Elias Mawela has welcomed the successes emanating from this operation and assured the public that police will continue to intensify such operations in the strife to decisively deal with illegal mining, which is contributing to serious and violent crime in the province.



Uber can use BACE API software to verify drivers' identity.

Image Credit: BACE Group

Identity check

Entrepreneur Charlette N'Guessan talks to *African Review* about developing facial recognition software to tackle identity fraud.

Congratulations on being shortlisted for the Africa Prize for Engineering Innovation, what does this acknowledgement mean to you and the company?
We are really happy and proud to know that the work we are doing at BACE Group is recognised by a great organisation such as the Royal Academy of Engineering. It is also an opportunity for us to gain exposure for discovery in new markets across Africa, by potential clients globally, as well as investors.

Tell us about your background as a tech entrepreneur. How was BACE API first developed? How does it work?
I graduated with an electronic and software development background. BACE has four founders and we are all software engineers, and we decided to build the BACE API because we noticed that online identity fraud is increasing on the continent at a staggering pace and financial institutions are spending a lot of money to meet the "know your customer" regulatory requirements since the majority of African countries have issues with identity schemes.

The BACE API is a piece of software that uses facial recognition powered by artificial intelligence, which enables financial institutions to verify their customers' identities even remotely through a live link or a photograph. Our API is built on high security standards and we believe that the BACE API will help financial institutions to fight against fraud and give to local citizens more access to financial services in a most secure way possible.

Would you say the facial recognition software is a game-changer in tackling identity fraud and cybercrime in Ghana?
Most definitely, and not just in Ghana, I will say across the globe. Facial recognition is part of the biometric technologies that define the uniqueness of humans. Facial recognition is making inroads into building robust security platforms. I would say that facial recognition powered by artificial intelligence is one of the most robust and powerful technologies that will be able to beat fraudsters and guarantee a good customer experience.

Which companies have adopted the software so far? Where do you see it mostly being used?
Our clients are in the financial industry, none of which we can currently disclose. However, we have studied other industries and we noticed that our solution can be used by organisations in the public sector, such as transport. For example, companies like Uber can use our API when onboarding their drivers for identity verification, security companies that provide security hardware solutions can integrate BACE API to identify intruders or unknown persons using video surveillance and telco companies can use our solution for online sim card registration.

Do you have any plans to roll out the software to other African countries?
Yes, we are actively looking for partnerships to help us to extend our services in other countries, especially countries in the West African region, which is our initial target market, then Kenya, Rwanda and South Africa. However, we are happy to receive proposals from any interested parties across the globe.

Image Credit: BACE Group

Charlette N'Guessan, co-founder of BACE Group.

> "Facial recognition is making inroads into building robust security platforms"
>
> CHARLETTE N'GUESSAN, FOUNDER OF BACE GROUP

What impact will this new software have on students in helping them to access financial services?
We have started working with universities as a data source to enable their students to verify their identities using their student ID via our API. According to financial institutions, they are unable to give access to their services to students (usually foreign students) because they are not able to verify their identities. In Africa the majority of local students do not have a national ID or passport, and foreign students' IDs are not easily verified. It's really difficult for financial institutions to serve this tranche of the population. Currently, universities are providing student ID cards to identify their students, but this data is not digitised in a way that is useful outside the context of the universities, and it is creating a gap between financial institutions and students.

The main goal of the BACE API, which is identity verification, in this context, will help students both foreign and local, gain access to financial products using their student ID, verifiable with their face and validated against their university database, since that is a secure data source that validates their identity. The possibilities and benefits of such access are endless, namely the following but not limited to; student credit and specially crafted financial products for students. ■

For more information on the BACE API software contact www.bacegroup.com

Brazil and Africa move closer

Image Credit: Adobe Stock

Natalie Dias is the manager of Standard Bank's representative office in São Paulo, Brazil. She spoke to Stephen Williams about her bank's work.

As the continent's relationship with Brazil moves ever closer, the role of Africa's largest bank is pivotal to underpinning trade links. Natalie Dias, who manages Standard Bank's office in São Paulo, Brazil's commercial capital, met with *African Review* on the sidelines of the Brazil-Africa Forum, held in the city's World Trade Center.

The Brazil-Africa Forum is an annual meeting of government, business leaders and international non-government organisations with an interest in south-south co-operation in general and Brazil-Africa co-operation in particular. The focus of this important forum, organised by The Brazil-Africa Institute and now in its seventh year, was the role of agriculture in spurring economic growth.

"The sole objective of our operations here is to connect Brazil into Africa," Natalie Dias explains. "So we try to do two things – we try to finance the trade flows between the two regions, either financing imports from Africa to Brazil or financing exports from Brazil to Africa.

"We can also provide banking services to Brazilian companies that are either already operating in Africa or are willing to expand into the continent. Primarily, we are the national office that handles the relationship of Brazilian clients doing business with Africa."

Expanding on what the nature of this trade is, Dias says that the bank's portfolio is mainly comprised with the trade in extractive resources, such as minerals and metals, but including significant oil and gas trading.

However, and interestingly, Dias believes that agro-business will become increasingly important in the future as Brazil has a very good track record in the technology to develop tropical agriculture. "We would like to take several of the major Brazilian agro players to actually produce in and do more business with Africa," she says.

"An important part of our job is actually to engage with those players and show to them or increase their awareness about the opportunity of agri-business in Africa and also to try to connect the dots to make the potential become a reality."

Standard Bank is well placed to provide such advisory services. Not only is the bank the largest in Africa in terms of assets, it has a presence in 20 African countries including its home market. It also opened for business last August in Côte d'Ivoire.

Angola and Mozambique

But what of the countries that appeal most to Brazilian agri-business investors? "Angola and Mozambique stand out," says Dias, "not only because of the language they share but also because the two countries currently offer some very interesting opportunities in agriculture.

"Mozambique has discovered very large natural gas reserves which will put Mozambique among the top five producers of LNG in the next ten years or so, so the GDP of Mozambique is expected to grow significantly in the next 30 years just by deploying its LNG resources.

"We think that for Brazil the major potential in Africa lies in agriculture because with economic growth there is going to be a huge demand for food. In Mozambique, the country is developing the infrastructure to export to neighbouring countries, infrastructure such as the Maputo corridor in the south. In the north, the multi-national Brazilian company VALE is involved with building the US$5bn Nacala corridor (railroad) linking the interior to the Indian Ocean which opens up the possibility of exporting agricultural production to Asian markets."

Dias is just as bullish about opportunities in Angola. She points to a wave of major privatisation programmes the government is undertaking including several state-owned enterprises in the agricultural space.

Nigeria is also firmly on Brazilian investors' radar. What is attractive about Nigeria is a large population and the significant progress made by government in outlining the sort of policies to encourage investment and to foster the development of the agricultural sector.

"The soil and climate conditions of Brazil are the same as Central Africa," Dias points out. "We think that is a natural advantage as Brazil has been able to develop agriculture in an environment that is very similar to Africa's Savannah. Brazil has mastered the technology and it is very easy to replicate those techniques in the continent.

Brazil's industrial expertise is also an important aspect of Brazil-Africa relations. One of Brazil's major original equipment manufacturers (OEM), Dias reminded us, is the Zest WEG group that has developed complete solutions, from water collection for farming to full systems for process monitoring, and ensuring high performance for the farming industry.

But it is not just the agricultural sector that attracts WEG's interest in African markets. It manufactures a range of electrical equipment including generators, switchgear, and transformers from manufacturing facilities in Cape Town.

And further underlining Brazil's high-tech expertise is Embraer that manufactures commercial, executive and defence aircraft.

Africa accounts for much of its world-wide sales of Embraer's single aisle short/medium haul passenger jets. Embraer has sold its aircraft to EgyptAir, Kenya Airways, LAM Mozambique, Air Côte d'Ivoire, Air Namibia, RAM, and Air Burkina. ■

"An important part of our job is to engage with those players and increase their awareness of agri-business in Africa"

NATALIE DIAS

Optimism in business shines through, says survey

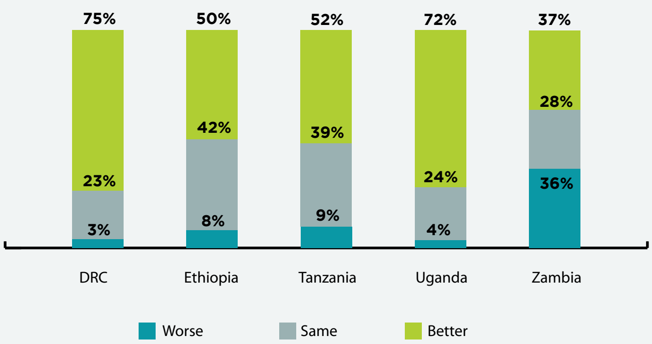
In the largest survey of its kind, The Africa List Business Barometer has revealed a high degree of confidence in the business environment across the DRC, Ethiopia, Tanzania, Uganda and Zambia. Samantha Payne reports.

"I think we should understand and appreciate that to do business in the DRC you have to be an optimist," said Charles Washoma, CEO at Amua Consulting.

Sitting on an estimated US$24trn worth of mineral resources, and having a newly elected government in tow, there are signs of hope in the DRC despite its past political instability.

"From the time of Mobutu Sese Seko to Joseph Kabila there has been turmoil in the DRC, so there has to be a level of optimism and drive to do business in the DRC," Washoma told an audience in December 2019 at the launch of The Africa List Business Barometer. The Business Barometer study was produced by The African List, a membership organisation of African private sector leaders established by the CDC Group, the UK's dfi, in partnership with the Wheeler Institute for Business and Development at London Business School. It is the largest survey of its kind involving 357 business professionals, operating in five of some of sub-Saharan African fastest economies: the DRC, Ethiopia, Tanzania, Uganda and Zambia, who responded to questions on business confidence and investment, future economic conditions, finance, principal risks and opportunities.

Figure 1: The future is bright - the optimism for the future is clear to see, with only Zambia expecting a tougher year



Source: The Africa List Business Barometer

In an excerpt from the business barometer report, Djo Moupondo, chairman at La Clique Music Group, executive board director of Sodeico Holding, said, "There is a great will to develop new sectors in the DRC; the insurance sector is being liberalised and they are keen to encourage this within the energy sector also."

In fact, 75 per cent of business leaders in the DRC were most positive overall about the improvement in business conditions compared to the other four economies. Uganda, followed quickly behind with 72 per cent, then Tanzania and Ethiopia had a similar score of 52 per cent and 50 per cent respectively, see Figure 1.

Zambia had the worst outlook with 36 per cent expecting the business situation to worsen in the year ahead – three times greater than The Africa List Index of negative future confidence, (13 per cent), the report continued.

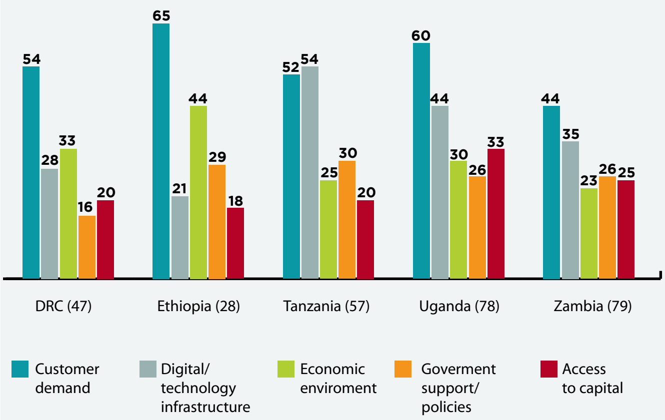
The respondents cited the "economic environment, currency risks/inflation and government support and policies as their greatest concerns". They estimated GDP growth of two per cent, inflation at 10.7 per cent and the Zambia Kwacha to fall to 14.5 against the dollar by the end of 2019.

However, 44 per cent saw "customer demand as a major opportunity for growth within their markets in Zambia", with 35 per cent seeing digital/technology infrastructure "as an opportunity not a constraint". See Figure 2 for the full breakdown of business opportunity of all the five countries.

When considering Ethiopia, the report cited eight out of ten business leaders expected to increase investment in the coming year – the highest score across all

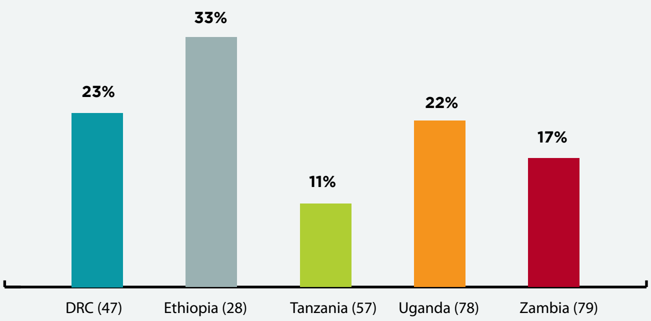
> "There is a great will to develop new sectors in the DRC"
>
> **DJO MOUPONDO, CHAIRMAN AT LA CLIQUE MUSIC GROUP, EXECUTIVE BOARD DIRECTOR OF SODEICO HOLDING**

Figure 2: Top five areas of opportunity (percentage of respondents, by country)



Source: The Africa List Business Barometer

Figure 3: Business leaders' prediction for revenue growth



Source: The Africa List Business Barometer

five countries.

This has since been bolstered by the IMF's decision to provide a three-year US$2.9bn credit facility to support the Ethiopian government's Homegrown Economic Reform agenda, which is aimed at "unlocking the country's development potential".

Speaking at a UN conference on 9 September, 2019, Prime Minister Abiy Ahmed, said, "Several months in the making and spearheaded by some of Ethiopia's finest minds, our initiative aims to propel Ethiopia into becoming the African icon of prosperity."

The stand-out companies named in The Africa List Business Barometer report for doing good included ICOG Labs, Ethiopian Airways and Ethiochicken.

Business leaders in Ethiopia, according to the survey, expected revenue growth to rise by a third, while only 11 per cent was predicted in Tanzania, see Figure 3.

However, eighty two per cent of respondents in Tanzania viewed business conditions as good or satisfactory, with more than half expecting to increase investment in the year ahead, which was more positive than The Africa List Index.

Prime Minister Kassim Majaliwa has previously acknowledged the constraints to investors and why it had created a special ministry for investment to improving the business environment.

He said, "The government has begun taking appropriate measures to make sure that the challenges are solved. We will work with the private sector to ensure that the business environment continues to be improved."

More than a third of Ugandan business leaders see 'creating employment' is the most important way 'businesses can do good', namely companies in the financial, telcom and food and drink sectors.

Nieros Oyegun, head of network at The Africa List, who developed the survey in partnership with the Wheeler Institute at London Business School said, "Through this research, we want to uncover the factors for business success on the ground in these high-potential growth economies, and in doing so, reframe the macroeconomic views held on the region."

