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LOOK EAST

Investing in East African oil and gas

China and Africa doing business in the oil and gas industry

Event reports: Africa Oil Week, ADIPEC and Tanzania Oil & Gas Expo

LNG opportunities for Lagos State

EPC, decommissioning, recruitment, pipelines, satellite communication and catering

Emmanuel Onyekwena, managing director, Tolmann Allied Services (p34)

East African opportunities on p13.
Image Credit: Adobe Stock , Anadarko & Tolmann Allied Services

EDITOR'S NOTE

As the oil and gas industry shows signs of recovery, it has been a busy 2018 for East African markets. Mozambique and Tanzania are showing great promise for gas, the port of Mombasa in Kenya is a gateway for Middle Eastern hydrocarbons as well as trade within Africa, and operators in Uganda, Sudan and South Sudan are keen to be part of a revival. For more on this exciting region, turn to our cover story on page 13.

Chinese investment continues apace across Africa, particularly with the country's Belt and Road Initiative – and it is no surprise that this has knock-on effects for the continent's oil and gas industry. Turn to page 18 to find out what ever-increasing Chinese investment might mean for Africa and what challenges and opportunities are arising as a result.

As 2018 draws to a close, I wish the readers and partners of *Oil Review Africa* a peaceful holiday season – I look forward to working with you in 2019. Thank you for your support.

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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

WAIPEC to put the spotlight on innovation and collaboration

THE THIRD EDITION of the West African Petroleum Exhibition and Conference (WAIPEC) will be held at the Eko Convention Centre from 23-24 January 2019.

Themed "Innovention – Sustaining Sub Saharan Oil and Gas Production Through Innovation and Collaboration", the conference is organised in conjunction with PETAN, the Petroleum Technology Association of Nigeria, a peak body for Nigerian indigenous technical oilfield service companies along the entire oil industry value chain.

WAIPEC 2018 attracted more than 6,000 visitors, more than 500 delegates, and more than 300 participating companies – and more than 80 industry experts addressed the conference.

As well as an impressive turnout, WAIPEC 2018 featured in excess of 25 technical and strategic sessions and representatives from the regional and international oil and gas community, as well as public and private sector stakeholders.

For the 2019 edition, organisers hope to build on the success of its previous two editions, with a steering committee of leading stakeholders from across the industry.

WAIPEC sessions aim to discuss opportunities along the entire value chain.

Image Credit: Total/Flickr

Through topical debates and speaker sessions, WAIPEC 2019 will offer direct access to the primary stakeholders and major players in Nigerian and West African supply and value chains.

Across two days, speakers and delegates will have the opportunity to participate within business, technical and special focus sessions, providing critical insights into Nigeria and West Africa's hydrocarbon businesses. This, coupled with excellent networking sessions, will allow participants to engage with peers from local, regional and international businesses to develop business opportunities, in a relaxed environment.

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OPEC and non-OPEC members agree to oil production adjustment at Vienna meeting

THE FIFTH OPEC and non-OPEC Ministerial meeting, which was held in Vienna on 7 December 2018, came to an agreement to adjust overall production by 1.2 mb/d, effective as of January 2019 for an initial period of six months.

According to a statement released by OPEC after the meeting, the contributions from OPEC and the voluntary contributions from non-OPEC participating countries of the Declaration of Cooperation will correspond to 0.8 mb/d (2.5 per cent), and 0.4 mb/d (2.0 per cent), respectively.

Representatives reaffirmed their commitment to the Declaration of Cooperation for maintaining a stable market and the overall improvement in market conditions and a return of confidence and investment to the oil industry was noted.

Image Credit: OPEC

Leaders gathered in Vienna to make agreements on oil production for 2019.

"It's been an encouraging day for OPEC, with oil prices reacting positively to the outcomes of the conference. OPEC's contemplated goal was to mitigate a 1.3 mln bpd oversupply, which has been achieved by the agreement of a 0.8 mln bpd OPEC and 0.4 mln for non-OPEC allied nations, including Russia. Delegates also came to a consensus on the contentious issue of Iran – namely exemption of the country in the oil cuts, due to the current US sanctions," said Florian Thaler, oil strategist, OilX.

Vantage Capital provides funds to Pétro Ivoire

VANTAGE CAPITAL, AFRICA'S mezzanine fund manager, has announced that it has provided US$22mn of mezzanine funding to Pétro Ivoire, a distributor of oil and gas products in Côte d'Ivoire.

Vantage's funding has enabled the founding family, Kadio-Morokro, to regain a controlling equity stake in the company by facilitating the buy-back of equity from two exiting private equity investors, Amethis and the West Africa Emerging Markets Growth Fund. The exit of the private equity investors has made room for a French-based gas trading company, Geogas Enterprise SAS, to take a stake in the business alongside the founding family.

Image Credit: Vantage Capital

Petro Ivoire stations are a common sight across Côte d'Ivoire.

This transaction represents Vantage Capital's 27th mezzanine transaction across three generations of mezzanine funds, with its portfolio of mezzanine investments spread across nine countries in Africa. Vantage has invested in 10 transactions for a total of US$138mn across Côte d'Ivoire, Ghana, Nigeria, Uganda, Kenya, Mauritius, Namibia and Botswana. Pétro Ivoire is Vantage's first investment in Francophone Africa and the mezzanine fund manager is currently pursuing several opportunities in Morocco, hoping to announce its first deal in that country in 2019.

NNPC aims to make fuel available to Nigerians

THE NIGERIAN NATIONAL Assembly has commended the Nigerian National Petroleum Corporation (NNPC) on strategies deployed to make petroleum products available to Nigerians throughout December and beyond. Chairman of the House of Representatives' Committee on Petroleum (Downstream), Joseph Akinlaja, gave the commendation during an oversight visit to NNPC Towers.

The lawmaker expressed confidence that the measures put in place by the corporation to avert fuel supply shortage would be successful this year, going by the painstaking efforts that went into the planning and execution of the zero-fuel scarcity strategy.

On the threat by major, independent petroleum products marketers to ground the sector due to unpaid subsidy arrears, the committee chairman appealed to the Federal Government to do everything within its powers to pay up the arrears to forestall any crisis. Speaking further on the need to support NNPC to sustain petroleum products supply, Akinlaja said that the corporation was overburdened and "because of that, when it runs into hiccups, somebody will say their operations are opaque. The committee expressed satisfaction with improvements to the integrity of the pipelines and urged NNPC to expedite further action, especially those linking the Ore Depot from Benin City and to the Ibadan Depot.

Group managing director of NNPC, Dr Maikanti Baru reassured Nigerians of the corporation's preparedness to ensure zero-scarcity of petroleum products into 2019.


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Peace deal may boost Sudan-South Sudan investment

A PEACE AGREEMENT signed between Sudan and South Sudan last month to cooperate on capacity building in the oil and gas industry has spurred investor interest in South Sudan.

It was reflected by the participation of nearly 400 delegates in the second edition of the three-day 'South Sudan Oil and Power' 2018 conference held 20-22 November 2018.

The Sudan government was instrumental in supporting South Sudan in the resumption of oil production at Toma South, which had been offline for five years. Oil output levels have risen to 135,000 bpd with an aim to achieve oil production of 350,000 bpd. The promise of higher oil production and more drilling activity has drawn the interest of many investors including state-owned oil companies Petronas, CNPC and ONGC Videsh.

Africa Oil and Power CEO Guillaume Doane said, “South Sudan is on a run, there is no denying that. You can feel the change in the air and that is thanks to the peace agreement and the enabling investment climate that the government has implemented.”

“Even without new exploration, the country has the capacity to become the third largest oil producer in sub-Saharan Africa,” he added.

Aquaterra Energy lands major contract with NNPC

AQUATERRA ENERGY HAS been awarded a contract by FIRST E&P to design, engineer and install two non-identical Sea Swift conductor-supported offshore platforms in the Niger Delta Basin.

The platforms are destined for the Anyala and Madu fields within Oil Mining Leases 83 and 85 offshore Nigeria, where Nigerian National Petroleum Corporation (NNPC) is a joint venture partner. The Anyala and Madu field project scope will develop approximately 185 million barrels of oil and 637 bcf of gas reserves. Onsite fabrication support will be performed in Nigeria.

Once complete, the platforms will be installed in water depths of 35m to 55m with first oil expected in late 2019.

The project will be off the coast of Nigeria.