Rajesh Chandy co-academic director of the Wheeler Institute, professor of marketing and Tony and Maureen Wheeler chair in entrepreneurship at London Business School Tony and Maureen Wheeler Chair in Entrepreneurship and Marketing at London Business School, added, "Africa undoubtedly faces big challenges. But big challenges offer big opportunities. Businesses have many opportunities to fulfil fundamental human needs and propel growth.

"The Business Barometer respondents were more upbeat about business conditions than might be expected. It's a much more optimistic story than we're used to hearing. The Business Barometer respondents represent a very unique group, since they tend to be in medium to large companies, whereas most businesses in their respective countries are micro and small businesses. The question – and the policy challenge – is how can this sense of optimism pervade the rest of each country?" ■

A new hub for Africa

Ghana is massively upgrading its major ports, Tema and Takoradi, to provide greater inroads into West Africa as intra-regional trade expands and exports grow.


Port of Tema.
Image Credit: Bolloré Transport and Logistics

Ghana's economic boom of late, driven in part by the discovery of hydrocarbons offshore, is placing extra demand on its infrastructure.

That includes the nation's ports, the main trade arteries and export hubs for overseas sales of major Ghanaian commodities such as gold and cocoa.

With 2019 growth estimated at a healthy 7 per cent by the International Monetary Fund – and more to follow this year – Ghana's ports are coming under strain.

Tema, the nation's busiest port, and Takoradi are also gearing up to manage greater flows of intra-regional trade through the African Continental Free Trade Agreement (AfCFTA).

And there is regional competition to face up to as well, notably from Nigeria and Côte d'Ivoire.

That includes extremely limited railway infrastructure from Tema into the interior, unlike Abidjan, for instance, with a line that reaches far into the north.

But Ghana's economic all-round progress has driven investment across a wide range of areas, from the ports and maritime sector, to transport and beyond.

Support for the US$2.6bn Accra Skytrain project, for instance, to transport more than 380,000 passengers annually around the capital, hints at more to come.

Tema expansion

At Tema, there are mighty expansion plans already underway, including a new US$1.5bn deep-water container and logistics hub.

This will add 3.5 million TEUs in annual throughput capacity to the port and allow it to accommodate even the world's largest container ships.

The site is managed by Meridian Port Services (MPS), which groups APM Terminals, Bolloré Africa Logistics, and the Ghana Ports and Harbour Authority (GPHA).

It is viewed as a vital infrastructure project for a developing economy, and one increasingly keen to connect the region in the wake of the AfCFTA.

In a separate initiative, APM Terminals and Bolloré Africa Logistics are to upgrade the current highway between Accra and Tema to a six-lane highway to enhance the movement of cargo in and out of the port and the hinterland.

The first STS (Ship-to-Shore) cranes, which stand 89 metres high, underscore Tema's new international ambitions.

The STS cranes, as well as the

eRTG (Electronic Rubber-Tyre-Gantry) cranes – made by world leader in gantry crane construction, ZPMC, and designed to stack from one to five containers in height and seven in width – were delivered to Tema a year ago.

The new MPS Terminal 3 at the port was eventually opened last June, with more of the quay wall and additional facilities to be completed throughout this year.

It is already becoming the first port of call in the region for several liner services, drawing in the first Neo-Panamax vessel, with a capacity of 13,100 TEUs.

Ongoing work

In a December 2019 update, MPS reported on the current status of its Tema upgrade, stating that the port will bring huge benefits to Ghana as a whole.

"The deeper draft and the potential investment in cargo handling systems will bring about increased levels of efficiency and savings, adding value to trade and the economy at large," it noted.

commodity importers and exporters.

During the remainder of the year, a fourth new berth, plus reclamation of the areas behind it, will also be completed ahead of the 2022 schedule, it noted.

Takoradi investment

Work is also underway at Takoradi, about 230km from Accra, which saw overall volumes rise to 9.9 million metric tons in 2019, against 8.2 million metric tons the previous year.

The new work includes building a dedicated container dock and multipurpose terminal inside the port in a project led by Ibistek Ghana Limited, a local company, which has a 25-year concession with GPHA.

The total terminal area of 61 hectares will be available for the receipt, storage and handling of all types of cargo from containers through to oil pipes, cereals and grains.

Work also includes the construction of a large oil jetty to handle rising volumes of exports

> "The investment in cargo handling systems will bring about increased levels of efficiency and savings"
>
> **MERIDIAN PORT SERVICES**

out of the port.

Massive dredging work is underway to prepare the quayside for larger vessels too.

Eventually, this will comprise three 14-metre-deep berths of 900 metres for multi-purpose vessels, including oil and gas service vessels, as well as two 16-metre-deep berths of 795-metres-long dedicated to container and RoRo vessels.

As West Africa's economy continues to expand, driving both international and intra-regional trade, Ghana will be ready. ■

The facilities at the port embed automated processes and systems along the way, including scanners and weighbridges, to eliminate congestion and maximise efficiency without compromising security.

More work is to come as the country positions itself as a leading regional West African trade hub.

Between now and March, MPS is to start a final transition to Terminal 3 and gradually wind down its operations at Terminal 2, which will be operated by GPHA.

MPS said this will present new prospects for multi-purpose vessels operators (RoRo, general cargo, break-bulk, tankers) and bulk

By Martin Clark

Image Credit: Adobe Stock

New players to level investment battlefield in 2020

The continent's traditional development partners – the EU, China and the USA – are facing increasing competition on the ground from new players, such as Russia, the Gulf states and Turkey.

African markets will become increasingly attractive in 2020 at a time when wider global trends are more set against the interests of international businesses than they have been for many years, according to risk analysts. Fractious geopolitics in a USA election year, a rising tide of global activism and a new level of cyber warfare are among the top five risks for business in 2020, published today by Control Risks, a specialist global risk consultancy.

As Control Risks CEO Nick Allan points out, "populism, activism, protectionism, sanctions and political disruption remain the canvas onto which business tries to build global markets and supply chains. It has not been easy in 2019 and it's going to get harder next year."

While this outlook is prompting businesses to rethink their global strategies and footprint, across Africa, the continent's traditional development partners – the EU, China and the USA – are facing increasing competition on the ground from new players, such as Russia, the Gulf states and Turkey. Greater regional integration, through the African Continental Free Trade Area and regional blocs like the East African Community, is a welcome counterbalance to growing economic nationalism elsewhere in the world. For African governments and foreign investors able to navigate an increasingly complex and competitive landscape, opportunities are opening up.

"The standard narrative of USA-China rivalry in Africa always looked like an over-simplification, but is certainly outdated now. China's engagement with Africa is undergoing a fundamental shift, the USA is playing catch-up, and other countries are seeking to expand their influence in an increasingly multipolar landscape," explained Barnaby Fletcher, associate director at Control Risks. "Geopolitical objectives are being supported by a flood of development finance, creating both opportunity and competition for private-sector players," added Fletcher.

> "At the helm of the world's most important countries is a crop of leaders who cannot see further than the next crisis"

The global top five risks for business in 2020

The top five risks are released as part of Control Risks' annual RiskMap report, a global risk forecast for business leaders and policy makers across the world.

1. Geopolitics and the USA campaign trail

The USA election campaign will have a palpable impact on geopolitics in 2020. The drama of the campaign trail combined with the disruption of the impeachment process will reverberate through America's global actions, with the White House using stunt diplomacy to try to distract from impeachment. At the same time, USA allies and adversaries such as North Korea, Iran or even the Islamic State will hedge against the most ideological election in 40 years and try to add pressure to an already heated electoral campaign. Such posturing will heavily influence the geopolitical risk landscape for business in 2020.

2. The activist society passes judgement

Across the world, social pressures and co-ordinated activism around issues like environmental protection, political and human rights, inequality and privacy are demanding more and more from businesses, not just governments. In the street, in shareholder meetings and in your company, the activist society will bang ever harder on the boardroom table in 2020. Being ethical is no longer enough. Being compliant is no longer enough. This uncodified morass of social, moral and political accountability will consume business leadership in 2020 and beyond.

3. Cyber warfare hits a new level

Cyber threats in 2020 will align as never before to provoke a high impact, cyber-enabled assault on critical infrastructure. Western deterrence has failed to stem the tide and hostile actors are using ever harder methods. The USA will retaliate in ways that show the world it cares. In theatres of strategic conflict, such as the Gulf, unpalatable military measures will give way to cyber attacks. And so will begin a new cycle of escalation: the west's cyber-capable rivals and their proxies will raise their game, with unpredictable consequences. If leading companies are attaining credible cyber resilience, national infrastructures across the globe are not and present the main vulnerability in the international cyber conflict.

> "Cyber threats in 2020 will align as never before to provoke a high impact, cyber-enabled assault on critical infrastructure"

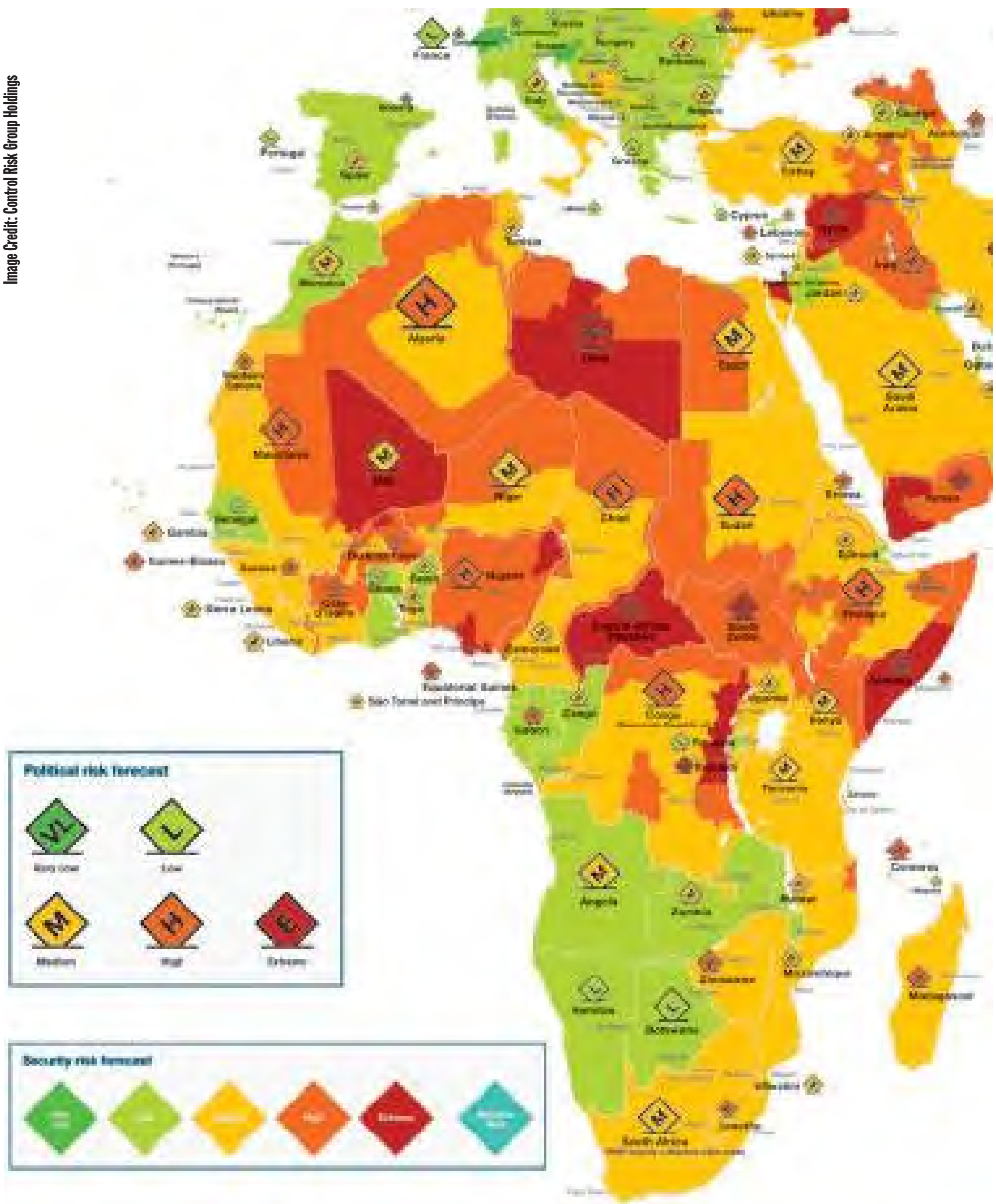
4. Economic anxiety meets political fragility

Even the most optimistic forecasts say global economic growth in 2020 will be dismally low or, as our partners at Oxford Economics put it, "grinding". This, before any account of an economic shock that could shake an uneasy global economy. If global GDP takes a turn for the worse, we cannot expect a fragmented world to craft a co-ordinated policy response. Governments facing polarisation domestically and bilateral opportunism internationally will find it difficult to rally in the face of economic hardship. The challenge will be particularly difficult for commodity-dependent economies in the Middle East which have not fully recovered from the oil price crash in 2015 or which are grappling with sanctions, youth unemployment and social unrest.

5. Leaders without strategies

At the helm of some of the world's most important countries is a crop of leaders who cannot see further than the next crisis. For them, tactics will trump strategy. 2020 is shaping up to be a year when the brakes on incident escalation are absent. This is a world where resilience at the state level is weak, and long-term solutions take too much time to find. Whether it is a global trade war, a cyber attack or a regional border skirmish, things could escalate faster in the absence of any international oversight. Business will need a strategy for an intensely tactical world. ■

Image Credit: Control Risk Group Holdings



RiskMap 2020, a leading annual forecast of political and security risk.

Source: Control Risks Group Holdings

Fenix Benin connects 40,000 households to solar power within a year

Next-generation energy company Fenix International, a subsidiary of ENGIE, has surpassed its previous rapid growth rates and connected 40,000 households to solar power in Benin, representing 200,000 people, within just one year of launching sales in the country.

Only 34 per cent of Beninois have access to electricity, with rural residents still further behind at a 16 per cent electrification rate. Fenix's high-quality solar home systems and strong distribution network allow distributed rural households to access warrantied products and accompanying after-sales service. Customers pay for the 10 to 50W solar home systems over time, with small mobile money payments. Paying for the kits via installments makes the products affordable even for low-income families and opens a path to financial inclusion via a Fenix credit score and upgrades to larger systems and additional services.


Image Credit: Fenix International

Launching the Lokossa point of sale with members of the Fenix Benin sales team.