Dangote refinery praised for CSR work

TRADITIONAL RULERS AND community leaders of the Ibeju-Lekki Free Trade Zone area in Lagos have appreciated the Dangote Oil Refining Company (DORC) for providing infrastructure to their communities, as part of the company's Corporate Social Responsibility (CSR).

The monarchs at a stakeholder meeting in Lagos commended Dangote Industries Limited for partnering them on various CSR initiatives targeted toward the development of Lekki Free Trade Zone communities.

The community leaders said that Dangote Industries had so far demonstrated its resolve to address the concerns of the people by complementing efforts of the state government to develop the host communities in the Lekki Free Trade Zone, where the Dangote Refinery, Fertiliser and Jetty are located.

The Imobido Community head, Chief Jegede Lateef commended the company for siting its plants in the community saying his community was extremely lucky because the projects could have been sited elsewhere.

"We appreciate Dangote Industries for its decision to establish a refinery and petrochemical plants in our communities and we believe that the company's investment will contribute to the development of the community," the community leaders said in a statement.

Chief Lateef emphasised the need for the company to ensure that investments translate to infrastructural development and employment opportunities for host communities.

Mubadala Petroleum acquires 20 per cent stake in Egypt's Nour Concession

MUBADALA PETROLEUM HAS completed the acquisition from Italy's Eni of a 20 per cent participating interest in the Nour North Sinai Offshore Area concession, an offshore exploration block in Egypt.

In the concession, which is in participation with Egyptian Natural Gas Holding Company (EGAS), Eni as operator through its subsidiary, IEOC, now holds a 40 per cent interest. The other partners in the concession are BP with 25 per cent interest and Tharwa Petroleum Company with 15 per cent interest.

The Nour exploration block is located in the prolific East Nile Delta Basin of the Mediterranean Sea, approximately 50 km offshore in the Eastern Mediterranean, with a water depth ranging from 50 to 400m, and covering a total area of 739 km².


Image Credit: Hossam el-Hammalay/Flickr

The waters off the coast of Sinai are looking very promising.

Eni and Tharwa Petroleum Company are carrying out the drilling of the exploration well as foreseen in the first exploration period of the Nour concession.

Dr Al Katheeri, CEO of Mubadala Petroleum, said, "This acquisition of a 20 per cent interest in the Nour concession is another step in Mubadala Petroleum's growth strategy, marking our second investment in Egypt this year. At the same time, we further strengthen our partnership with Eni, the operator of both the Nour and the Shorouk concessions."

Libya could make a comeback on the world oil stage – with improvements for investors

A REPORT HAS concluded that Libya can play an increasingly important role in stabilising oil prices although an improved climate for investors is needed. Arab Petroleum Investments Corporation's (APICORP) research report focused on the increasingly important role that Libya can play in stabilising the oil price as its production starts to ramp up towards levels not seen since the revolution in 2011.

A near-doubling of output between July and October, to 1.28mb/d, came just as Libya's fellow OPEC members sought to lift production to offset losses elsewhere and balance global supply. This compares with output of almost 1.6mb/d on the eve of the revolution in 2011.

Since then, production has oscillated, dropping as low as 200kb/d and topping out at around 1.4mb/d. This could rise if infrastructure is repaired.

Mustafa Ansari, senior economist at APICORP, said: "Libyan oil is now well placed to play a role in stabilising global balances. Its proximity to key markets and huge upstream potential mean a geologically prolific oil province awaits investors. However, this requires political stability, and the outlook is favourable, with recent discussions between groups in the country offering the chance for a lasting settlement in the country."


El-Sharara Oilfield, operated by Repsol.

Image Credit: Javier Blas/Wikimedia Commons

African Petroleum pulls out of Sierra Leone

AFRICAN PETROLEUM WILL relinquish its interests in its two operated licences in Sierra Leone. The relinquishment of the licences is a result of the decision to not commit to an ultra-deep water drilling programme and follows discussions with the petroleum directorate of Sierra Leone, during which the parties failed to agree on licence extensions.

African Petroleum CEO Jens Pace said, "The relinquishment of the blocks is a result of the company's election to not commit to drilling ultra-deep water well at this time, one that would set a world record water depth. Instead, we must focus our attention on areas where we see the best chances of value creation for our shareholders ... Despite our efforts to progress our technical work programme and secure partners for the Sierra Leone blocks, it has become apparent that the industry appetite does not currently exist for ultra-deep water exploration in this part of the African margin."

Serious South African interest in Mozambique's Cabo Delgado province

THE PROVINCIAL PERMANENT Secretary of Mozambique's Cabo Delgado Province, Mr Antonio Domingos Mapure has extended an invitation to South African businesspeople to invest in the province. Mapure was delivering an address at a trade and investment seminar for the two countries.

South African high commissioner to Mozambique, Mandisi Mpahlwa with Mr Mapure.

Mr Mapure thanked the businesses for joining the province in writing the new story of oil and gas and showed confidence in the growth of the economy post the trade and investment mission. He further said the mission came at an important time when the province was getting ready to start the 2018-2027 Development Programme which includes investment of more than US$50 million for extracting gas in the Rovuma basin.

New offshore oil discovery in Angola estimated at up to 200mn barrels

ENI HAS ANNOUNCED a new oil discovery in the Afoxé exploration prospect located in Block 15/06, offshore Angola. The discovery is estimated to contain between 170 and 200 million barrels of light oil.

The Afoxé-1 NFW well, which has led to the new oil discovery, is located in the south-east area of Block 15/06, approximately 120 km off the coast, 50km south-west from the Olombendo FPSO and 20km west of the Kalimba-1 discovery. The well was drilled in a water depth of 780 metres and reached a total depth of 1,723 metres.

Afoxé-1 NFW proved a 20 metres net oil pay of high quality oil (37° API) contained in Upper Miocene sandstones with excellent petrophysical properties. The well has not been tested but an intensive data collection has been carried out that indicates a production capacity in excess of 5,000 barrels of oil per day. The nearby discoveries of Kalimba and Afoxé are now accounting for a potential of 400-500 mboe of high quality oil in place and represent a new cluster that can be exploited jointly in a new development concept.

ABS working to support the African oil industry, with a strong focus on Nigerian clients

AS A GLOBAL leader in offshore classification and the number one classification provider in Nigeria, ABS plays an important role towards assisting its clients in evaluating compliance and improving efficiency and environmental sustainability in offshore operations.

In addition to traditional class and certification services, ABS offers Nigerian clients independent, third-party verification for integrated software quality management, subsea systems and a broad spectrum of associated technologies that support long-term energy sustainability and advance its mission to promote the security of life, property and the natural environment.

ABS offers clients in Nigeria the full range of its data, digitalisation and cyber security services. The company can also help owners reactivate offshore units from lay-up into active service.

As offshore units have become more complex in design and construction, a robust inspection and maintenance strategy is important to keep the platform in operation and compliant with increasing standards for safety and environmental protection. ABS offers Electronic Survey Planning, powered by operational data so many problems can be prevented or fixed with minimal interruption. Data insights facilitate less intrusive surveys and risk-based inspections.


Image Credit: ©NickEyes/Shutterstock

ABS is working hard for clients operating offshore in Nigeria.

The company has extensive experience guiding owners and operators in the use of alternative energy sources to power vessels while still complying with environmental requirements and meeting operational demands.

"ABS is the leading classification society operating in Nigeria and provides ongoing classification to eight FPSO's operating offshore Nigeria. We also provide classification to numerous drilling units and OSV providers," said Richard Taylor, ABS area manager.

"We are seeing a growth in the number of indigenous companies entering the maritime services sector, which is good news for local employment and the local economy."

EAST AFRICA: GROWING IN IMPORTANCE WITH HYDROCARBONS DEVELOPMENT

Multiple oil and gas markets across East Africa are looking promising and governments are keen to attract investment. Reporting by Georgia Lewis, Nonalynka Nongrum and Samantha Payne.

Image Credit: Lars Plougmann/Flickr

East African aviation sector growth has led to increased jet fuel consumption, an opportunity for the oil and gas industry.

THE SCOPE, SCALE and spread of current and future oil and gas infrastructure development projects in East Africa is positioning the region as a hotbed of oil and gas exploration, investment and infrastructure build. The knock-on effects of this growth will lead to a regionally integrated ecosystem for oil production, natural gas supply and distribution, which will increase efficiency and security of supply. It is expected that the cost of refined oil and gas products to consumers will decrease in the long term as a result of the development of hydrocarbons in this region.

Market overview

According to PwC's Africa Oil & Gas Review, which was launched at Africa Oil Week in Cape Town last month, hydrocarbons are expected to continue to play a major role in the energy mix that will satisfy Africa's growing energy needs. Major gas resources on the continent including Mozambique and Tanzania in the east, as well as Nigeria, Angola, Senegal and Mauritania, could boost the position of gas as an energy source for Africans. In the low-carbon/mitigation of climate change context, gas is a transition fuel before a wider switch to renewables, a development which is likely to take longer in Africa than on other continents.

For investment opportunities, East Africa is a strong performer according to the 2018 Africa Risk-Reward Index from Control Risks and Oxford Economics, with Ethiopia, Tanzania and Uganda all coming out strongly. Ethiopia and Tanzania are at the top of the list of rewarding economies for the second time with Kenya coming in fourth after Côte d'Ivoire. Uganda did well in the review by making strong gains on the risk and reward sides of its economy.

The foreign exchange burden of importing and distributing refined oil and gas products will, "address regional balance of payments challenges while liberating much needed foreign exchange for more strategic human development," said Maina Kigundu, East Africa head of oil and gas at Standard Bank.

With Tanzania currently returning annual GDP growth rates of anywhere between five and 10 per cent, Uganda maintaining annual growth at around seven per cent, and Kenya and Ethiopia achieving growth rates in excess of five per cent, East Africa's consumption of gasoline, diesel and jet fuel is rapidly increasing.

East Africa has been an importer of refined product, largely from the Middle East. The bulk of this product has entered the region via Mombasa in Kenya and also through Dar es Salaam in Tanzania. From these ports it has made its way, via pipeline and fuel trucks, across Kenya and Tanzania into Uganda, the Democratic Republic of Congo, Rwanda, Burundi, Ethiopia and even South Sudan.

The region, combined, spends around US$5bn a year importing refined oil and gas products. Kenya accounts for 50 per cent of this spend. Given the foreign exchange impact of this outlay on most East African countries balance of payments, "the region has, traditionally, focused on import efficiency as a means of managing the import bill and costs for consumers," added Mr Kigundu.

The increasing slice of foreign exchange required to meet the region's growing need for refined product, "is driving home the imperative for East African governments to build an integrated oil and gas infrastructure capable of reducing the region's refined product import dependence – as well as managing and distributing these imports more efficiently," he noted.

Mr Kigundu observed that this realisation is coming at a time when, "local economic conditions, new oil finds and increasing investor appetite are converging to realise the vision of a more sustainable and efficient East African oil and gas production, supply and distribution ecosystem."

If development is not stalled, the Hoima region could be promising for the Uganda oil sector.

Emerging and re-emerging markets

South Sudan has historically been the region's only significant exporter of crude oil. New oil finds in Uganda and Kenya are set to transform many of East-Africa's previously refined-product importing countries into regional and global exporters of crude and ultimately refined product as well.

It is estimated, for example, that new oil finds around Hoima in northwest Uganda present a 1.4 billion barrels commercially viable opportunity over the next twenty-five years.

Uganda's first production is expected in 2021, hitting peak production at around 200,000 bpd by 2026. If this goal is met, this will make Uganda the fourth largest oil producer in sub-Saharan Africa, Mr Kigundu added.

Similarly, new finds in Kenya indicate the possibility for a billion barrels over the next two decades. The first phase of production is currently estimated to deliver 60,000 bpd by 2026. This will position Kenya as the ninth largest producer in sub-Saharan Africa.

Mr Kigundu commented, "This increase in local East African oil production combined with rapid economic growth is transforming the oil and gas infrastructure mix while also driving investment and development, integration and growth in East Africa's oil and gas sector."

Kenya, Ethiopia, Tanzania and Uganda, for example, are all looking to develop the refining and regional distribution and export infrastructure required to process and market these finds locally, regionally and globally. At the same time, they are also looking to improve the efficiency of imports. Refinery development will need to be a priority across Africa if the hydrocarbons resources are to be properly developed and strong value chains established. The PwC report cites population growth and the demand for freight transport as placing increased pressure on the demand for liquid fuels, for example. This will require further development of refineries. In the east, Uganda is planning a refinery, which is expected to be operational by 2022.

Speaking at a panel discussion at Africa Oil Week in Cape Town last month, the speakers were asked about Kenya and plans for the shipping of the first mega oil from the borders of Kenya. Andrew Kamau, principal secretary of Kenya's State Department of Petroleum described Kenya as a "frontier country".

"The oil that we have discovered is around 800km plus from the port," Mr Kamau said. "One of things that we had to think about is how to get our oil to the port. We have the pipeline system and alongside our partners, we decided to carry out a phased approach and are building infrastructure in phase one. For a country that has never done this before with no infrastructure – it's been pretty quick."

In addition to deepening its engagement with and support of East Africa's sovereign efforts to develop the sector, Standard Bank is also working with leading local and global oil companies. All of these companies are currently investing in the exploration, production, importation, exportation, storage, distribution and sale of crude oil, gas and refined products, "either buying stakes in existing facilities or working with regional governments to build new facilities from scratch,.

Standard Bank's presence across the region will assist East Africa to develop an integrated oil and gas infrastructure ecosystem capable of increasing the efficiency of importation and distribution. In addition to the savings that this will afford consumers, the bank is also well placed to effectively commercialise new crude oil discoveries in Uganda and Kenya.

Collectively these are expected to attract US$20bn in new investment over the next five years. "This will not only sustain the region's high growth rates but will also release much needed foreign exchange for more strategic human development," explained Kigundu.

In Sudan, the country's minister of petroleum and gas, HE Azhari Abdalla Abedelgader, announced that his country was ready to experience a "second boom" after years of war and economic hardship.

Sudan's oil production decreased to 75,000bpd from 500,000bpd after South Sudan gained independence in 2011, taking with it 75 per cent of the country's oil resources.

But with the imminent lifting of sanctions, both governments have now agreed to put on stream oil fields which have been left idle since the civil war ravaged the country over the past five years.

Abdelgader said, "We put the first field back on stream in August, with 100 per cent resources from the two countries. Our future is a lot brighter now and plans are in place. The embargo is about to be lifted from Sudan. Oil fields from South Sudan have started to flow to the systems and facilities of Sudan and oil prices have started to pick up. All reasons are in place for Sudan to experience a second boom, and this is an open invitation to all who are interested," he added.

The importance of the Rovuma Basin

It has been 10 years since gas was discovered in the Rovuma Basin in Mozambique, but no gas has started to flow despite the country being on the verge of becoming a major gas player worldwide. This was the topic of a panel discussion at Africa Oil Week. Ebbie Haan, director of Perpetuum Advisory, asked the panel about the issue of the timeline and LNG development in the Rovuma Basin.

Luca Bertelli, chief exploration officer, Eni, said, "We have to provide a complete picture to understand the issue of

Image Credit: Eni

Luca Bertelli, ENI's chief exploration officer, is cautiously optimistic about development in the Rovuma Basin.

the timeline of the development of these world-class gas reserves."

Mr Bertelli went on to make four points, the first being about the size of the discoveries.

"The first point is the size of the discoveries. The development of the Rovuma fields is among the biggest gas developments of all time – the first in East Africa, and the first in Mozambique," he said " We are talking about super giant gas reserves in Rovuma, and also large discoveries in Tanzania. The scale of investment for this type of development is huge. The second point is the location. The discoveries are in a frontier basin in a very remote area, far away from cities and regional markets."

His third point was in regard to the importance of establishing strong regulatory framework in the coming year for the development of the gas reserves, and his final point was on the commercialisation of the gas.

"Of course, we need to secure the market, at least a big share of it, before sanctioning the projects. Also, the timeline from the discovery – we had three to four years in the industry where the gas price market was at risk but notwithstanding that, we moved forward and sanctioned the first floating LNG project in Area Four," Mr Bertelli told delegates.

Omar Mithá, CEO of ENH Mozambique said that pre-FID investment had already started, "which already provides confidence for the buyers."

"In respect to Area Four, we have succeeded to attract a very good player with a very good track record of financial trends – and that is ExxonMobil, a large-scale but low cost producer," Mr Mithá said.

He went on to say that Mozambique is on the cusp of having two FIDs simultaneously in a remote area.