Brian Warshawsky, CEO of Fenix International, said, "I'm thrilled that we're making a difference in the lives of 40,000 Beninois households and 200,000 people, providing access not only to clean solar power, but also to financial empowerment. It's a testament to the strength of our team in Benin that we were able to grow so rapidly, and I look forward to seeing their accomplishments going forward."

Yoven Mooroven, CEO of ENGIE Africa, said, "It's exciting to see energy access expanding in Africa, and I'm proud of the contributions our teams are making to the effort. With ENGIE Power Corner providing mini-grids in Tanzania, Zambia and starting development in Western Africa, newly-acquired Mobisol selling larger solar home systems in East Africa, and Fenix focusing on ultra-affordable PAYGO systems in six markets, ENGIE Africa is working at all levels to implement our Access to Energy strategy across Africa."

Philippe Robert, managing director of Fenix Benin, added, "Reaching 40,000 households in a year is a huge milestone for our team to accomplish, but it is only the beginning for Fenix Benin. Our 140 employees are getting started in our goal to bring clean light and power to all those without electricity across Benin. Providing much more than just solar lighting, our systems allow customers to access an on-grid experience with TVs, radios, additional accessories, and financial and product upgrades."

VOITH SIGNS ETHIOPIAN PLANT CONTRACT

Voith signed a comprehensive service and operations consultancy contract for the Ethiopian hydropower plant Gilgel Gibe II during the G20 Investment Summit in Berlin, Germany.

The agreement was signed by the Ethiopian Minister of Water, Irrigation and Electricity Dr Seleshi Bekele and Mark Claessen, managing director Voith Hydro East Africa and Peter Altmaier, the German Federal Minister for Economics and Energy.

The central aspect of the two-year service and operations consultancy contract is the optimisation of the energy production of Gilgel Gibe II with an output of 420MW. Voith will be responsible for modernising maintenance systems, implementing digital solutions and training. "With the plant operator Ethiopian Electric Power we want to utilise the potential of Gilgel Gibel II. We succeed in this by reducing unplanned downtimes and failures to a minimum," said Mark Claessen, managing director, Voith Hydro East Africa.

CUMMINS UNVEILS TIER 4 MOBILE POWER SOLUTION WITH 500KW GENERATOR

Cummins launched the 500KW mobile generator set, the newest addition to the Tier 4 Final mobile generator product line during the 2020 United Rental Supplier Show in Minneapolis, Minnesota, from 4-5 January.

All major components on both generator models are designed and manufactured by Cummins, a power technology company synonymous with reliability and service since 1919. The company is committed to ensuring sites will be operating 24/7.

The C500D6RE provides a 500KW power rating as per ISO 8528 and is powered by a US Tier 4 Final certified QSX15 Cummins engine. The QSX15 engine meets EPA standards without the need of a Diesel Particulate Filter (DPF) offering serviceability, lower emissions and greater performance.

The 500KW model is fitted with the proven and well-established Cummins Stamford alternator, as well as the Cummins PowerCommand 3.3 controller with Masterless Load Demand technology; which allows for units of different sizes to parallel together and adjust the required power output to respond to variable load demands.

With a power density of 500KW from a 15-litre engine, the C500D6RE mobile generator is designed to provide reliable power, regardless of the climate or altitudes. The generator set can operate in high ambient temperatures while offering a cold-weather option package ensuring optimum performance in low ambient environments.

A heavy-duty trailer and hitch design ensure greater reliability for rugged mobile power applications. The generator's enclosure is capable of withstanding extreme weather conditions, while a full sound attenuation package minimises the generator's noise levels. For fast oil changes, there is a 'Quick Fit' oil evacuation system.

BRIEFS

Medupi's Unit 2 becomes operational

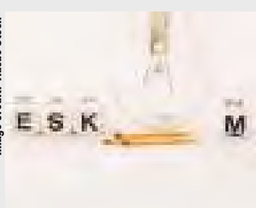


Image Credit: Adobe Stock

Unit 2 of Medupi Power Station set to contribute 800MW to South Africa's grid.

Eskom has revealed Unit 2 of the Medupi Power Station is in operation and will contribute almost 800MW to the South African power grid.

"Unit 2 joins its sister units 6,5,4, and 3, which have been in commercial operation contributing a total of 4,000MW to the national power grid respectively. The commercialisation of the unit is a 'major milestone' and signifies the imminent completion of the Medupi build project," said acting group chief executive, Jabu Mabuza.

Fund to improve access to energy in SSA


Image Credit: Adobe Stock

Energy fund launched to finance companies on the continent.

Shell Foundation and development bank FMO has announced the launch of the US$120mn Energy Entrepreneurs Growth Fund (EEGF), to provide financing for companies in sub-Saharan Africa operating in the access to energy sphere. Triple Jump, will act as portfolio manager and Persistent, a Zurich private equity firm with expertise in the off-grid sector, will serve as investment advisor to the fund. Enclude, a Palladium company, advised on the structuring and execution of the fund.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info@altaaqaglobal.com | www.altaaqaglobal.com

A renewable-as-baseload strategy can fix Nigeria's power sector

Wale Yusuff, managing director of Wärtsilä Nigeria, says flexible power systems will be instrumental in lowering electricity costs, improving system reliability, as well as boosting renewable energy in the Nigerian power mix.

According to Wärtsilä, Nigeria is in a position to take advantage of its vast renewable energy potential and resolve most of its power system problems in an economical way. This can be implemented through what the company calls a "Renewable Baseload Strategy". In this new approach, traditional gas-to-power plants will provide the needed flexibility to integrate a large share of renewable energy in parallel, thereby securing power system reliability.

The power mix as currently envisaged in Nigeria's Vision 2030, with a 30 per cent share of renewable energy as well as a sizable share of thermal-based power, is a robust and appropriate mix for the country. But in this context, the high flexibility and efficiency offered by reciprocating engines technology (as opposed to regular gas turbines) will be a definite must, especially considering the current state of its power sector and the need for future renewable energy penetration in the mix.

Wärtsilä supports that strategy by both venturing into renewables and developing a large fleet of medium-size gas-to-power plants.

"On one hand, Nigeria has abundant natural gas resources as well as considerable, but intermittent, solar energy resources waiting to be tapped. On the other hand, it is plagued with chronic power shortages. With this in mind, it becomes clear that the best way forward is to build base load energy capacities that can work seamlessly with renewables. That's why we believe that gas-to-power technology is such a true game changer for the country. The ultimate solution is to use utility-scale solar power plants integrated with engine power plants and energy storage", explained Wale Yusuff.

Wale Yusuff.

Not only is it more sustainable going forward, but it is also more cost-effective, says the company. Detailed cost analysis has shown that renewables combined with flexible engine-based power plants are more economical than traditional baseload energy solutions, with a total cost of electricity up to 24 per cent lower. Inflexibility has a cost by limiting how much cheap renewable energy can be economically integrated to the system.

As a global energy system integrator with major international expertise and 15 years of experience in the Nigerian Energy Sector, Wärtsilä says it has a 360-degree view of the country's power issues. "It is well-known that Nigeria is grappling with chronic power failures, as well as conventional power plants that operate at a fraction of their potential capacity. Much like the rest of West Africa, the country is racing against the lack of power, but also the lack of clean energy. In this context, it is time to rethink the way we have done things in the past and adopt a new forward-looking and sustainable power generation strategy. Today we are still far away from a 100 per cent renewable energy future. However, renewables are already starting to become the new baseload in other markets like Europe, pushing inflexible conventional power generation out of the system," said Wale Yusuff.

> "The ultimate solution is to use utility-scale solar power plants integrated with engine power plants and energy storage"
>
> **WALE YUSUFF, MANAGING DIRECTOR OF WÄRTSILÄ NIGERIA**

The Nigeria Electrification Roadmap (NER) aims to reach 11,000MW by 2023. This target is achievable if the most advanced gas-to-power projects are given the go ahead to complete their development in an organised way and with a robust selection based on injection points and tariff competitiveness.

Wärtsilä is nearly a 200 years old company, so needless to say, we have seen it all. As an energy system integrator with 70GW of installed power plant capacity in 177 countries around the world and power plants delivered in 46 of 54 African countries, we understand Africa's power requirements better than most. It is clear to us that ultra-flexible engine-based power plants tailored according to the specific requirements of the country are critical to improving to the Nigerian power system. It is the only strategy able to offer the highest degree of flexibility, enabling major savings, and creating an optimised response to rapid changes in intermittent renewable power generation," added Wale Yusuff.

The company has presented its Renewable Baseload strategy in its whitepaper "*Path towards a 100 per cent renewable energy future*", that lays out a credible way to reach a fully green energy mix. "Any serious long-term energy strategy must embrace the following five key trends: the rapidly increasing penetration of renewables and decentralised energy generation, the increasing role of flexible gas, emerging storage technology, as well as data and digitalisation," concluded Wale Yusuff.

Image Credit: Wärtsilä

Four Wärtsilä modular block enclosures will provide 40MW to Resolute Mining's Syama off-grid gold mine in Mali.

Mali case study

Wärtsilä announced in June 2019 the first order of its innovative new Wärtsilä Modular Block solution for power generation to Aggreko, a global provider of mobile, modular power, temperature control and energy services.

Four Wärtsilä modular block enclosures with one medium-speed Wärtsilä 32 engine in each, will provide 40MW of energy to Resolute Mining's Syama off-grid gold mine in Mali. The modular block order was placed by Aggreko in November 2019. This contract is the first one signed under the co-operation agreement between Wärtsilä and Aggreko.

The Wärtsilä modular block solution will replace the existing diesel generators currently powering the mine. Thanks to the high efficiency of the engines the new solution will create substantial monthly savings in fuel costs. Fast-starting and load following capabilities will facilitate the integration of renewables into the mine's energy system. The mine will be powered by a reliable, flexible and affordable solution, which will help to enhance the mine's environmental impact.

Three Wärtsilä modular blocks, providing a total of 30MW of power will be installed next to the existing power station in 2020. The fourth 10 MW modular block will be installed in 2022. The agreement with Aggreko includes an option to add a fifth 10MW unit to the power plant. The scalability of Wärtsilä modular block solution enables the mine to add additional power capacity if needed to support the future growth.

"The Wärtsilä modular block supports our technology investment strategy and when included as part of a hybrid solution, has enabled us to offer Resolute an extremely cost-effective solution for 16 years," said Stephane Le Corre, strategy and development director at Aggreko.

"The Wärtsilä modular block solution opens up exciting new opportunities, both for permanent and rental electricity generation. We are delighted to be partnering with Aggreko in this rapidly growing market, and this first order is encouraging for the future success of our cooperation," added Jean Nabb, director, Strategic Partnerships, Wärtsilä Energy Business. ■

AfDB approves US$100mn guarantee for Madagascar hydropower project

The Sahofika hydropower project in Madagascar has received a US$100mn Partial Risk Guarantee (PRG) of funding to support an additional 205MW of renewable energy generation capacity to the national grid, benefitting more than two million people.

The bank's support will include risk mitigation to the project developers and the debt providers by supporting the payment obligations of JIRAMA, the state-owned off-taker.

Image Credit: Adobe Stock

An additional 205MW of renewable energy will be added to Madagascar's energy mix.

The Sahofika hydro power project, located on the Onive River, 100km southeast of the capital Antananarivo, will involve the design, construction and operation of a 205MW hydroelectric power plant, the construction of a 110km transmission line to the site, and construction of camp facilities and 112km of access roads.

Noting the critical importance of the project to Madagascar, Wale Shonibare, the bank's acting vice-president for Power, Energy, Climate Change and Green Growth, said, "The bank's support to the national utility, JIRAMA, through the PRG provides much needed credit enhancement as JIRAMA continues to build its track-record as a bankable electricity off-taker that will in-turn mobilise investments into Madagascar's energy sector. This will enable the country to achieve its strategic goals in terms of increased energy access, a more diversified energy mix and least cost generation."

Upon completion, the project will generate 1,570 GWh of renewable power annually. The project will enable Madagascar to displace up to 90 per cent of thermal energy generation, to unlock its great hydropower potential, and to expand its energy mix to more renewable sources. It will also contribute to the reduction of average end-user tariffs, and of greenhouse gas emissions amounting to 32,469 kt of CO_2 over the 35-year concession period, the bank noted.

COMPACT MACHINES MEAN BIG BUSINESS

Product experts at Volvo Construction Equipment (Volvo CE) explain why compact machines continue to be the most popular segment on the market.

The global compact construction equipment market – consisting of compact excavators, skid steer loaders, compact track loaders and compact wheel loaders – was valued at more than US$10bn in 2017 and is likely to reach more than US$15bn by the end of 2025.

Their popularity is most likely attributed to their versatility, says Helmut Broy, Compact Wheel Loader Business Platform Leader at Volvo CE, adding, "Compact wheel loaders are service machines that can support any segment, from landscape and gardening to road, civil engineering and agriculture. They are essential multi-tool carriers required for today's diverse business landscape."

Another factor for the machines' popularity is the rise in electromobility, which is redefining the market.

BW 174 HYBRID AND BOMAP TESTED AT LARGEST SITE

Max Bögl and Bomag have been using one of the largest infrastructure construction sites for tests of the BW 174 Hybrid and BOMAP.

By the planned end of construction in 2021, a total of 300,000 m² of asphalt will have been paved at the Fürth/Erlangen interchange. Of this, 2.4km is porous asphalt on the A3, and 2.3km is low-noise stone mastic asphalt on the A73. For this construction project too, one of the largest traffic projects in Germany, Max Bögl is using state-of-the-art compaction technology from Bomag.

The construction site at the Fürth/Erlangen interchange is part of the six-lane expansion project of the A3 between the motorway junction Biebelried near Würzburg and Fürth/Erlangen. The flyovers from the A3 onto the A73 from the direction of both Würzburg and Nuremberg will each be widened to two lanes to ensure a significantly better flow of traffic, particularly at peak times. For this the classic cloverleaf design will be replaced with two new constructions: the flyover and the underpass. After completion, traffic from Erlangen to Regensburg will be routed smoothly via the flyover without any merging or roundabouts.

The pivot-steered BW 174 AP AM Hybrid tandem roller is one of Bomag's answers to requirements to reduce energy consumption and emissions on the one hand, and to increase performance and efficiency on the other. Max Bögl has been relying on Bomag precision machines for quite some time; including, the pivot-steered tandem rollers in combination with Asphalt Manager. The oldest tandem mroller in use in this infrastructure project is the 174 AP AM, built in 2007. This split-drum tandem roller is equipped with Asphalt Manager, which offers the selection of three exciter systems including oscillation.

BRIEFS

Image Credit: Baoli

Baoli KBE 25 electric forklift and others will continue to be in demand in the foreseeable future.