"The challenge is the execution of these projects, because once we have FID and funding in place, building two large trains at the same place with no infrastructure is going to be a challenge. But I would say that we are on the right track. In addition to that there have been three other projects that have been authorised to have domestic gas. These projects are export-oriented to the Asian markets, premium markets that we can monetise. In the medium term, we are looking at domestic and regional markets. The East Coast of Africa, in Mozambique, we are supposed to have 30 million tonnes per annum – that is an addition that will make a difference worldwide," Mr Mithá told the conference.

Conclusions

Rob Leonard, VP and general manager, Worley Parsons, told delegates at Africa Oil Week that he is "extremely optimistic about Kenya and Uganda."

"I don't have any slightest doubt that we are going to see oil production in a short time scale," he said.

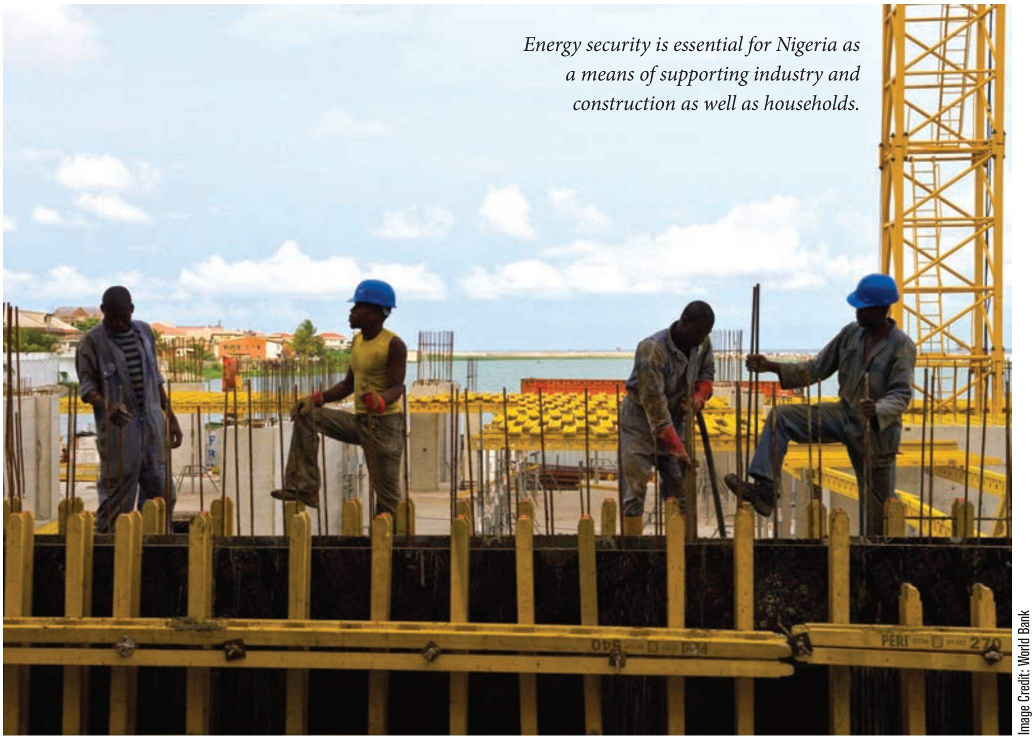
Worley Parsons has identified East Africa as a place to "plant our strategy and assist governments and oil companies to support them to build these developments."

Mr Leonard said the East African markets could learn from examples such as Tullow's work in Ghana where the path from discovery to first production was one of the shortest ever. He advised governments in the region to be "very determined and very proactive" and for contractors to play a vital role.

"In this type of market place we too have to be innovative, we have gone to lengths to develop proactive strategies, identifying how we can save costs for our clients and do things a different way, leveraging technology and modern practices," he said. "So we played our part in getting the cost of development right down then saw finance flow back into the region – that sits at the core of everything, when the finance starts coming back into the region you know you have ticked all the boxes."

LAGOS STATE IN TALKS TO ACQUIRE FSRU WITH GOLAR LNG

Wale Oluwo, Lagos State commissioner for energy and mineral resources, talks about negotiations to acquire an FSRU to meet the city's power supply needs at the DLO Africa Power Roundtable event in London. Samantha Payne reports.



Energy security is essential for Nigeria as a means of supporting industry and construction as well as households.

Image Credit: World Bank

THE LAGOS STATE Government says it is in discussions with Golar about providing a floating storage and regasification unit (FSRU) to deliver off-grid energy security for the region. A FSRU in the city's free trade zone could meet the vision of the region's US$3bn gas-to-power programme.

"A floating storage special unit has the capacity to regasify 750 million standard cubic feet of gas per day - that's enough to power 3,000MW," Wale Oluwo, Lagos State commissioner for energy and mineral resources, said at the DLO Africa Power Roundtable event, held in London.

The government was negotiating with Golar to acquire one of its vessels; the Tundra or the Golar Spirit.

"We have got very far with our negotiations with Golar LNG Ltd – a major supplier of energy – which particularly deploys FSRUs in Africa. We wanted the best supplier and in the case of Golar, they gave us the option to either choose from the Golar Tundra which was in Ghana earlier this year or the Golar Spirit which has finished its assignments in Brazil."

The Golar Tundra is able to produce 750 million cubic ft/day of gas and the Golar Spirit is able to turn out 250 million cu ft/d.

Oluwo also said the state was finalising talks with Nigeria LNG (NLNG) to buy liquefied natural gas from its facility in Finima, Bonny Island.

"We have gone into extensive negotiations with Nigeria LNG," he said.

> **"We are working out the economics so they do not lose money and we do not pay too much."**

The commissioner added he is hoping to capitalise on NLNG's Train 7 expansion project, involving two trains with a total capacity of 8 million tonnes per annum expected to start in 2024, whereby a part of that LNG could be used in Lagos.

"The attraction for me is that I can freeze the price for two to three years and NLNG are very receptive to it. We are working out the economics so that they do not lose money and we do not also pay too much."

It is hoped the region's US$3bn gas-to-power project, known as the Embedded Power Supply Programme, which aims to provide 3,000MW of electricity, will kick start the deregulation of the Nigerian Power Sector from Lagos. The state receives about 25 per cent of the power generated from the national grid.

The commissioner further explained the FSRU's location to the main gas line was important because in the event of any disruption in the Niger Delta due to issues such as militant attacks, gas could be transported via a new pipeline into the city.

"The intention is that if the FSRU is pumping gas and the gas is coming from the Delta area as it enter Lagos, I have about of 20km of pipeline to construct. This means that anytime that the gas from the southern part shuts down, we can close the pipeline and the FSRU can replace production," adding that anyone who uses gas in Lagos for whatever purpose, power or manufacturing, can have 24/hr gas supply.

The gas-to-power project, also known as the Embedded Power Supply Programme, aims to kick start the deregulation of the Nigerian Power Sector from Lagos. The state currently receives about 25 per cent of the power generated from the national grid.

The programme involves also expanding its energy mix with waste-to-energy power and deploying power plants in strategic locations in the state within three to five years. Up to 1,000MW will be delivered during the first phase within 12 months and the remaining 2,000MW will be delivered in the second and third phase.

Mitigating the risks

Oluwo said the Central Bank of Nigeria had put together mechanisms to mitigate any financial risks, adding "we have the economy to support the programme and the capacity".

The commissioner praised the DLO Roundtable event in London on 30-31 October describing it as "an eye-opener" because it was looking at how to bring power to Africa.

"I know clearly that for economies to develop you need three major commodities in regard to energy, you need power, petroleum products and need gas. You need these three items to power the economy. Unfortunately, the reality of is that these three areas in most countries in Africa haven't been managed in a way to enhance productivity and increase supply."

Lagos is well-served for ports, making it an ideal location for a FSRU project.

Image Credit: scenar308/Flickr

He admitted it was ironic in Nigeria, as the eighth largest exporter of crude oil and major gas producer, that until now it couldn't install gas-to-fire power plants despite the country having 11,000MW of installed power – only 3,500-3,800MW reaches consumers.

Providing some context to the power supply problem, he said that it was related to the mindset and the models implemented after Nigeria and other African countries gained independence. "In my own country we were made to understand that the government provided for all the utilities; telecoms, energy, railway, aviation etc, and there was legislation to prevent competition, so consumers got used to getting services without paying competitive prices for them. As a result, sectors were destroyed and efficiency disappeared and businesses were not coming – this is where we are today."

That's why he stressed it was important to continue along the path of reform such as around changing mindsets and vehicles that make the sector unattractive. In power, he continued, pricing was still an issue.

"For my country, leakages in respect to the completion of the business circle. You put money in it and dont get money to come out. Gas loss in technical and commercial losses, gas loss in power jets, gas loss in all sorts of thefts that makes the sector unattractive so we must continue to improve those leakages and improve competition in the power space and make sure that at every level of the chain, investment opportunities are highlighted in an environment created for you to bring money in. Reforms don't make sense until the private sector in your country can start to put its money into sectors that will create productivity," adding that local investors are important to attract foreign investors to come.

> **"Reforms don't make sense until the private sector can put its money into sectors that will create productivity."**

He stressed the second major issue the conference should address was how to handle foreign exchange challenges as many African currencies were not stable, relative to international currencies. "In many African countries today, they are subsidising it, which at the end of the day is not going to be sustainable and we are going to go full circle and come back from where we started from," he said.

"I'd encourage the conference to continue to look at those difficulties that makes it hard for Africa to attract investment in a quantity that ordinarily we should be attracting. We can do that in relation to the macro variables, particularly exchange rates, inflation rate, interest rate, debt profile and the balance of government issues. It is when we put this together and compare it to the infrastructure investments that you begin to see a moderation of macro variables that can drive business into Africa, the power sector and increase supply."

Lagos is the most populous state with 22 million people and is the commercial hub of the whole of West Africa. It accounts for almost a quarter of Nigeria's US$493bn GDP, which is more than Ghana (US$116bn) and Kenya (US$86bn). It is the only oil and gas producing state outside the Southern Delta.

China has been a serious investor in African energy infrastructure, especially in Angola.

Image Credit: jbdodane/Flickr

WHO WILL BE THE AFRICAN WINNERS FROM CHINESE INVESTMENT?

Chinese investment across multiple African nations continues apace, particularly in the oil and gas industry. *Oil Review Africa* managing editor, Georgia Lewis, examines the implications for African countries and their development.

CHINESE INVESTMENT IN Africa is booming – and the investments include ploughing serious money into infrastructure projects which can support investment and development in oil and gas projects. Data from the China Africa research Initiative at John Hopkins University revealed that China rose to become Africa's biggest trading partner in 2009, overtaking the US. By 2015, Chinese exports to Africa were worth US$103bn, compared to US$27bn from the US.

According to data gathered by the World Resources Institute, between 2014 and 2017, six Chinese banks have been involved in syndicated loans worth US$143bn to the energy and transport sectors of the "Belt and Road Initiative" (BRI) regions of Africa, Asia and Europe. This initiative seeks to create seamless land and sea transport networks joining China with multiple countries, as far east as Jakarta and as far west as Amsterdam. Of this BRI investment, almost 75 per cent of the total volume of this finance went to oil, gas and petrochemical sectors, and with funds for the power generation sector, more than half financed fossil fuel power plants.

Where is the money going?

According to the Chinese Investment Tracker, compiled by the American Enterprise Institute (AEI), 25 per cent of all Chinese investment is concentrated in Nigeria and Angola. Infrastructure remains a major priority with this investment flow, including significant funding for Nigerian railways, such as a line from Lagos to Kano and a coastal line from Lagos to Calabar. The Lagos-Calabar line is a source of optimism for the Nigerian government, with hopes high that it will bolster peacekeeping efforts in the Niger Delta, which would then improve oil investment in the region.

Since 2000, Chinese investment in upstream oil and

> **"Since 2000, Chinese investment in upstream oil and gas in Africa has increased dramatically"**

gas in Africa has increased dramatically. Until 2000, only three Chinese state-owned petroleum companies were present in Africa and only in Sudan. But between 2000 and 2014, companies such as Sinopec and CNOOC made massive investments across the continent. Sinopec is now present in Algeria, Angola, Cameroon, Central African Republic, Chad, Egypt, Gabon, Ghana, Kenya, Libya, Mauritania, Niger, Nigeria, Sudan, South Sudan and Tunisia. CNOOC, meanwhile, has invested in Algeria, Gabon, Nigeria, the Republic of Congo and Uganda.

Angola in particular cannot be ignored as an enormous area of growth for oil-related business with China. Particularly with the end of the dos Santos presidency and the ascension of President Laurenco, oil-backed loans to China continue apace with a significant number of contracts awarded to state-owned Chinese companies and their sub-contractors. A study by Boston University found that Angola has received the most Chinese funding for energy infrastructure since 2000. An Economist Intelligence Unit report found that the Angolan government will seek more loans from China to continue its capital spending programmes for such projects as a US$760.4mn electricity transmission system at Lauchimo Dam, funded by Exim Bank China.

In Niger, China National Petroleum Corp (CNPC) made 95 oil discoveries from 129 exploration wells in its Agadem block - as a result, Niger is now producing around 20,000 bpd, most of which is sold domestically with some sales to to importers in Burkina Faso, Mali and northern Nigeria. CNPC has ambitions of producing up to 100,000 bpd if and when a new pipeline linking Niger to Chad is completed, although this has experienced delays despite an initial MoU signed between the two countries in 2012.


Image Credit: ILO/Flickr

Chinese industry is heavily reliant on energy from a range of sources, including African hydrocarbons.

China has become an energy-hungry country with its ever-growing industrial development and Africa has become an obvious source of energy and therefore investment. The continent provides China with 22 per cent of its oil supply - 1.4mn barrels per day, according to the Council on Foreign Relations. And again, it comes back to infrastructure investment. In Nigeria, for example, the government signed up US$80bn in provisional contracts with Chinese companies to upgrade oil and gas infrastructure.

LNG could be another growth area where Africa can benefit from Chinese money. Chinese demand for LNG is on the rise and Mozambique is emerging as a new world player in this sector with FID reached on Eni's Coral FLNG facility in 2019, and FID expected in the first half of 2019 on the Anadarko-Mozambique LNG onshore facility.

"China has become an energy-hungry country with growing industrial development and Africa has become an obvious source of energy."

Who will benefit?

But is this massive raft of investment benefiting Africa? McKinsey conducted a study last year in which more than 1,000 Chinese-owned firms and companies across the continent were interviewed. Of these companies, 89 per cent of employees were African, meaning nearly 300,000 new jobs have been created for local workers. The study found that two-thirds of Chinese employers were providing some sort of skills training and half offered apprenticeships.

McKinsey concluded that "on balance", Chinese involvement in African industry is "strongly positive for Africa's economies, governments and workers" but did identify three areas for "significant improvement". By value, McKinsey's researchers found that only 47 per cent of Chinese firms' sourcing was from local African firms, only 44 per cent of managers at Chinese-owned companies were African (although some Chinese firms have local managerial employment at more than 80 per cent); and for some Chinese firms, there is room for improvement in terms of labour and environmental conditions.

In order to meet local content requirements in different jurisdictions across Africa, there could be increased pressure on Chinese firms to use more African suppliers, which could represent a significant opportunity for many African service providers. Increasing development of African talent in the oil and gas industry with skills training and apprenticeships should also provide significant benefits for African countries and their economies.

ESTABLISHED AND EMERGING MARKETS IN FOCUS AT AFRICA OIL WEEK

Africa will be a major gas player in the world markets, driven by resources in East and West Africa, according to South Africa energy minister Jeff Radebe, and Fatih Birol, executive director of the International Energy Agency, at the 25th Africa Oil Week. Samantha Payne reports.

"THE POTENTIAL OF oil and gas resources in a number of countries is no longer in doubt," Jeff Radebe, South Africa's minister of energy, told delegates at the 25th Africa Oil Week. "The challenge to us as policy makers is how we convert this potential to a tangible benefit to all inhabitants of the African continent."

According to the International Energy Agency, (IEA), African gas production will rise by 150 per cent over the coming decades with Nigeria, Mozambique, Egypt, Algeria and Tanzania becoming significant players. By 2020, there will be 50 LNG importers in Africa, up from five in 2000, with a number of exporters set to grow.

The South African government has updated its Integrated Resource Plan, (IRP), to include a gas-to-power programme with LNG.

Radebe said, "It will be the main vehicle to stimulate this ambition of a gas market in our country". South Africa signed a gas trade agreement with Mozambique in 2004 which is convinced that the recent gas discoveries in the Rovuma basin – known as the biggest gas development of all time – will "benefit the economies of this region and further bolster economic integration".