Forklift truck market to grow by more than 1 per cent by 2027

The forklift truck market in the Middle East and Africa is set to grow at a CAGR of 1.4 per cent from 2019-2027, according to the latest regional outlook report. South Africa, Turkey, the UAE, Saudi Arabia and the rest of MEA form this market. The construction sector in Saudi Arabia is the largest in the Middle East region, which contributes to 8 per cent of the country's total GDP.

Image Credit: Bobcat

The Remote Control S450 skid-steer loader in action at London site.

Bobcat Remote Control compact loader in demolition

The UK's first Bobcat Remote Control compact loader has increased safety and reduced costs on a major demolition contract in London. Purchased by BooBoo Plant Hire, based in Kings Langley, and supplied by Bobcat of London, the local Bobcat dealer, the Remote Control S450 skid-steer loader is working on the top-down demolition of a former wing of the Whittington Hospital in Upper Holloway in North London, being carried out by main contractor, Kent-based Erith.

Scatec Solar awarded projects totalling 360MW in Tunisia

Image Credit: Adobe Stock

Scatec Solar will be supporting the Tunisian government's target to reach 30 per cent electricity via renewables by 2030.

Norway's Scatec Solar has secured a majority share of the PV generation capacity available in a 500MW tender, launched by the Tunisian Ministry of Industry and SMEs last summer.

Scatec Solar said it has won the largest of the five projects available. The 60MW, 60MW and 240MW solar plants, which will be located in Tozeur, Sidi Bouzid and Tataouine respectively and are expected to generate about 830 GWh per year, enough electricity to power more than 300,000 Tunisian households annually and saving 480,000 tonnes of CO_2 emissions each year.

"We are excited to secure our first projects in Tunisia, supporting the government's target to reach 30 per cent electricity production from renewables by 2030. We have solid experience from successful development, execution and operation of projects in Africa and the Middle East over the last years that we bring with us as we enter this new market," said Raymond Carlsen, CEO of Scatec Solar.

Scatec Solar will be the lead equity investor in the projects. The company will also be the engineering, procurement and construction provider and provide operation and maintenance as well as asset management services to the power plants. The solar power plants will hold 20 years of PPAs with Société Tunisienne de l'Electricité et du Gaz (STEG).

CONEXPO: LIEBHERR TO EXHIBIT EXTENSIVE RANGE

Liebherr's innovative products will be on display at Conexpo-Con/Agg 2020 from March 10-14, 2020.

Liebherr is showcasing an extensive selection of earthmoving and construction equipment at its outdoor booth #F5258 at the Festival Grounds. The company's product range of components for mechanical, hydraulic and electric drive systems will also be on display in the south hall of the Las Vegas Convention Center at booth #S84321.

Altogether, Liebherr's products will fill more than 4,900 m^2, providing room for hydraulic excavators, wheel loaders, crawler loaders and tractors, deep foundation machines, material handlers, tower cranes, mobile and crawler cranes, as well as a concrete pump. Liebherr will present four wheel loaders at the show. This includes an L 566 XPower with power-split travel drive. The largest Liebherr wheel loader, the 71,870 lb (32,6 t) L 586 XPower, will also be at the exhibition stand. The remaining other two will be the L 538 medium-sized wheel loader and the L 550.

Africa construction aggregate market set for robust growth

Africa is seeing positive outlook with a number of construction activities in the region.

Image Credit: ihorbondarenko/Adobe Stock

Significant opportunities are created for public-private partnership construction projects in the region.

The demand for construction aggregates across Africa is expected to remain strong, with a volume CAGR of 5.4 per cent over 2019-2029, according to a research by Persistence Market Research.

Urbanisation has played a vital role in the development of infrastructural facilities across the globe. According to the World Bank, in 2016, urban population growth in Angola (3.52 per cent), Ethiopia (2.85 per cent), Nigeria (2.43 per cent) and South Africa (2.1 per cent) has been above the African average of 2.09 per cent. Such steady growth in these developing economies is expected to drive an increase in infrastructure development activities.

Governments across these emerging countries are investing huge amounts in large-scale construction projects in order to strengthen commercial infrastructure and transport in their respective economies. This is expected to, in turn, creates significant opportunities for public-private partnership construction projects in the region.

Moreover, countries such as Ethiopia, Tanzania and South Africa are gradually shifting their focus towards developing themselves into service-driven economies. This shift in focus is expected to promote commercial construction activities in the region and create opportunities for infrastructure-related investments. The growing demand for leisure activities, amusement parks and other luxury sports venues in Africa is driving the market growth of gravel throughout the region.

From a regional perspective, sub-Saharan Africa is projected to hold a relatively prominent share in the Africa construction aggregation market. This is because of the requirement for construction aggregates across various applications such as infrastructure, residential, and industrial, among others.

> “Countries such as Ethiopia, Tanzania and South Africa are shifting focus towards developing themselves into service-driven economies, thus promoting commercial construction activities”

This is expected to create opportunities for market players in the construction aggregates market to enhance their product portfolios and is likely to provide a much-needed boost to their revenues.

In terms of growth opportunities, the demand for construction aggregates in Northern Africa, with the growing demand across various applications such as infrastructure and industrial, among others, is projected to generate high demand for construction aggregates.

By type, the crushed stones segment is projected to be a very lucrative market for construction aggregates, with an expected value share of approximately 46 per cent in 2019. Growing urbanisation and infrastructural development, including the energy and power and transport sectors are projected to boost the growth of the construction aggregates market in the coming years. ■


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Image Credit: AdobeStock

Over three million people to benefit from road construction support

The African Development Bank pledges 345 million-euros (US$385mn) towards road projects in Kenya and Tanzania. The total amount of co-financing will be more than US$1.2bn when phases of the project are concluded.

More than three million people in Tanzania and Kenya will benefit from a €345 million financing package for road construction support, approved by the African Development Bank's board in Abidjan on 12 December.

The bank's support for the Mombasa-Lunga Lunga/Horohoro and Tanga-Pangani-Bagamoyo roads Phase I, is in the form of African Development Bank and African Development Fund loans and represents 78.5 per cent of the total €399.7 million project cost. The European Union contributed a grant of €30 million, 7.7 per cent of the total project cost, to the government of Kenya.

The road is a key component of the East African transport corridors network, connecting Kenya and Tanzania. Producers, manufacturers and traders will be able to move goods more quickly and cheaply. In addition, farmers and fishermen will benefit from improved access to local and regional markets and amenities, including better schools and health centres.

"The project will have spillover benefits for hinterland countries such as the Democratic Republic of the Congo, Burundi, Rwanda, Uganda and South Sudan that depend on Mombasa as gateway to global markets," said Hussein Iman, the bank's regional sector manager for infrastructure, private sector, and industrialisation.

The bank's support will also provide roadside trading facilities for sellers, half of them women who currently operate in disorganised and unsafe conditions.

The road crosses regions with high rates of youth unemployment. In light of this, the project includes a vocational training component for 500 unemployed youth (half of them women) to acquire marketable skills and improve their economic prospects.

The bank anticipates that the intervention will boost regional integration by reducing transit times, facilitating trade and the cross-border movement of people, opening access to tourist attractions. The project will also link the ports of Dar es Salaam, Tanga and Mombasa, and stimulate the blue economy in coastal areas.

This first phase involves the construction of 175km of road sections: the 121km Mkanga-Pangani road section in Tanzania and the 54km Mombasa-Kilifi road section in Kenya.

The intervention is a priority item in the bank's Eastern Africa Regional Integration Strategy (EA-RISP), the Country Strategy Papers (CSPs) of both countries and aligns with two of the bank's High 5 priorities – Integrate Africa and Improve the quality of life for the people of Africa.

Regional integration is a priority for Kenya, and Tanzania. However, poor infrastructure has been a major constraint.

In December 2019, the bank witnessed the signing of a US$440mn agreement between Japan International Cooperation Agency (JICA) and the government of Kenya for the first phase construction of a bridge connecting Mombasa island and Likoni, a major international port area of East Africa.

> "The project will have spillover benefits for hinterland countries that depend on Mombasa as a gateway to global markets"
>
> **HUSSEIN IMAN, AFRICAN DEVELOPMENT BANK'S REGIONAL SECTOR MANAGER FOR INFRASTRUCTURE, PRIVATE SECTOR AND INDUSTRIALISAION**

The Mombasa Gate Bridge will be the longest cable-stayed bridge in Africa, providing a critical link over the Indian Ocean along the just approved Mombasa- Lunga Lunga/Horohoro and Tanga-Pangani-Bagamoyo corridor phase I.

The total amount of co-financing is expected to be more than US$1.2bn when subsequent phases of the project are concluded – the largest co-financing agreement between the bank and JICA.

"We are confident that we can all work together to accomplish this important task and other projects in the future," said Nnenna Nwabufo, the bank's acting director general for the East Africa Region.

As at the end of November 2019, the bank's portfolio in Kenya comprises 27 public and seven private operations with a total commitment of €2.7bn.

The bank's portfolio in Tanzania as at the end of November 2019 comprises 21 public and two private operations with a total commitment of €1.82bn. ■

EC210D crawler excavator

The EC210D excavator is designed with Volvo's expertise for productivity in a wide variety of tasks.

THE EC210D EXCAVATOR

Image Credit: Volvo

Key features:

- A robust frame combined with optimal engine power and hydraulic pressure to provide superior digging forces and fast cycle times for excellent productivity in all operations.
- A Volvo D5E Tier 3 engine (providing an output of 123kW at 2,000 rpm). Volvo engine works together with the machine's proven hydraulics to provide high torque at low rpm for the ultimate combination of performance and improved fuel efficiency.
- For fast cycle times and optimum fuel consumption, the EC210D is equipped with intelligent work modes, including the new G4 work mode. Operators can choose the best mode to suit the task at hand, selecting from I (idle), F (Fine), G (General), h (heavy) and p (power max) mode.
- The EC210D features increased hydraulic flow for responsive, accurate control in grading and combined operations. Operators benefit from smoother, easier movement when travelling and lifting

The EC210D medium crawler excavator has been designed for optimum profitability.

Image Credit: Volvo CE

simultaneously as well as better grading quality from the harmonised boom and arm movement, (max digging depth: 6,730mm).

- Equipped with a spacious and safe operator environment, offering enhanced all-around visibility, an adjustable seat and ergonomic controls.
- The improved cab interior features a I-ECU monitor that displays a range of information for efficient operation.
- The EC210D is valid for all markets in Africa.

Dig in to profitability

The 20-ton excavator not Volvo EC210D is designed for optimum profitability. Featuring best-in-class fuel efficiency and Volvo's ECO mode, this excavator lowers fuel consumption and reduces operating costs. Excellent service access and a durable design guarantee a long machine life.

The intelligent ECO mode contributes to the machine's total improved fuel efficiency, without any loss of performance. The design optimises flow and pressure while maintaining digging power and swing torque.

> "For a productive work shift, this excavator is equipped with a spacious and safe operator environment, offering enhanced all-around visibility, an adjustable seat and ergonomic controls"

Built with durable components for outstanding results in all applications, the EC210D is designed to secure lasting machine value and an excellent return on investment.

Built to ensure servicing is safe, quick and easy, this machine features anti-slip plates, grouped filters, ground-level service access and centralised lubrication points. Long service intervals enhance machine availability and increase uptime for maximum productivity.

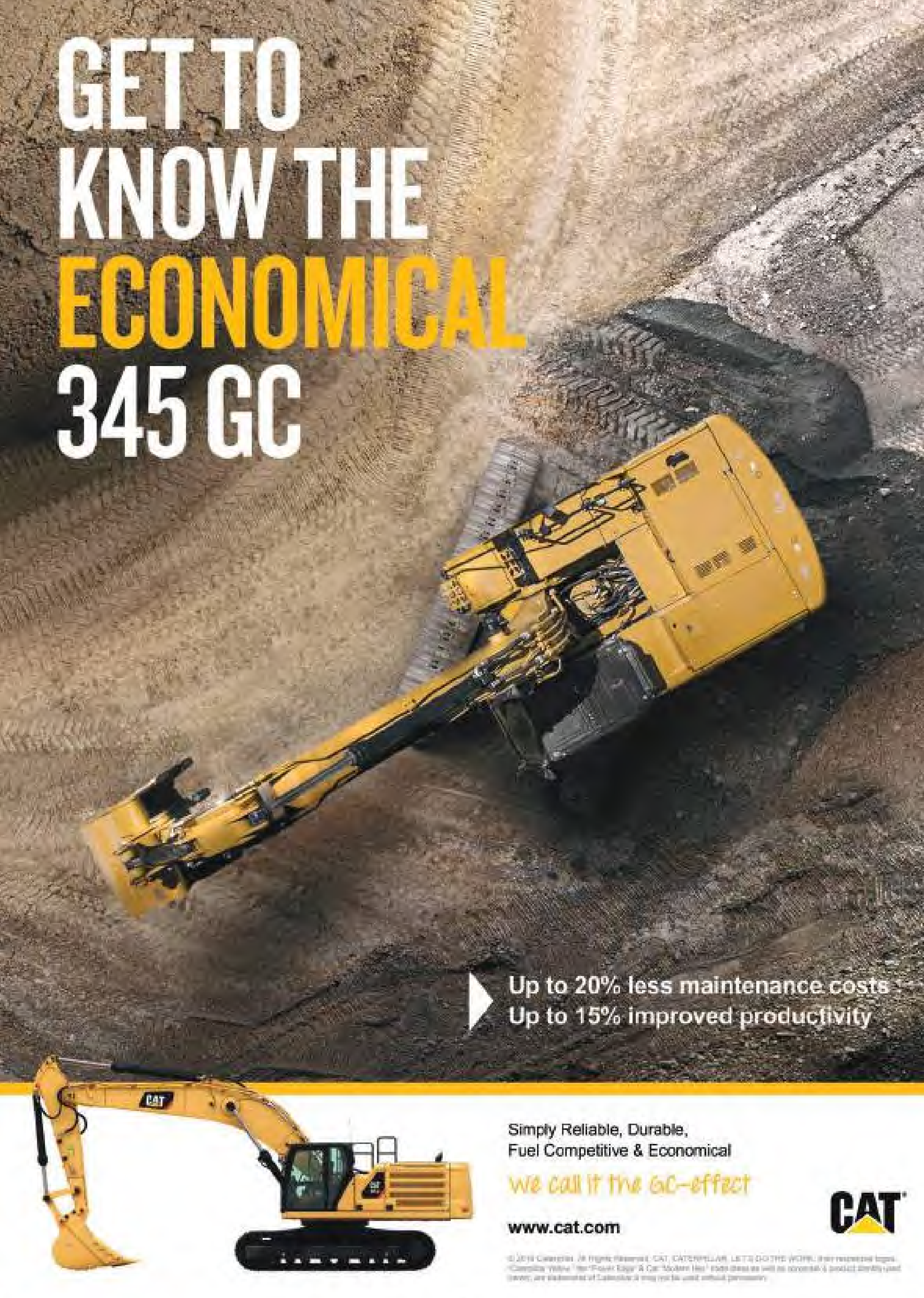
Volvo versatility

The EC210D can be fitted with a selection of buckets and breakers that work in harmony with the machine to ensure optimal performance and profitability in any application. With built-in durability, all compatible buckets are equipped with Volvo teeth to handle the toughest applications (0.52-1.22m^3 capacity).