However, oil will still play a role in the continent's energy mix despite developments in technologies making renewable sources cheaper.


Image Credit: ITE

Fatih Birol, executive director, IEA, and Jeff Radebe, South Africa's minister of energy, at Africa Oil Week, held in Cape Town in November 2018.

Fatih Birol, executive director of the IEA said global oil demand will be driven by many sectors that include shipping, passenger vehicles, aviation and road freight. But it will be the petrochemical industry that will account for more than a third of the increase in oil demand to 2030. But he said the IEA was worried that not enough upstream investments were happening on time, which could affect oil markets in the 2020s.

"When it comes to Africa, our numbers show between 2014 and today, an upstream investment decline of more than 50 per cent." He added it was disappointing that Africa uses less than 10 per cent of the economic hydrocarbon potential when there was huge offshore and onshore potential, notably the DRC, Ethiopia and South Africa.

Birol mentioned access to energy was not just an energy issue but it had to be fixed as a basic human right.

"It was a problem for China, they fixed it," he said. "It was a problem for India, they fixed it – it is still a problem for sub-Saharan Africa. By 2030, there will be 600 million Africans with no access to electricity. This is something we need to change." He praised South Africa for giving access to energy to 90 per cent of its households.

In other developments at the conference, the IEA director and the South African energy minister signed an agreement allowing South Africa to join the IEA as the eighth association country, following Brazil, China, India, Indonesia, Morocco, Singapore and Thailand,

In Central Africa, Congo launched its phase II licensing round for 13 new open blocks, situated in the coastal and culvette basins. The coastal basin produces 350,000 bpd and is the third largest in sub-Saharan Africa. Companies have until 30 June 2019 to submit their offers in Brazzaville. The results of the phase II licensing round will be awarded in September 2019.

Teresa Goma, director general, hydrocarbons told delegates after the phase 1 licensing round that Marine 21 had been awarded to Kosmos, Marine 27 to Perenco and Total won Marine 20. In 31 December 2017, oil reserves stood at 496,847,000 bbl and 2,613,793,000 bbl and gas reserves 200bn m^3. Congo became an OPEC member in June 2018.

Pascal Houangni Ambouroue, oil and gas minister of Gabon, announced the government's intention to slash corporate tax to zero per cent, as well as reducing royalty rates to five per cent for oil, and two per cent for gas, in a bid to attract new investors after opening the 12th offshore licensing round. Ambouroue said, "We have changed the hydrocarbon code to attract new investors. It is more flexible and there is less tax in general."

He added that Gabon's new code would follow best practices and that protected areas would be exempt from exploration activities.

OIL AND GAS TO ENABLE GLOBAL ECONOMIC GROWTH

Dr Sultan Ahmed Al Jaber told delegates at ADIPEC about the important role oil and gas will continue to play in the economic development of countries across the globe as we enter the fourth Industrial Age. Deblina Roy reports.

THE GLOBAL OIL and gas will be a critical enabler of economic growth in the fourth Industrial Age, according to Dr Sultan Ahmed Al Jaber, the UAE minister of state and group CEO of Abu Dhabi National Oil Company (ADNOC).

Delivering the opening address at the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), Dr Al Jaber said that the world is on the verge of an era of unprecedented prosperity. This will be driven, he said, by rapid advances in technology and a global middle class, which will grow to five billion people by 2030, creating greater demand for energy and products from oil and gas.

Dr Sultan Ahmed Al Jaber addressing delegates at ADIPEC in Abu Dhabi last month.

Image Credit: ADNOC

"We are at the cusp of a new age of opportunity for our industry, an era in which digital innovation is delivering unprecedented levels of progress," noted Dr Al Jaber to the audience of government ministers, industry CEOs, policymakers and decision makers.

"This era, known as the fourth Industrial Age, is creating a paradigm shift in global growth and driving demand for our products. Our industry must step up to enable this massive step-change in global development," he further added.

ADNOC recognises that to fulfil the mission of oil and gas 4.0, it must leverage all its resources, its partnerships and, in particular, the latest technologies, if it is to continue to thrive and deliver on the ambitious strategic objectives of its 2030 smart growth strategy.

"As we set out to meet these ambitious goals, we will access our undeveloped reservoirs, tap into our gas caps and further capitalise on our sour gas. Today, we are able to make this happen by thinking outside the box, leveraging technology and reframing our business model. This has finally unlocked the commercial formula that will enable the UAE to attain self-sufficiency and transition to becoming a potential net exporter of natural gas."

"For the first time, we will jointly develop our unconventional fields in a concession partnership with Total. In addition, our strategy will ensure we remain a reliable supplier of LNG well into the future," he said.

ADNOC, he said, is applying artificial intelligence and the science of predictive analytics to significantly reduce maintenance costs and building out its state-of-the-art Panorama Digital Command Centre to mine for, monitor and measure terabytes of information across its operations. However, ADNOC is only scratching the surface of how technology can transform its potential, he told the conference.

Dr Al Jaber emphasised the importance of ADNOC's downstream expansion: "This expansion capitalises on our high-grade feedstock, proximity to growth markets and best-in-class logistics to create an integrated plug and play ecosystem, an ecosystem where I invite partners to invest and grow alongside ADNOC as we continue on our journey to diversify the UAE's economy, enable in-country value and support GDP growth."

Following Dr Al Jaber's speech, a special ministerial panel discussion took place, 'Reshaping Markets: Continuing the Global Energy Discussion,' with the participation of H.E. Suhail Al Mazrouie, minister of energy, UAE; Khalid Al Falih, minister of energy, industry and mineral resources, Saudi Arabia and Mohammad Barkindo, secretary general of the Organisation of Petroleum Exporting Countries (OPEC).

TANZANIA STRIVES TO BUILD SOLID FOUNDATIONS FOR OIL AND GAS INDUSTRY

Major suppliers to the Tanzanian oil and gas industry converged on Dar es Salaam in November 2018 to share knowledge, especially about the latest technological advances, at an important event for Tanzania.

The Tanzanian city of Dar es Salaam played host to this important, technology-focused oil and gas event.

Image Credit: Expogrouo

THE 4TH INTERNATIONAL EXHIBITION Oil and Gas Africa took place in Dar es Salaam, Tanzania from 13-15 of November 2018 at the Aga Khan Diamond Jubilee Hall. The event brought international participation from countries such as China, Germany, India, Turkey etc promoting major companies like Fanatech Engineering & Trading LLC and Atilim Makine, in the industry which are looking for dealers and distributors for their products in Tanzania.

The exhibition was conducted concurrently with The 4th Power and Energy Africa which is a premier event in the region for the East African energy market.

Participants for the event included Trans Africa Projects a South African engineering consulting company which also supplies tower mechanical and electrical testing and renewable energy grid integration infrastructure design and grid compliance; Daejin Battery Co., Ltd. a major manufacturer and supplier of solar storage deep cycle battery; Geneset Powerplants from Finland who are leaders in hybrid renewable energy/biomass energy technology; Ingenious Network FZC bringing high quality protective relays and control panels from the United Arab Emirates; Tongxiang Union Import & Export from China supplying wires and cables for domestic and commercial applications; and Murat Aydinlatma SAN. TIC. A.S. from Turkey, a major producer and supplier of industrial use indoor and outdoor lighting products.

Besides these, other leading manufactures presented under sub categories such as solar power and industrial lighting. Leading manufacturers and suppliers showcased products and equipment specific to this industry. The product categories included Solar Technology and Manufacturing, Project Installations, Solar Panels, Storage/Batteries, Solar Water-heaters. The event is a vital part of a growing technology industry in Tanzania and East Africa as a whole. Participants included Orb Energy Kenya; Topec BV, Netherlands; Hebei Banggu Technology, China; Winner Solar, Alltop Lighting; FS Snat Solar Power; WHC Solar, Rizhao Xintailai Photoelectronic Company; ET Solar New Energy and many more.

> **"The event provides an opportunity for Tanzanian businesses to explore new products and increase earnings"**

The event also recognised the most innovative products with supporting organisations such as the EACCIA, Tanzania Private Sector Foundation, Confederation of Tanzania Industries and Tantrade.

"The Oil and Gas Africa event provided an outstanding opportunity to present the latest technology and innovations in the oil, gas and energy sectors to an international audience. While leading companies are looking for distributors and dealers for long term partnerships, it also provides an opportunity for Tanzanian business community to explore new products and increase their business and earnings," said Joel D'Silva of Expogroup.

Oil refinery projects might be revived in Africa, along with other major EPC projects, as oil prices rise.

Image Credit: David Stockwell/Flickr

HOPES FOR EPC BOOM WITH INCREASED OIL PRICES

The low oil price scenario had a mixed impact along the Engineering, Procurement and Construction (EPC) value chain but, with prices rising to healthier levels again, optimism is on the rise too. Georgia Lewis reports.

THE DECLINE IN the oil price had mixed effects along the EPC value chain – it increased the profit margins downstream in Europe, while in the US, it led to an over-supply of end-product downstream. Overall, the slump was not great news for midstream operators, but upstream, there were opportunities to acquire blocks cheaply and wile away the low price era exploring in readiness for when the prices increased again. With prices around US$60-$65 at the time of publication, is the time right for increased EPC investment?

For Africa, industrial growth, increased urbanisation, population growth and a growing middle class in multiple markets are driving demand for oil and gas and this should, in turn, drive investment in EPC projects. The refinery sectors of North and West Africa are lacking investment but a renewed climate of optimism could push more money towards these projects.

There are plenty of companies across the continent keen to promote their services to the EPC market and, for African-owned-and-operated companies, it represents an opportunity to develop local talent and meet local content requirements.

> **"Increased private sector involvement has opened up opportunities for various sectors that support EPC"**

One such example is AECOM Uganda, which delivers infrastructure projects to a range of industries, including oil and gas. The company's managing director for Uganda, Bridget Ssamula is upbeat about the opportunities available.

"The largest opportunities are in the oil and gas sector, where AECOM's global skills, expertise, and project experience, coupled with our local know-how, and a demonstrated commitment to local content, are key strengths," Ms Ssamula said.

Increased private sector involvement is helping the EPC sector, according to Ms Ssamula: "This has opened up opportunities for various sectors that support the construction and services industries."

Another sign of optimism in the EPC sector from Uganda comes in the form of a joint venture led by the Ugandan government and the Albertine Graben Refinery Consortium (AGRC), and comprised of YAATRA Ventures, Baker Hughes, a GE company (BHGE), LionWorks Group and Saipem. A project framework agreement was signed in April this year to construct a 60,000-barrels-per-day capacity refinery with an estimated project value of US$3bn. The AGRC will have each member undertake a specific role during pre-FID activities and EPC of the refinery.

Ronald Mincy, CEO and managing partner of LionWorks, commented, "This is a unique opportunity to work with Uganda on a transformational project that will provide jobs and skills to the country through improved access to substantially cleaner refined products for Uganda and the East Africa region."

A SUCCESSFUL DECOMMISSIONING CASE STUDY

Decommissioning can provide opportunities for service companies focused on this particular segment of the oil and gas market. A decommissioning project in the Middle East ran smoothly thanks to multiple providers. Georgia Lewis reports.

A **MIDDLE EAST** decommissioning project for Saipem has been successfully executed with the involvement of an offshore solution provider and an engineering, construction and equipment rental company.

Unique Group, the offshore solution provider, worked closely with Innovo, the engineering, construction and equipment rental company on a multi-million dollar decommissioning contract with specific requirements from Saipem.

The project involved a tight delivery schedule and bespoke equipment was required to help reduce operating times and keep costs under control.

Unique Group and Innovo, with their specialist knowledge helped with the design, manufacturing and delivery of the equipment in less than four months. This fast and efficient turnaround considerably helped Saipem to meet the operator's deadline for kick-off operations, with the first step of the campaign completed safely and ahead of schedule.

Internal and external dredging tools, diamond wire cutting tools and internal cutting tools based on abrasive water jet technology, operating at 1,500 bar, were provided for the project along with skilled operators to support the operation.

"The companies had specialist knowledge which helped with a fast turnaround for the decommissioning project."

Unique Group and Innovo joined forces to make this Middle Eastern decommissioning project a success for Saipem.

"We at Unique Group are very pleased to have completed this project within the stipulated timeline, which helped the team considerably," said Rakesh Bangera, division manager at Unique Group. "Our aim is to be a trusted partner for our clients right from the design stage up until the delivery so that all the requirements are duly met."

Stefano Malagodi, managing director of Innovo, said, "This project exemplifies Innovo's and Unique Group's capabilities in the decommissioning arena, where close collaboration, innovative engineering, tight project management and safe operations are paramount."

In the African market, some of the continent's longer-term players, such as Ghana and Nigeria, are starting the decommissioning phase on several projects. This represents an opportunity for service providers with decommissioning experience. Outsourcing is common on African decommissioning projects while local skills are still being developed – indeed, training indigeneous workers in the skills needed for successful decommissioning could be a growth area, especially as companies strive to meet local content requirements which have been passed into legislation in many markets.

Image Credit: Flash Alexander

MEETING MULTIPLE DIGITAL CHALLENGES IN OIL AND GAS RECRUITMENT

Digital disruption and attracting talent with the digital skills required to move oil and gas companies forward are two challenges facing companies. PwC and Petroplan have released reports outlining the issues. By Georgia Lewis.

LIKE ANY OTHER industry, oil and gas operators need to meet the challenges created by an increasingly digitalised world. In terms of recruitment, this has created two major challenges – the use of new technologies along the value chain and how this impacts on staff numbers; and finding talented people with the right skills for the digital era.

The PwC report, Africa's Oil & Gas Review 2018, analyses industry developments over the past 12 months across established and emerging markets. The report discusses the impact of digital disruption on the oil and gas industry, citing examples such as the use of drones for remote inspections, the use of robots to conduct monitoring and safety check tasks; and the use of virtual reality to simulate the drilling of wells. These advances have benefits, such as reducing costs and improving employee safety, despite some concerns that jobs usually done by people can be superseded by technology.

However, the report says that "digital disruption is here to stay, and African companies must embrace this to reap the rewards." Growing skills on a local level is an important part of this process, according to the report's authors.

The drive towards boosting local content is, therefore, an ongoing discussion point across the African market and developing digital skills needs to be part of this. In 2018, Equatorial Guinea and Uganda joined the growing ranks of African countries which have regulated local content policies. In Equatorial Guinea, a local content policy is being enforced with the threat of bans for non-compliant companies. Meanwhile, Uganda this year passed a new local content policy as part of its plans to achieve middle-income status by 2040, bolstered by the production of crude in the Lake Albert Basin. This is expected to commence in 2021, with FID for the refinery and the export pipeline by the end of Q1 2019.

Last year, Petroplan published its second Talent Insight Index, which collates the sentiments on talent and recruitment from oil, gas and energy professionals. One of the major findings of this report was that people with strong digital skills may not be looking at oil and gas as a career choice despite growing recognition across both sectors that the need for these skills is increasing. As such, the report recommends increased investment in training for these skills, as well as finding talent outside the industry.

To attract millennials and "generation Z" – the generation after millennials who now make up the latest intake of new graduates, the report recommends the oil and gas industry does more to overcome negative preconceptions about each sector. Creating a more diverse and less hierarchical workforce are other strategies cited in the Petroplan report for attracting young talent with digital skills to oil and gas careers.

PIPELINE INFRASTRUCTURE: ADDING VALUE ACROSS AFRICA

Pipeline projects can be ambitious and expensive undertakings, but when done properly and efficiently, they add immense value along the entire supply chain and boost access to energy.

PIPELINE PROJECTS ACROSS Africa are becoming vital to supply chains, job creation and the development of the continent's oil and gas industry. Some of the world's most ambitious and important pipeline projects are happening on the continent and the potential for transforming economies is immense.

Of course, the pipeline sector is not without its challenges. Indeed, DNV GL is working on a number of joint industry projects (JIPs) which are relevant to pipeline issues faced by African operators. One of these JIPs is focused on illegal tapping and sabotage of pipelines, which has been an ongoing and expensive problem particularly for Nigeria. DNV GL is seeking to gather together relevant stakeholders to evaluate and analyse the problem and establish the most effective solutions. Other pipeline-related JIPs will focus on challenges such as urgent assessment of pipelines in emergencies; microbiologically influenced corrosion in pipelines; and cryogenic technology.

Image Credit: Ken Kistler

Developing pipelines will boost entire oil and gas value chains across Africa in the coming years.