The EC210D can be equipped with either a top- or side-mounted hydraulic breaker built to break even most demanding materials, delivering consistent power and high breaking force. The Volvo-designed hydraulic breaker/shear piping and quick coupler piping option provide optimum flow to the hydraulic attachments. State-of-the-art auxiliary lines allow the correct flow and pressure for special attachments.

A password-protected management system allows the operator to pre-set and adjust the hydraulic flow from a monitor inside the cab, providing storage for up to 20 different attachments for increased versatility. The operator can select one or two pump flow to maximise productivity.

Built with high-quality genuine Volvo parts, the EC210D is a durable and efficient partner in a range of applications. And, with an extensive infrastructure of technicians, workshops and dealers, Volvo has a comprehensive network and a variety of service options to ensure maximum uptime and lower the total cost of ownership.■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Apapa-Oshodi road will last for 40 years: Dangote

Aliko Dangote, whose company is behind the construction of Apapa-Oshodi road, says it will be one of the best in Africa when it is completed.

As part of Dangote Industries Ltd's commitment to the Federal Government of Nigeria, group president/CEO of Dangote, Aliko Dangote took the Minister of Works and Housing, Babatunde Fashola on an inspection tour of the 35km Apapa-Oshodi-Oworonsoki-Ojota highway currently under construction by Dangote Industries Ltd.

The work began in 2018, as part of a bargain between the company and the federal government to enjoy a 10-year tax rebate that accrues to ₦72.9bn (US$197mn). The road has been subject to heavy traffic flow. An initial attempt to work on the road fell apart; it was approved for ₦15bn (US$41mn) in 2013 and work on the road stopped after the 2015 general elections.

During the inspection, Fashola told members of the press, "The federal government is dedicated to the speedy completion of the highway to provide a lasting solution to the problems of bad roads, and gridlocks."

> "This road will be finished before the end of next year"
>
> **ALIKO DANGOTE**

Previous efforts by both federal and state governments to solve this bottleneck have been unsuccessful. Group President/CEO, Dangote Industries, Aliko Dangote during the inspection said, "We expect that by the end of 2020, the entire road network will be finished, you will have a road that will last for 40 years."

Image Credit: Dangote Group

The Apapa-Oshodi road is being built by Dangote Industries Ltd.

Speaking on Dangote Industries's struggles, Dangote complained about the congestions at the ports, the gridlock which cost the company about ₦25bn (US$68mn) in revenue between 2017 and 2019 financial year.

Praising the quality of the road been constructed, Dangote assured that it will revive commerce around the Apapa area. "This road will actually open up the economy. It will bring a lot of jobs and a lot of factories that have moved out will be able to move back."

The road is on track to be concluded before the end of 2020. This is the first attempt to rehabilitate the busy road since it was first completed in 1978. Fashola also spoke about the economic revival of the Apapa area, he said, "Businesses have started coming back on Liverpool Road after the road was closed earlier. You will see more of that. All of the businesses that are shut on Creek Road will come back. We expect to see property redevelopment and property renewal once the road is completed."

Fashola also explained that the project will be creating wealth around the surrounding areas as trucks will be needed to convey different materials to the site of the construction, and also labour to help with the process. The project has also seen more than 600 people directly employed.

Speaking of how President Buhari plans to bring 100 million people out of poverty, Fashola explains that the economy around the construction will provide jobs and opportunities for Nigerians.

"Once the economy of Apapa returns, all the clearing and forwarding, shipping, newspaper companies and all others doing business will resume fully and the economy will bounce back."

He lauded the private/public partnership scheme with Dangote and pointed out that section two of the project, which was not part of the original contract was already showing signs of failure, due to heavy traffic.

While inspecting the road around the Oshodi area, Fashola said,"We are at the Oshodi area now and one side has been concluded and opened to traffic and this is how we intend to continue to complete and open until we finish the entire road."

Dangote said, "What I can also assure you is that this road will be finished before the end of next year." ■

South African diamond mine benefits from high-quality crushing equipment

Metso is set to deliver high-performance crushing and material handling equipment to the De Beers Group Venetia mine, located in the Limpopo Province.

The Venetia mine is reported to produce an output of about four million carats, making it one of South Africa's mineral resource flagships.

Initially, the Venetia mine was designed as an open-pit operation.

In 2013, an underground extension project commenced with plans to start producing carats in 2022, climbing to full production in 2025 and extending the mine life to 2046. To achieve this, the project team needed a dedicated commitment and optimised, high-performance technologies to deliver on their plans.


Image Credit: Metso
The Metso apron feeder.

The customer approached Metso, known for its world-class equipment and services, to deliver two primary jaw crushers and a number of feeders. All the equipment will be installed underground, which is a very challenging installation, especially given the shaft constraints (dimensions) and weight limitations for transportation underground.

A company spokesman said, "The customer decided on Metso's Nordberg C Series jaw crusher range because the revolutionary pinned and bolted design of the crusher allows for the extensive disassembly. This enhances ease of transportation and installation, especially where there are critical space constraints such as an underground installation – as is the case with this project. The Metso apron feeders are used for extracting or feeding ores that are wet, sticky, dry or even frozen."

TOMRA DELIVERS SURPRISE DISCOVERIES FOR LUCARA

TOMRA's technology has delivered record-breaking diamond recoveries for Lucara Diamond Corporation.

The unique sorting solution successfully recovered two exceptionally large diamonds from the AK6 Kimberlite found at the Karowe mine in Botswana.

John Armstrong, vice president, Technical Services for Lucara said the AK6 Kimberlite presented a challenge because the ore body made it difficult to extract the diamonds via traditional processing systems.

That's why Lucara explored alternative technologies and chose TOMRA in the end.

"We elected to go with TOMRA as our partner in moving forward in getting this technology to the mine into part of the circuit that hadn't been envisioned previously," explained Armstrong.

"When we put in the large diamond recovery circuit in 2015, it was within two weeks of making this investment, which was around 30 to 35 million dollars, that we recovered those two exceptionally large diamonds," said Eira Thomas, CEO of Lucara.

Mining Indaba - Bigger, better and bolder for 2020

For more than 25 years, Investing in African Mining Indaba has been a major event shaping Africa's mining future.

Building on a highly successful 2019 edition, this year's, Investing in African Mining Indaba will be packed with rich content and exciting sessions to bring together the entire mining value chain.

The organiser said the event on 3-6 February attracts more junior, mid-tier and major mining companies, more investors and, as always, the largest gathering of mining ministers in Africa.

The organiser has no plans to slow down for 2020. The event will provide a platform to meet everyone, from the world's largest industry giants to tomorrow's barrier-breaking disruptors, and to connect and learn.

Deal-making is unrivalled at Mining Indaba

For 2020, the intelligent business matchmaking platform has undergone significant development, as well as its expanded Investor Relations team, to increase participants' deal-making potential and to build a simpler way to meet their next business partner.

In addition to unrivalled networking opportunities, Investing in African Mining Indaba 2020 offers an unmissable line-up of sessions to discuss the most prevalent issues and to drive the industry forward.

The organiser stated that major discussions will take place across eight content streams. Below are just a few of the features that will be addressed this February:

Mining 2050 – extended to two full days

With only 25 per cent of top mining companies employing CTOs and CIOs, the organiser examines the importance of these positions in fostering a culture of innovation in the workplace, while looking at pioneering technologies already available and discussing what is blocking greater investment into technology across the industry.

General Counsel Forum – New

The GC Forum is dedicated to discussing the major regional and global legal trends faced by mining lawyers working in Africa. 'A Legal Indaba' provides a platform for the mining lawyers community to

President Cyril Ramaphosa addressing the 25th annual Investing in African Mining Indaba.

Image Credit: GovernmentZA/Flickr

connect and discuss the growing expectations of the mining GC by the board and investors in response to regional trends and global policy reforms.

Battery Metals Day – back by popular demand

The Battery Metals Day, which will take place as part of the Junior Mining Forum, will provide a vital platform for discussing issues surrounding rising global demand for battery metals and how African minerals can continue to meet demand.

Main stage

The main stage will host pioneering discussions, interviews and presentations with the industry's most senior mining stakeholders across the value chain, focusing on optimising growth and investing in the digitised mining economy.

Junior Mining Forum

What drives investment decisions in the African mining market? Through expert discussions with investors, analysts, junior miners and end-users, the Junior Mining Forum provides unparalleled insights into the factors driving investment decisions in Africa's junior mining market. For junior miners, it's an opportunity to learn how to increase their appeal to secure funding, and for investors, it's an opportunity to discover junior miners not previously on their radars.

Mining Indaba is that space – where high-impact networking is unmissable, and the opportunities and conversations are endless to land deal after deal. ■

See the 2020 agenda at www.miningindaba.com

Image Credit: GovernmentZA/Flickr

Meeting the mineral requirements for renewable energy with sustainable mining

Climate change presents a fundamental challenge in the coming decades. For the mining industry, like any other carbon resource industry, this means supplying the raw materials that a growing population requires in as sustainable way as possible, while at the same time supporting the just transition towards a low-carbon future.

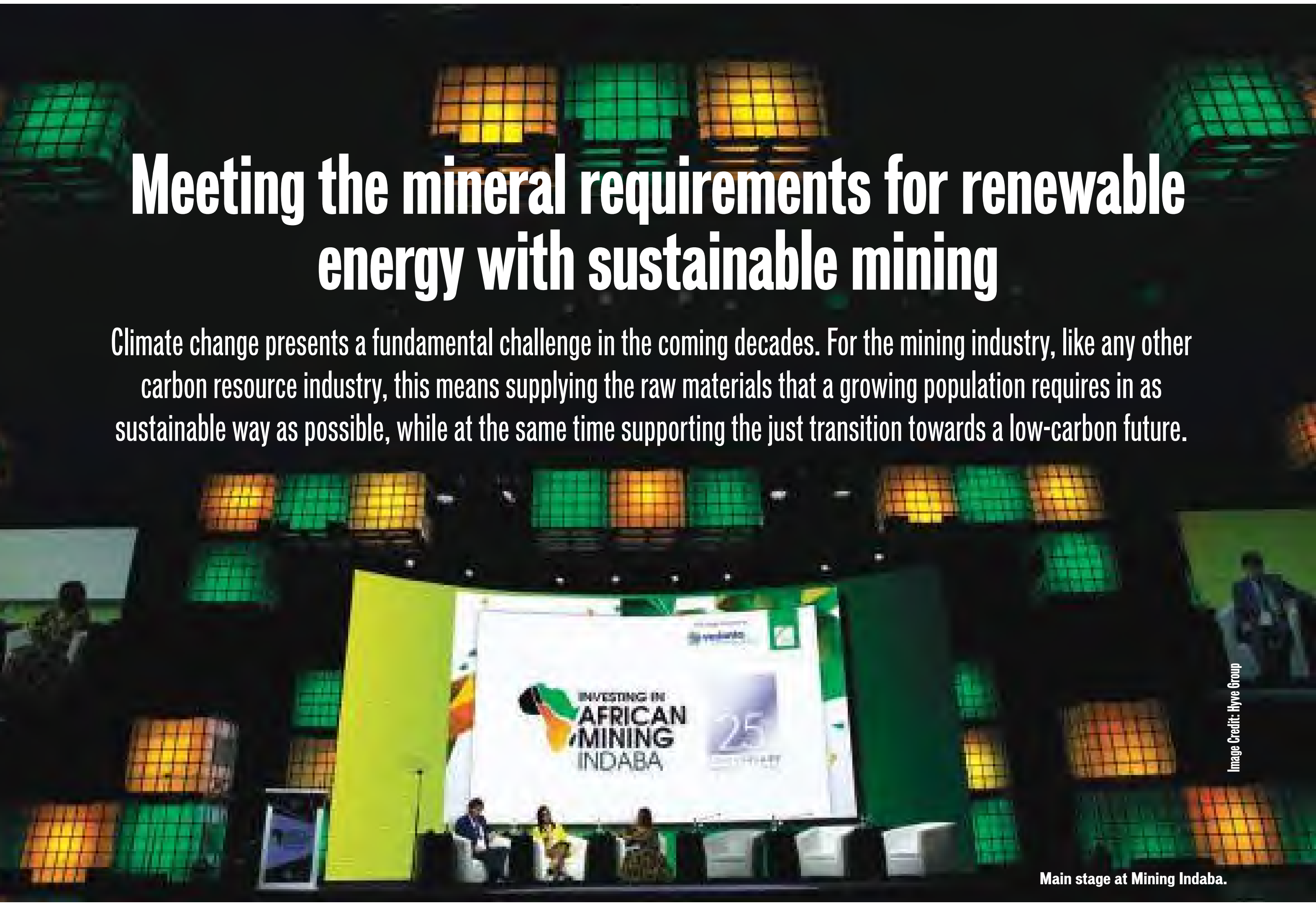

Image Credit: Hyve Group

Main stage at Mining Indaba.

For the mining industry, climate change and the need for a low energy transition that it is driving, are a double-edged sword. On the one hand the industry is under increasing pressure to mitigate its climate impact, whilst on the other hand the surge in demand for renewable energy and sustainable technologies will boost the demand for minerals.

When it comes to change in any industry, finance is at its heart, and with an asset intensive industry such as mining that is an even more pressing issue. Two years ago, this was acknowledged by the World Bank when it published *The Growing Role of Minerals and Metals for a Low Carbon Future*. That report declared that moving to a lower-carbon future will see a significant increase in the demand for several key minerals and metals to manufacture cleaner energy technologies. In other words, the clean energy transition will be significantly mineral intensive.

Based on climate and technology scenarios developed out of the International Energy Agency's (IEA) Energy Technology Perspective, the bank developed a set of commodities demand projections up to 2050. They concluded that the shift away from a dependence on fossil fuels, especially in developed nations, to low carbon energy technology will produce global opportunities with respect to several minerals. The Latin American region (Chile, Brazil, Peru, Argentina, and potentially Bolivia) is in an excellent position to supply the global climate-friendly energy transition. The region has a key strategic advantage in copper, iron ore, silver, lithium, aluminium, nickel, manganese, and zinc. Africa, with its reserves in platinum, manganese, bauxite, and chromium, should also serve as a burgeoning market for these resources.

Support from the World Bank

One problem that is facing companies that are looking to invest in sustainable technologies is securing the necessary finance. Overcoming that challenge is the rationale behind the World Bank's Climate-Smart Mining Facility that it launched earlier this year. It is the first-ever fund dedicated to making mining for minerals climate-smart and sustainable. The facility will support the sustainable extraction and processing of minerals and metals used in clean energy technologies, such as wind, solar power, and batteries for energy storage and electric vehicles. It focuses on helping resource-rich developing countries benefit from the increasing demand for minerals and metals, while ensuring the mining sector is managed in a way that minimises the environmental and climate footprint.

The multi-donor trust fund will work with developing countries and emerging economies to implement sustainable and responsible strategies and practices across the mineral value chain. "The World Bank supports a low-carbon transition where mining is climate-smart and value chains are sustainable and green," said Riccardo Puliti, senior director and head of the energy and extractives global practice at the World Bank. "Developing countries can play a leading role in this transition: developing strategic minerals in a way that respects communities, ecosystems and the environment. Countries with strategic minerals have a real opportunity to benefit from the global shift to clean energy."

A sustainable proposition

The major global mining companies are unanimous in the need to ensure that their operations are environmentally friendly, although they disagree on how far their responsibilities lie. BHP has been talking about the industry's need to look at so-called 'scope three emissions' – these are the emissions generated by people who use the products that they mine.

Speaking at the Financial Times' Climate for Change conference in London earlier this year, BHP chief executive officer, Andrew Mackenzie explained that the company has been setting targets since the 1990s to reduce greenhouse gases from its operations. 2017's emissions were below those in 2006 and it has set a new target to cap 2022 at 2017 levels. "Our long-term goal is to achieve net zero emissions from our own operations," he said. "Next year we will set a medium-term, science-based target for the decarbonisation of BHP operations, which will reflect the goals of the Paris Agreement.

"And we won't stop at the mine gate, we will also increase our focus on scope 3 emissions. These emissions are generated as customers transport, transform and use our products to serve the needs of billions of people and they are almost forty times higher than the emissions from our own operations."

As part of the strategy, BHP announced a US$400mn Climate Investment Programme to reduce Scope 1, 2 and 3 emissions. The GHG Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes'. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions that are not included in scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. "Over the next five years this programme will scale up low emissions technologies that decarbonise our operations. It will drive investment in nature-based solutions and encourage further collective action on scope 3 emissions. Commercial success of these investments will breed ambition and create more innovative partnerships to respond collectively to the climate challenge."

Another major player that is pushing the sustainability agenda is Anglo American. "Our purpose to re-imagine mining to improve people's lives is at the heart of everything we do as a business," Mark Cutifani chief executive, Anglo American said. "Combined with our values and guiding our strategy, it is the context in which we consider the defining challenges of our era, including climate change. It is how we start to answer the question of what our contribution could be in the transition to a low-carbon world and how Anglo American can thrive through and beyond that transition.

"Our portfolio of world-class assets producing the right metals and minerals of the right quality to power a cleaner future, coupled with our approach to both technology and sustainability in its full sense, set us apart." ■

Mining Indaba 2020 will host unmissable pioneering insights and genuine thought-leading discussions. Below are top must-attend sessions on Wednesday 5 February taking place on the Main Stage and Intergovernmental Summit.

Main Stage 5 February
14.00 panel: Climate Change & Sustainability Focus

Intergovernmental Summit 5 February
9:10 Keynote Interview: The Unification of Energy & Minerals Governance in South Africa: Driving a 'Just Transition' and Mapping out the Future
14:00 panel: Public-Private Alliances for Responsible Sourcing of African Minerals

Technology is critical to the future of the South African mining sector

How adopting new technologies from artificial intelligence to robotics can improve safety for miners and promote the automation of the industry.

Image Credit: Sibanye-Stillwater

A digital mine laboratory.

Spiralling labour and energy costs are putting pressure on the financial performance of South African gold mines, but the solution could be found in adopting digital technologies. Most of these new technology solutions revolve around automation, facilitated by the convergence of multiple technologies, from artificial intelligence to robotics. By implementing automation, operators can remove underground workers from harm's way, and that is going to become an ever-bigger imperative if gold mines are to remain (or rather, become) investable by international capital.

This increased emphasis for the safety of the workforce and mines is motivating the development of the mining automation market. Earlier, old-style techniques of exploration and drilling compromised the security of the mine labour force. Such examples have forced operators to develop smart resolutions and tools to confirm the security of workers. For instance, Rio Tinto's Mine of the Future programme is focused on finding advanced ways to extract minerals deep within the earth while reducing the environmental impact and further improving safety.

According to a recent report from McKinsey, 'Putting the Shine Back on South African Mining', technology is one of the four key pillars for success. It can improve employee safety, performance management and visibility. "Companies can provide connected devices, managed by workers, that can communicate real-time data on tasks, workplans and progress reports," the report stated.

The report cites the case of a global mining company that issued connected tablets to its underground workers that improved productivity by ten per cent. Other examples are the introduction of remote operating centres to track and manage the performance of automated drills that are in constant use, reducing downtime and improving both performance and safety.

Partnering to advance automation

One company that is pushing technology into South African mining is Sibanye-Stillwater. Since its founding in 2013, Sibanye-Stillwater has grown from being a South African gold mining company to an internationally competitive, globally diversified precious metals miner, producing gold and the full suite of platinum group metals (PGMs).

The company has a diverse portfolio of platinum group metal (PGM) operations in the United States, South Africa, and Zimbabwe, gold operations and projects in South Africa, and copper, gold and PGM exploration properties in North and South America.

> "Unless we can really make a difference to safety and reduce the risk, I have to question whether we can morally keep on mining"
>
> NEIL FRONEMAN, CEO OF SIBANYE-STILLWATER

One technology programme that Sibanye-Stillwater is involved with is DigiMine, a 21st century state-of-the-art mining laboratory. The aim of the laboratory is to make mining safer and sustainable using digital technologies. The digital mine laboratory at The University of the Witwatersrand, Johannesburg (Wits) is an exciting project where the Chamber of Mines building on West Campus was converted into a 'mine', complete with surface (using the flat roof of the building), vertical shaft (using a stairwell in the fourth quadrant of the building) and mock mine with control room in the basement. The mock mine has a life-size tunnel, stope, lamp room and other features. The mock mine is equipped with the digital systems that will enable the research for the mine of the future and is part of Wits Mining Institute.

The goal of the laboratory is to transfer surface digital technologies into the underground environment – the enabler for a mine that can automatically observe, evaluate and act. The ultimate objective is to use technology to put distance between mine workers and the typical risks they are exposed to daily.

"You don't know what you don't know when it comes to these new technologies such as 3D printing, blockchain, cloud computing and artificial intelligence," Neil Froneman, CEO of Sibanye-Stillwater explained. "But there is a generation that is coming through the ranks that embraces it and it becomes completely natural to them.

"The first point is you have to embrace it and in a recent strategic breakaway we have incorporated it into our strategy. We have reshuffled

Image Credit: Sibanye-Stillwater

Stillwater mine.

Image Credit: Sibanye-Stillwater

Stillwater mining.

Image Credit: Hyve Group

responsibility and appointed one of our executives to drive the Industrial Revolution 4.0 and to pursue aggressively the entire digitalisation concept in underground mining. It is not uncommon in surface mining but in underground mining it's unique, and there are numerous challenges. Clearly, we are looking at knowledge because people of my generation do not have the knowledge required. However, this project is a good example of where you partner with an institution or an organisation that has the capacity and the research capabilities."

When it comes to the driving force behind automation, Froneman is clear safety is the main objective. "I've got to start with safety," he said. "In my view, and I've said it publicly, that unless we can make a difference to safety and reduce the risk, I have to question whether we can morally keep on mining." ■

MINING INDABA MUST-SEE DEBATES:

Main stage: 4 February
3.20pm
PGMs Focus - Cleaner mining, cleaner planet: Platinum Group Metals and the opportunity of the Energy Transition
Speaker: Chris Griffith, CEO, Anglo American Platinum

5.20pm
Panel: Investor Focus
Preparing for the Fourth Industrial Revolution: How can African mining position itself for growth and avoid the shocks of potential automation?
Speakers: Deshnee Naidoo, CEO, Vedanta Zinc International.
Tshokolo Nchocho, CEO, Industrial Development Corporation (IDC)
Anik Nichaud, group director, Corporate Relations, Anglo American

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The Cat 794 AC mining truck is equipped to meet US emissions standards while maintaining high performance and reducing operating costs.

CAT 794 AC MINING TRUCK

Image Credit: Caterpillar

Key features:

- The 320-ton-class (290-tonne-class) 794 AC features the Cat C175-16 diesel engine with gross power of 2,610 kW (3,500 hp).
- The Tier 4 truck is equipped with an exhaust after-treatment system using a selective catalytic reduction system (SCR), which uses diesel exhaust fluid to reduce emissions of nitrogen oxides. It provides the most robust and reliable Tier 4 Final emissions compliance without sacrificing engine performance.
- The modular SCR design is adopted from other Cat production machines and boosts easy serviceability with accessible components. This Cat emissions platform is proven through more than 20 million operating hours in the field.
- Caterpillar is using the same exhaust after-treatment platform in the process to gain EU Stage V certification of the 794 AC. The Stage V certification process is currently in progress.

Comprehensive field testing

Caterpillar conducted an on-site performance study of the 794 AC Tier 4 Final trucks in a copper mine and measured no loss in performance or productivity compared to the Tier 2 equivalent 794 AC trucks. In addition, the machines demonstrated up to 5.6 per cent less diesel fuel burn over the haul cycle.

The 794 AC Tier 4 Final trucks have completed more than 10,000 hours of operating time in multiple North American mines. ■

For more information about Cat large mining trucks visit www.cat.com

TEREX TRUCKS: TA400/TA300

38 tonne TA400

- A high performance, fuel efficient engine ensuring exellent productivity, with a gross power of 444 hp (331 kW) and a maximum torque of 2,255 Nm (1,663 lbf ft).
- Boasts a heaped capacity of 23.0 m^3 (30.3 yd^3) .
- The planetary gear transmission provides smooth, efficient gear shifting for optimised fuel consumption and reduced cost of operation.
- Ground level test points and a fully tilting cab, combined with an electronically raised hood, ensure ease of service and reduced downtime.


TA400

Image Credit: Terex Trucks

28 tonne TA300

- It is now manufactured with the latest EP320 transmission.
- The updated machine delivers a 5 per cent improvement in fuel efficiency, a 5 km/h (3.1 mph) increase in speed to 55 km/h (34 mph), an extended maintenance period and enhanced performance when compared with the previous model.
- Offers a heaped capacity of 17.5 m^3 (22.9 yd^3) and a gross power of 370 hp (276 kW).

> "The last Terex Trucks hauler we sold was delivered to a place that's further away from the Algerian capital than Brussels"
>
> **BENOIT STRAUVEN, MANAGING DIRECTOR, MATERMACO GROUP, TEREX TRUCKS' DEALER IN THE BENELUX REGION**

"At Terex Trucks, we are dedicated to building powerful articulated haulers," says Etienne Lalande, regional sales director at Terex Trucks. "That's what we are specialised in. Our customers in Algeria know that they can rely on our haulers even in the toughest environment. Our dealer Matera is particularly strong in providing excellent service and support to customers, and together we want to bring our haulers to more customers in the region."

"With our deep knowledge of Terex Trucks' machines and our broad network, we maintain great relationships with our customers and stay in touch with them at all times," says Benoit Strauven, managing director at the Matermaco Group, Terex Trucks' dealer in the Benelux region and parent company of Matera. "In a country like Algeria, good geographical knowledge and strong local connections are key. It's a vast country – the last Terex Trucks hauler we sold was delivered to a place that's further away from the Algerian capital than Brussels." ■

New power solutions for Africa's mining sector

Getting to grips with the continent's mining energy challenges: with South Africa facing shortfalls, West Africa is leading the way with new solar hybrid solutions. Martin Clark reports.


Image Credit: Adobe Stock

The mining industry has long underpinned growth and development in many of Africa's key economies, from South Africa to less developed states such as Mali and Burkina Faso.

And powering the mines is an integral part of any successful project – but an issue that throws up tremendous challenges given the overall lack of infrastructure across much of the continent.

That's even become evident in South Africa, which has, for more than a century, grown stronger on the back of its rich minerals wealth.

Recently, however, power cuts and funding woes at state utility Eskom – which generates more than 90 per cent of the country's power – have brought with them problems for the nation's big mining companies.

Flash flooding in December resulted in electricity blackouts that halted production at a number of major mines operated by the likes of Harmony Gold, Impala Platinum and Sibanye-Stillwater.

It marks the latest challenge for miners in the wake of regular load-shedding and outages by the beleaguered state power firm.

Given that the strategic mining sector generates roughly 7 per cent of South Africa's gross domestic product, it's a high-priority issue for government – and the industry itself.

Relaxing the rules on self-generation

It could even accelerate electricity market reforms, with the Minerals Council South Africa calling for more urgent action to address the issue.

It called for "drastically streamlined regulatory processes" to enable the rapid establishment of self-generation facilities to supplement Eskom's constrained capacity.

This could rapidly open the door to further generation by independent power producers.

Minerals Council chief executive Roger Baxter described the situation as "devastating for the mining sector" back in December after the floods and cuts closed nearly all underground mines in the country.

The industry body is backing measures to boost power supplies by the Department of Mineral Resources and Energy, but is also calling for more relaxed rules on self-generation regardless of plant size.

It reckons that 869MW of solar power and up to another 800MW of conventional power could be added to the grid by mining companies over the next three to four years, with more available from other energy intensive sectors.

Unregulated generation is currently limited to 1MW plants with indications that this will be increased to 10MW.

Potentially, if the rules are eased, it could trigger a huge opportunity for power plant suppliers to work more directly with the mining houses to install immediate new demand.

"These new self-generation plants would be at no cost to government, the tax-payer or Eskom and would help provide the room for Eskom to get its house in order," said Baxter.

Emergence of hybrid power solutions

While South Africa is grappling with the demise of its once-proud utility, Eskom, many of the continent's emerging economies have never had the luxury of dependable power.

Traditional diesel gensets have long been the workhorse of the gold and diamond mines in more remote parts of West Africa, yet even here there is change, brought about by the intersection of economics, new clean energy technology and environmental pressures.

That includes the emergence of hybrid power solutions as at the Syama gold mining complex in southern Mali, where thermal, solar and battery power systems are to be installed by Resolute Mining.

A huge power project is now underway at the plant, involving leading energy industry players such as Aggreko and Wärtsilä — it will ultimately include 40MW thermal power, a 10MW battery storage system, and a further 20MW of solar power.

The first phase includes the installation of three modular blocks, based on Wärtsilä 32 engines providing a total of 30MW of power, next to an existing power station, and a 10MW Aggreko Y.Cube battery storage system.

First delivery of power is expected in the third quarter of 2020.

A second phase will see the installation of a further 10MW Wärtsilä block in 2022 and 20MW of solar power in 2023. Once the solar system is installed, the batteries will smooth out fluctuations in the solar power output to facilitate integration into the hybrid system.

Aggreko has been supplying rental sets at the Syama mine site since 2015.

It is a trend that sits well with operators in the extractive industries sector, tasked not only with generating dependable energy for mining operations, but also reducing environmental impact.

Solar plant for Fekola mine

Integrating renewable energy into the Syama operation is not a one-off, though.

Canada's B2Gold last year approved a US$3mn investment to build a new off-grid solar battery hybrid system at its Fekola mine, also in Mali.

The company is looking to boost power supplies as part of a major upgrade to the mine.

It has already initiated engineering and construction work for the addition of a 30MW solar power plant, which the company says will result in reduced operating costs and greenhouse gas emissions, working alongside Germany's Suntrace GmbH and BayWa r.e.

Completion of the plant is scheduled for the third quarter of 2020.

Although the current onsite power plant has sufficient capacity to support the expanded processing throughput, with or without the solar plant, it underlines a rise in interest to alternatives.

Again, that's in part driven by heightened environmental scrutiny, but also economics.

B2Gold says its new solar power plant is estimated to reduce Fekola's overall processing costs by approximately 7 per cent.

The PV battery system will be integrated with the existing power plant to ensure safe and reliable operation of the hybrid system and allow fuel savings of 13.1 million litres of heavy fuel oil per year.

"It is a strong commitment by B2Gold to build such a significant solar-battery plant as a fuel saver for the Fekola mine," said Martin Schlecht, chief operating officer of Suntrace. "This project is a landmark in terms of battery and PV plant size with respect to an off-grid project."

Electricity for the site is currently generated exclusively by HFO and diesel generators.

The new solar battery plant will allow the mine to shut off up to three HFO engines during daylight hours, with the 13.5 MWh battery storage providing the buffer for the irradiation fluctuations. ■

> "It's a strong commitment by B2Gold to build such a significant solar-battery plant as a fuel saver for the Fekola mine"
>
> **MARTIN SCHLECHT, CHIEF OPERATING OFFICER OF SUNTRACE**

MYTILINEOS - powering the mine

Building on a long-standing experience in the mining, energy and construction sectors, MYTILINEOS has developed a complete range of power generation and related solutions for mining and industrial customers.

Image Credit: MYTILINEOS

Specifically, the company's EPC and Infrastructure Business Unit – METKA has managed to ensure reliable, high-quality power supply for the operation of remote and off-grid mines, minimising the energy costs over the life-time of the project, as well as exposure to volatile factors, such as the cost of fossil fuels, and eliminating any possible disruption to plant operations.

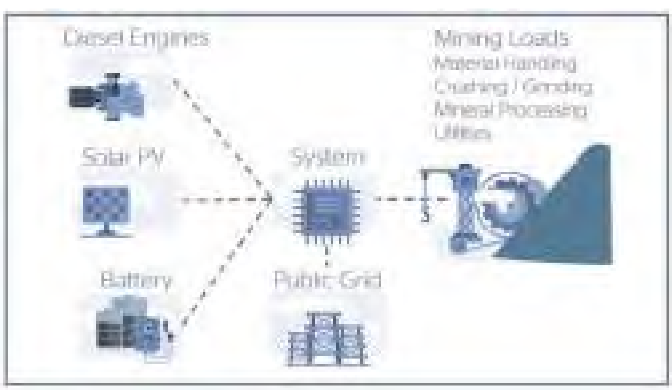
This vast experience derives from numerous operations on remote locations, through various challenges of expensive, unreliable and low-quality power supply. On top of that, mining operations often deal with limitations in supply logistics, that generate additional risks. MYTILINEOS provides solutions for those challenges through specialised power plant configuration and innovative business models.

This end-to-end solution philosophy, especially in cases of remote and off-grid mines, with limited Life of Mine (LoM), starts from joint project development, through to long-term operation and maintenance. Based on an accredited Independent Power Producer (IPP) solution that is provided on a BOO or BOOT basis, with contract terms according to the Life of Mine (LoM), that typically start from five plus years.

Through a broader energy management and efficiency improvement philosophy, MYTILINEOS' hybrid power plant design can be further optimised resulting in maximum OPEX savings.

The Hybrid Plant Concept is fully integrated and adapted to each installation, typically combining:

- Reciprocating engines or gas turbines, operating with liquid fuels (diesel/HFO), natural gas or even in duel fuel configuration (liquid/gas). The fuel costs/OPEX is continually optimised by our central control system
- Solar PV, combined with battery storage, sized to accommodate the start-up and dynamic power requirements of the installation, especially of the critical loads. Combining renewables with battery storage provides an ideal replacement of spinning reserve for critical loads, with the added benefit of improved overall power quality
- Grid energy, when available, which may reduce the volume of investment required, increasing at the same time the overall energy availability. ■



Emeralds in Zambia

Africa Review catches up with Rashmi Sharma, co-owner of Jewel of Africa, on the growing emerald industry in Zambia and producing world-class jewellery.

African Review: Jewel of Africa has been operating in Zambia for 25 years. As co-owner, what was the vision behind setting up the company in the first place?
Rashmi Sharma: As professionals in the gem and jewellery trade, we identified a gap in the industry and decided to add value to our natural resources of gems by cutting and polishing, jewellery manufacturing, certification, retailing and exporting.

AR: Which mines do you source emeralds from?
RS: We have won auctions for emeralds from mining companies such as Gemfields and Grizzly Mining, as well as from artisanal miners. We have also restarted our mining project at Marlex Emerald Mine.

AR: Jewel of Africa made history at the Kagem auction this year; what was the significance of this purchase for the company and mining in Zambia as a whole?
RS: We became the first Zambian company to ever win at the Gemfields Auction. It is a source of great pride for us and the country that these top gemstones were processed and beneficiation was done in Zambia – helping to create a local industry that benefits the local people.

AR: What other gems do you sell?
RS: We sell aquamarine, tourmaline amethyst, garnet, citrine, ruby, sapphire; in all variations, especially yellow and blue, and tanzanite, diamonds and opal.

AR: Are they all sourced from Zambia?
RS: Almost all our raw materials are sourced in Zambia. For gemstones that are not indigenous to Zambia, we source outside in small quantities.

Jewel of Africa employs Zambian craftsman to make their jewellery.

Image Credit: Jewel of Africa

AR: How are you promoting the Jewel of African brand in other markets?
RS: We are exhibiting across the world with support and help from government at the Zambian embassies.

AR: What has been Jewel of Africa's experience in dealing with the government?
RS: The government has shown a real willingness to support Jewel of Africa to trade beyond Zambia through AGOA, SADC & COMESA Trade Agreements as well as exhibitions. We have ambitious plans to join the ATA Carnet system in order to exhibit in 70 other countries. Currently, Zambia is not a member of the system, prohibiting us to bring jewellery for exhibitions duty-free and tax-free.

AR: What is the major challenge the company faces?
RS: We are growing organically as traditional financing options are difficult to access in Zambia.

> "The more players there are in the market, the more exposure Zambia will receive, leading to our gemstones being recognised all over the world"
>
> **RASHMI SHARMA , CO-OWNER OF JEWEL OF AFRICA**

Rashmi Sharma

AR: What advice would you offer companies in order to follow in Jewel of Africa's footsteps?
RS: The gemstone industry in Zambia is very young and we've only started to flourish. The more players there are in the market, the more exposure Zambia will receive, leading to our gemstones being recognised all over the world.

AR: What makes your business stand out from the competition?
RS: We are a vertically integrated company that adds value to our natural resources, producing world class jewellery at a lower price point. We mostly have Zambian staff that we continuously train to ensure that we are up to date with modern trends and techniques of jewellery production. We also have a wide retail footprint that makes our products easily accessible, and our workshop is open to the public to observe first-hand the manufacturing process from start to finish.

AR: Anything else you would like to share with our readers?
RS: Zambia has a variety of high quality natural gemstones. There are currently eight, but more are being discovered. At Jewel of Africa, we want to promote gem tourism in Zambia to show that Zambian gemstones are of the highest quality with little enhancement, as well as highlight Zambian fine craftsmanship and open trade opportunities with stakeholders. ■

Barrick Gold's Lumwana copper mine in Zambia.

Image Credit: Hanna Ounap /Global.finland.fi/Flickr

Zambia: Good investment destination for mining

Minister of Mines and Mineral Development Richard Musukwa invited investors at Europe's largest mining investment event to take advantage of stable policies and vast mineral resource potential.

When *African Review* met Richard Musukwa MP, Zambia's Minister of Mines and Mineral Development during Investing in Africa Mining Indaba 2019 his main message was that Zambia was open for business.

A year later, the minister's message remains the same, inviting investors to take advantage of the country's stable policies and vast mineral resource potential.

Speaking at the Mines and Money London event, last November, he cited the World Bank's 2020 Ease of Doing Business Report, which rated Zambia as one of the top 10 best performers in Africa, as well as ranking seventh in Africa and fifth in sub-Saharan Africa.

"Zambia is a favourable investment destination for mineral development and mining. We've unexploited vast potential mineral resources aside from the traditional base metals in the country," he said[1]. Zambia has vast copper reserves in the Copperbelt Region and in the North-Western Province where FQM owns 80 per cent of the Kansanshi mine, Africa's largest copper mine, the remaining 20 per cent is owned by a subsidiary of ZCCM-IH. Kansanshi, based 10km north of the town of Solwezi, produces 340,000 tonnes of copper and more than 120,000 ounces of gold per year.

Barrick Gold owns the Lumwana mine, another large copper mine in north-west Zambia. The mine was recently valued to be worth more than US$735mn, according to Barrick Gold's CEO Mark Bristow, quoted in a Bloomberg report last October.

He played down speculation there were plans to sell off the mine to potential buyers, such as China Minmetals Corp and Jiangxi Copper Co and Zijin Mining Group, saying "expressions of interest" had been received.

The company planned to produce US$273mn to US$313mn in 2019, up by 14.6 per cent, making it one of the largest producers in Zambia.

The other two major copper mines are Mopani and Konkola Copper Mines. All four have been described as the "barometer for the state of health of the mining industry – and by extension, of the Zambian economy", reported the Mining for Zambia website.

There are various mining operations taking place in the Southern Province and Eastern Province – the latter which has massive gold reserves and has in the past attracted illegal mining activities.

The Zambian government, however, has been making huge strides in formalising and making these operations legal for the benefit of the industry and the community.

CEO Mabvuto Chipata of ZCCM-IH, the government's investment holding company, which is a minority shareholder in Zambia's big four copper mines, told investors at the Mine and Money London conference, "ZCCM-IH is working in collaboration with the Ministry of Mines to ensure the formalisation of artisanal and small scale gold miners, and also participate at a large scale in terms of mining as a company as well. We have since started with preliminary exploration works on a potential large scale mining operation for gold in a prime area with a target to start operations next year."

Image Credit: Zambian High Commission in the UK

> "ZCCM-IH is working in collaboration with the Ministry of Mines to ensure formalisation of artisanal and small scale gold miners"
>
> **MABVUTO CHIPATA, CEO OF ZCCM INVESTMENT HOLDINGS**

Chipata added that the government was promoting the setting up of businesses within Zambia to utilise minerals in the manufacturing of finished products.

He gave the example of iron ore deposits that remain unexploited and can be used in the iron and steel industry with SADC and COMESA regions offering ready markets[2].

Zambia also has some of the largest quantities of cobalt and gemstones in Africa. Minister Musukwa explained, "With the increasing demand for electric motor vehicles, we are trying to invest heavily in the exploitation of cobalt and set up cobalt and copper operations, running alongside one another. I want to see in my lifetime as Minister of Mines and Minerals, the development of a cobalt and manganese mine, because we have a lot of manganese reserves too. We also want to establish an emerald mine. While we welcome investors, they must ensure that they support our economy through job creation by way of value addition, such as tangible infrastructure in the areas of health and education." ■

Source:[1 & 2] Abigail Chaponda, the first secretary for press and public relations at the Zambian High Commission in the UK

G9290 - Heavy-duty size class motor grader.

Image Credit: SDLG

SDLG enters heavy-duty motor grader market with new G9290 model

Leading Chinese construction equipment manufacturer SDLG is proud to announce the latest addition to its range of motor graders, the G9290. With a base operating weight of 22.9 tonnes and a 14ft wide blade as standard, the impressive productivity of blade down force and blade pull makes the SDLG G9290 the best in its size class.

The new G9290 is the first motor grader from SDLG in the heavy-duty size class. Its strength and capacity are making it ideal for mining haul road maintenance, infrastructure projects, road construction, highways and airports.

The robust design of the new G9290 motor grader builds on the proven reputation of its smaller brothers – the G9138, G9190 (VHP) and G9220 (VHP) – when it comes to the moldboard, circle turn, drawbar, front axle and rear tandems.

However, the G9290 adds a new level of quality with its Volvo-supplied engine and Volvo-designed transmission. A member of the Volvo Group since 2007, SDLG draws on the strength of the group to incorporate high-performance designs and technologies into its products where appropriate.

Value machine, premium technology

The SD130B Stage III diesel engine with electronically controlled fuel injection system, supplied by Volvo, offers high torque at low revs from a 211kW output with Variable Horse Power (VHP) technology as standard. Meanwhile, the HTE840S transmission, designed for motor graders by Volvo, has eight speed forward gears and four speed reverse gears all with automatic shifting.

The engine is cooled by a thermostatically-controlled, hydraulically-driven fan, which can be reversed simply by flipping a switch in the cab for easy radiator fin cleaning.

Superior blade mobility and control

The moldboard is kept level at all times by the 16° oscillation on the heavy-duty front axle, 18° wheel leaning and +/- 15° oscillation on the rear tandem, ensuring quality, fine grading.

The heavy-duty chain-driven tandem with a no-spin differential lock on the rear axle and heavy-duty bearings, meanwhile, delivers outstanding traction and reliability.

The circle turn, exclusive to SDLG, uses twin-gear hydraulic cylinders to provide instant, high-output torque, enabling moldboard rotation under heavy loads. This means there is no need to stop, reverse and change moldboard angle. Having circle turn gears on the outside of the ring gives the benefit of less mud and debris stuck to the gears and hence less wear, less maintenance and longer durability.

The unique SDLG circle drive system comes with five support shoes on the G9290 and non-greasing slide bushings for better grading, an extended service life and easier maintenance. SDLG graders feature an asymmetric drawbar ball stud that can be rotated 180° in order to keep the drawbar in horizontal level position – vital when performing fine grading.

The G9290 offers tremendous blade mobility, which may be easily performed hydraulically from inside the cab, thanks to the SDLG Blade Control System. The hydraulic lock bar features seven positions to enable blade positioning from a 90° vertical position on both sides of the grader to a 21° downward ditch cleaning angle.

The hydraulic system consists of one variable displacement axial piston pump supplying oil to the proportional closed centre load-sensing main control valve.

Reliable build, reliable performance

The durable and reliable frame comes factory-prepared to accept all types of attachment with no need to weld or cut to fit attachments, like a scarifier or a ripper to the machine. The front frame is engineered to be strong enough to accommodate the front attachment, the moldboard and the circle turn, while still providing optimal visibility for the operator.

A box-type design on the rear frame offers superior strength and durability, accommodating the drivetrain as well as rear attachments. For example, SDLG offers a parallel rear ripper for the G9290 fitted with three ripper shanks. The ripper frame can accommodate scarifier teeth if required.

Safe and comfortable operation

A ROPS/FOPS-certified cab ensures the safety of the operator. It is fitted on the front frame of the G9290 in order to reduce vibrations and heat from engine and transmission. Entry and exit can safely be made with three-point contact all the way. The cab is fitted with LED work lights to ensure safe operation even in the absence of daylight.

The design of the G9290 provides excellent visibility for the operator to the front and the sides of the machine, with large windows to enhance all-round visibility. The sloping front frame provides excellent visibility to front objects. Inside the cab, the low efforts control levers are ergonomically laid out with adjustment possibilities to fit every operator's needs. ■

REAL-TIME OPERATIONS INTELLIGENCE – DIGITAL, DIRECT AND ON THE GO

FLSmidth has launched a new generation off-site management information system for cement and mining. Customers can access a suite of mobile and web apps that bring performance data out of the control room and direct to their laptop and smartphone.

FLSmidth is bringing the digital revolution to the cement and mining industries with a new generation of products focused on delivering real-time data on the go. These latest products form part of the FLSmidth ENABLR portfolio of digital solutions that connect, monitor and optimise asset performance and enable customers to simplify operations and improve productivity.

The solutions include **SiteConnect Mobile** Insights App: a simple-to-navigate mobile app, delivering insights on the go with on-demand equipment and plant performance and health data. Data signals – known as tags in the app – can be easily found and monitored.

Image Credit: FLSmidth

FLSmidth is launching a series of digital solutions for the cement and mining industries.

ECS/PlantDataManagement: A comprehensive management information system designed for the cement and minerals industries. The latest browser-based system integrates all process and quality information islands, making critical real-time plant data available to operational, management and executive personnel.

ECS/UptimeGo: A downtime analysis solution to help plant staff identify the issues that interrupt operations and prevent unwanted future downtime.

"With on-demand and remote access to key data points, we are putting users in control of optimising their plant and equipment performance health," said Ole Knudsen, head of digitalisation product management. "We live in an interconnected, data-rich world. Our suite of products helps make sense of this data, bringing insight and transparency to plant and equipment operations."

CDE to launch latest Combo innovation at CONEXPO-CON/AGG 2020

CDE is set to revolutionise the wet processing industry once more with the launch of the latest in its range of Combo all-in-one wet processing solutions at CONEXPO-CON/AGG in March.

The patented Combo – the world's first all-in-one wet processing plant – was unveiled in Europe at bauma in April 2019. It was the first fully integrated, modular, patented turnkey materials wet processing and water management solution for the production of premium manufactured sands.

The latest model in the Combo range will have a number of soon-to-be-revealed enhanced features that have been specifically designed to enable operators in the Americas to capitalise on new opportunities.

Ruchin Garg, CDE regional manager for the Middle East and North Africa, said, "At CDE, we are proud to deliver optimised operations for maximum yields and fast returns for our clients. Our high-performance solutions maximise resources and add huge commercial value to our customers' enterprises, with the innovative Combo having led the way in a new era of wet processing.

"We are looking forward to launching the latest Combo model at CONEXPO-CON/AGG, directly to the very market that inspired it. This next generation plant will deliver significant commercial benefits while minimising operational costs."

Wet processing technologies

CDE stated that its pioneering wet processing technologies enable greater production efficiency, increasing yield to maximise profit per tonne, delivering a rapid return on investment.

Unrivalled fines separation and greater sand dewatering ensures sand and aggregates producers maximise yields with less than 15 per cent moisture content creating a steady stream of revenue straight off the belts to command the highest possible market price.

Boosting profitability, CDE wet processing technology, including its patented Combo range, benefits from significant efficiency savings.

Lower power consumption complemented by industry-leading water treatment and management allows customers almost total independence of water supply with up to 90 per cent of process water recycled for immediate re-use in the system – ideal for jurisdictions with limited resources or those with existing environmental or impending environmental legislation. Ensuring optimum uptime and productivity of a CDE plant, enabling it to process higher volumes of feed material to accelerate return on investment.

Importantly, the Combo is portable and incorporates all five essential processes – feeding, sizing, sand washing, stockpiling and complete integrated water management – onto one compact and modular chassis.

Kevin Vallelly, director of engineering at CDE, said, "The Combo is the first all-in-one materials processing system that accepts both natural sand and crushed rock feeds, giving our customers complete flexibility in the choice of the material they want to process depending on available reserves. Natural sand reserves are a finite resource and the CDE cyclone technology ensures that not one grain of valuable sand is lost to ponds. At CDE, we are unlocking a new world of resource, driving alternatives for sand production. We aim to give our clients full production flexibility through the delivery of customised and sustainable solutions."

Image Credit: CDE

CDE's most recent Combo innovation.

The entire Flexigester unit installed and attached to the lavatory block in a childrens' village in Malawi.

Image Credit: Butyl Products

Rural sewage: challenges and solutions

In rural regions and of Africa, effective sanitation and sewerage can mean the difference between clean and healthy living and scenarios in which disease and sickness can spread. Tim Guest reports.

According to the UN, around 700 million people in Africa have no basic sanitation, which leads to sickness, particularly in relation to human faeces, the principal source of bacteria, viruses and parasites that cause diarrhoeal and other infectious diseases. Indeed, with Africa's population remaining predominantly rural, basic sanitation is needed, not least of all, to combat widespread open defecation; according to various NGOs and agencies like the World Health Organisation (WHO), open defecation is still practiced by around 30 per cent of people across Africa and is actually on the rise. In the first 15 years of this millennium the number of people practicing open defecation in sub-Saharan Africa rose from around 204 million to 220 million. And it is not just people who suffer; raw untreated sewage removes oxygen from water, creates murkiness preventing sunlight penetrating downwards. The result: fish and other aquatic animal and plant life perish.

Solving the rural sewage challenge

While open defecation is a huge problem and the safe management of human excreta forms the basis for good sanitation, it is, nevertheless, a challenge with relatively simple, 'first-step' solutions. Local rural facilities can be as simple as dry composting toilets and dry pits, with a number of simple, improved installation types increasingly deployed. These range from ventilated improved pit latrines (VIPs), hanging toilet latrines and twin pits with slabs (sanitary platforms), to composting toilets, pit latrines with slabs, flush toilets (to unknown destination), flush toilet to pit latrine, flush to a septic tank and flush to a piped sewer system (less common at this time).

Who's doing what?

The Water Project is one organisation active in aiding the deployment of simple and effective sanitation solutions in rural Africa. They educate communities in hygiene and sanitation issues, training them in proper disposal of waste, personal hygiene and cleanliness. The agency aids the installation of VIPs, which have vent pipes that carry smells outside and reduce fly problems. The Water Project also introduces Sanitation Platforms – or SanPlats – into communities. The SanPlat is a slab over which an individual squats to use the bathroom and the agency team typically chooses five households in a community to receive SanPlats made on site under their guidance. Other households are then encouraged and inspired to build their own with materials provided.

One maker of sanitation platforms and latrines is Butyl Products, which provides mould kits to enable the creation of small concrete latrine slabs that can be used over pit latrines or trenches. These are a cost-effective option if large quantities of slabs are required and are made using quality materials that are durable enough to withstand most commonly known chemicals, vermin and termites. The company's sanitation platforms are easily cleaned and available in a variety of sizes. Butyl Products is also involved in the manufacture of the anaerobic digestion and sewage isolation system, Flexigester, which it has installed in a number of African countries providing treatment for sanitation waste direct from pour-flush latrines, animal waste and kitchen waste, converting it to biogas for cooking and biofertiliser for growing crops.

> "Two organisations raising awareness of this sector through high-profile events are WISA and IFAT"

The company says Flexigester is a unique, cost-effective way to capture, isolate and treat organic waste that is suited for use in hot, low-income countries where it will deal with animal manure, human sewage and food/kitchen waste from institutions, farms or rural and urban communities. Flexigester Systems are designed and developed by Sustainable OneWorld Technologies C.I.C. (SOWTech) in joint partnership with Butyl Products, which manufactures and distributes the systems. SOWTech is the technical partner and Butyl Products the commercial partner.

Still for rural scenarios, but this time aimed at different end users, Biorock Wastewater Treatment in

Pretoria has an aerobic sewage treatment product range suited for retrofit of traditional septic tanks that recycles wastewater for re-use, typically for irrigation. Users include single domestic dwellings, residential estates, guest houses, game lodges, schools, border posts and police stations, mine change houses, rural petrol stations and other commercial facilities. Biorock units use natural air draft for aeration during a three-stage treatment process. Raw sewage enters a primary tank for separation and breakdown of organic solids then passes through an effluent filter before discharging into the Biorock unit, which incorporates its aerobic digestion process and then a filtration process.

Trans Butyloo Double - latrine unit featuring 2 separate squatting plates.

Butyloo single unit latrine featuring rot/vermin-resistant squat plate. Designed to be positioned over a pit.

> "Flexigester is a unique, cost-effective way to treat organic waste"

On stage and strategic

Two organisations raising awareness of this sector through high-profile events are WISA* and IFAT. WISA is the non-profit Water Institute of Southern Africa, and IFAT, which is said to be the World's Leading Trade Fair for Water, Sewage, Waste and Raw Material. The two entered into a partnership in 2018 so that all future WISA conferences for the South African water sector, including WISA 2020, will benefit from the comprehensive industry network of Messe München through IFAT Africa, one of the five subsidiary events of IFAT, Munich. IFAT Africa was an official partner of the WISA Biennial Conference and Exhibition held in Cape Town in 2018.

The latest IFAT Africa event for Water, Sewage, Refuse and Recycling actually took place in July in Johannesburg, with WISA one of the speakers presenting new approaches to water management, decentralised wastewater treatment and sewage-to-energy ideas. For its part, the WISA 2020 #allhandsondeck event will take place next summer in Johannesburg and will address such things as basic infrastructure, inequalities in access to services and deteriorating raw water quality. Dr Lester Goldman, CEO of WISA, said, in preparation for the event, that in a country like South Africa, the work done by the water sector has a major influence on the sustainability and success of communities and the economy. He added that as an integral part of all sectors it is time to stop looking at water in isolation and ensure that it is carefully used, re-used and renewed across all industry sectors.

*WISA 2020 takes place at the Sandton Convention Centre in Johannesburg from 31 May to 4 June, 2020. ■

Advertiser's Index

Committing to 'future of work' road map in Africa

The International Labour Organisation's (ILO) 14th Africa Regional Meeting in Abidjan, Côte d'Ivoire, concluded with a declaration reaffirming the need for a human-centered strategy to boost equitable development.

The official closing ceremony of the 14th African regional meeting in Abidjan.

Image Credit: ILO

Representatives from 49 African countries have issued a call for a human-centred approach to the future of work to unleash Africa's potential for inclusive growth and create a future of work with social justice.

The Abidjan Declaration, entitled *Advancing Social Justice:* Shaping the Future of Work in Africa, was issued by delegates representing governments, workers' and employers' organisations, attending the 14th African Regional Meeting (AFRM) of the International Labour Organisation (ILO). The meeting on 3-6 December was the culmination of the ILO's Centenary celebrations in 2019, which also marked 60 years of the organisation's presence in Africa.

The declaration builds on the approach outlined in the ILO Centenary Declaration for the Future of Work, adopted by the International Labour Conference in June 2019.

It recognises that improvements have been made since the Addis Ababa Declaration was adopted at the 13th African Regional Meeting in 2015 in terms of economic growth, poverty reduction, wages and education, and that "with [Africa's] largely young and energetic population...its abundance of natural resources and potential for further growth is promising". However, it also recognises that "transformative processes need to be accelerated", and serious concerns remain in areas including inequality, unemployment and under-employment, youth employment, child and forced labour, migration, social protection and climate change.

The declaration calls for the shaping of an African Decent Work Agenda, with a focus on five core priorities:

- Making decent work a reality for Africa's youth, developing skills, technological pathways and productivity for a brighter future in Africa, transforming the informal and rural economy for decent work, respecting international labour standards, promoting social dialogue and gender equality.
- Strengthening the capacities of all people to benefit from the opportunities of a changing world of work.
- Strengthening the efficiency of the institutions of work to ensure adequate protection of all workers.
- Promoting inclusive and sustainable economic development and growth, full and productive freely chosen employment and decent work for all.
- Strengthening synergies between the ILO and institutions in Africa.

The declaration calls for investment in education and training, tackling gender inequality and discrimination, ensuring rights for youth, extending social protection, supporting the private sector, in creating economic growth and jobs, promoting productivity and technological pathways for decent work.

Welcoming the adoption of the declaration, the ILO's Director-General, Guy Ryder, told delegates that it provides "the road map to guide our efforts in the years ahead".

He pointed to its strong alignment to the ILO Centenary Declaration for the Future of work, "with its insistence on the need to invest in strengthening the capacities of people; in the institutions of work; and in inclusive and sustainable development and growth, full and productive freely chosen employment and decent work for all".

Ryder added that the meeting had fulfilled its fundamental purpose by "translating the ILO's Centenary Future of Work Initiative and Declaration into the realities of Africa and providing the necessary guidance for its operationalisation".

President of the 14th African Regional Meeting, Pascal Abinan, Côte d'Ivoire's Minister of Employment and Social Protection, said that the world of work in Africa faced challenges. He said, "On the one hand, providing training to our youth to enable them to have access to work, and on the other hand the implementation of labour standards as they provide answers to issues that continue to arise." ■

Organizer fairtrade

Co-Organizer for agro AgroTech DLG International

fairtrade Messe • Ms Clarissa Nusch • Tel.: +49-6221-4565-21 • c.nusch@fairtrade-messe.de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