Nigeria is forecast to add the highest trunk pipeline length in the African oil and gas pipelines industry between 2018 and 2022, contributing a total length of 8,439 km by 2022, which will account for more than 26 per cent of the region's planned and announced oil and gas pipeline length additions, according to leading data and analytics company GlobalData.

The company's report 'Oil and Gas Pipelines Industry Outlook in Africa to 2022' forecasts that around 31,714 km of planned and announced oil and gas pipeline length will be added in Africa by 2022, taking the region's total oil and gas pipeline length to around 115,226 km by 2022.

Nigeria has the region's highest new build capital expenditure (capex) of around US$35.2bn for the 2018–2022 period. Trans Saharan Gas pipeline is the longest planned pipeline in Nigeria, as well as for Africa. It is expected to start its operations in 2021 with a planned length of 4,400 km.

Soorya Tejomoortula, oil and gas analyst at GlobalData, said, "Nigeria is focused on expanding its gas pipeline network to transport natural gas from its production centres to power generating stations. The planned pipelines will increase gas utilisation and boost electricity generation in the country."

GlobalData identifies Mozambique as the second highest in terms of oil and gas pipeline length additions as well as spending on planned pipelines in Africa's oil and gas pipelines industry to 2022. Mozambique has planned investment of around US$10.3bn by 2022 and plans to add a total length of 5,100 km of oil and gas pipelines by 2022. Major planned and announced oil and gas pipelines in the country are the African Renaissance Project pipeline and Gasnosu pipeline. These pipelines have lengths of 2,600 km and 2,100 km respectively.

SATELLITE COMMUNICATIONS BOOST OFFSHORE CONDITIONS

Increasingly, internet and video on-demand services are improving crew conditions offshore. Martin Clark reports on the latest innovations which are being utilised on African operations.

DEPENDABLE COMMUNICATIONS ARE integral to the smooth running of Africa's oil and gas industry, connecting even the remotest of sites with instant expertise, data and insight from around the globe.

The range of tools available has evolved massively since the days when communications between offshore rigs and onshore bases were limited to a two-way radio and daily reports.

And these advanced tools are being utilised not only to boost production, but also the lives of the crew onboard. Satellite communication systems are now routinely deployed on platforms, effectively creating a 24/7 bridge to the mainland or control centres anywhere in the world.

With Africa's offshore sector still growing – and new offshore territories such as Tanzania and Mozambique just opening up – it is a booming market.

The global offshore oil and gas communications market is projected to grow at 7.2 per cent a year through to 2023, according to one research paper. Satellite communications specialists like ITC Global now tailor products for the offshore segment. It specialises in satellite services to remote and harsh environments, and inked a three-year contract extension with Shelf Drilling Ltd, which operates a fleet of 39 jack-ups in West Africa, North Africa and other territories.

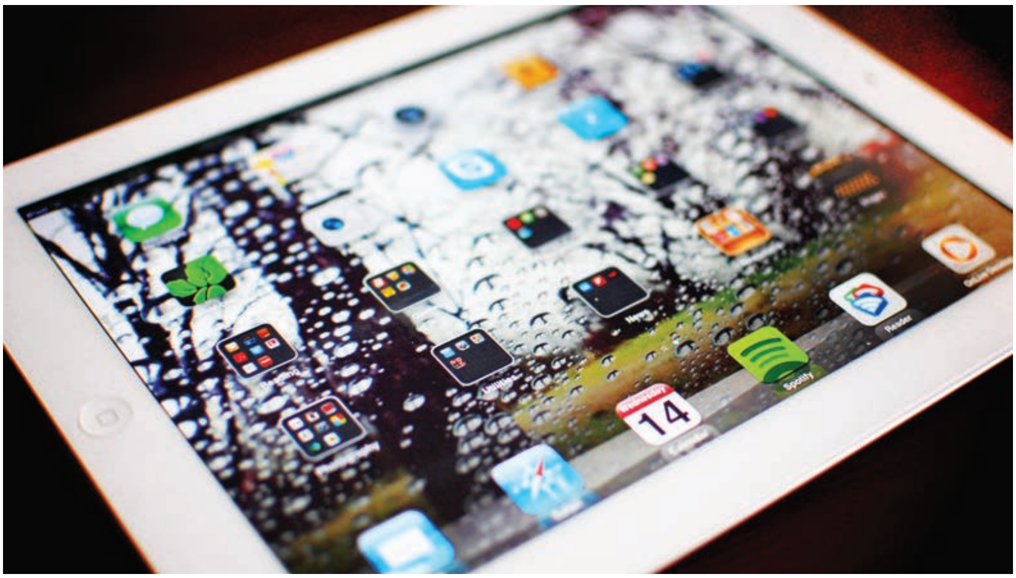


Image Credit: Jamie/Flickr

Improved internet access on oil rigs improves quality of life for offshore workers.

The Shelf Drilling Resourceful jack-up is one rig currently active offshore Nigeria, and recently extended its contract for drilling work there.

ITC Global's managed communications system was custom-designed for shelf drilling to support its corporate and crew communications through a private network solution. Specifically, the contract will see ITC Global enhance crew welfare: ITC Crew LIVE provides dedicated crew internet and video-on-demand (VOD) capabilities to remote site staff and crew. It means crew can easily access movies and the internet, reshaping a traditionally isolated environment.

"Our Crew LIVE video-on-demand solution addresses the growing industry requirement for mobile connectivity, together with value-added entertainment and welfare services," said Ian Dawkins, ITC Global's chief executive.

Shelf Drilling's IT director Ian Clydesdale cited a "positive user experience" and "high level of service quality" in the fleet's communications, prompting the new contract.

With operators keen to find ways to attract and retain crew, value added satellite services can make all the difference, especially for a more connected, internet-friendly generation.

A study by IHS Markit and the American Petroleum Institute (API) shows that millennial aged workers will account for 41 percent of the oil and gas workforce by 2025.

ITC Global believes that implementation of VOD on a site demonstrates which employers are committed to enhancing onboard capabilities, in order to target a more connected generation of employees.

Its VOD solution can be accessed onboard each remote site via a local wireless network as opposed to streaming over a satellite link, which greatly reduces the need for bandwidth on the satellite network. Because of this, there are no WiFi or bandwidth charges for VOD content delivery to each Crew LIVE-enabled site.

CHANGING WITH THE TIMES: OFFSHORE CATERING

Offshore caterers are responding to society's trends for health and wellness. From the scorching deserts of the Sahara to the offshore rigs dotted miles off the coast of Angola, catering to Africa's oil and gas workers presents complex challenges. Martin Clark reports.

DURING THE CONSTRUCTION of the 1,070 km Chad-Cameroon pipeline, which traverses desert and jungle terrain to reach the Port of Kribi on Cameroon's Atlantic coast, catering firms worked tirelessly to keep the large numbers of foreign and local personnel fed and happy.

At Christmas, that meant responding to the diverse tastes and appetites of a multi-national workforce, from roast turkey and stuffing for the British workers, to foie gras for the French. In the offshore environment, the task is perhaps even more challenging.

French food services group Sodexo is a major player in providing catering for offshore rigs and counts Seadrill among its clients, working with the offshore driller worldwide and extensively across Africa. It works directly with the oil companies themselves, namely Shell, where it extended its footprint to include work in Gabon, among other territories, through to 2020.

Indeed, Sodexo can trace its roots back to winning business in Africa in the 1970s, running remote sites for big oil and gas firms, often in tough environments. And it's big business too. Sodexo's Seadrill contract is worth around US$235 million over five years, while it nets US$158 million per year from its Shell work worldwide.

Other services offered on board drillships and floating platforms include housekeeping and laundry, security, health and safety, even vending machines.

Image Credit: Rosalba Casanuovo/Flickr

Offshore caterers are embracing healthy eating trends that have become popular around the world.

But the times are changing.

Major catering providers have responded to broad society shifts such as a heightened interest in healthy food and wellness. As well as food, this has meant recruiting wellness ambassadors to help direct menus and improve overall health and wellbeing for Sodexo clients. Its nutrition, health and wellness programme, Mindful, announced personal trainer Faisal Abdalla as its first global fitness ambassador. For clients, Mindful offers 300 recipes promoting healthy indulgence that are low in calories, sodium, refined sugars and fats.

> **“Catering firms worked tirelessly to keep a multi-national workforce fed and happy during the construction of the Chad-Cameroon pipeline.**

The massive growth of Africa's offshore sector in the past two decades has also fuelled the rise of local catering firms to compete with major global players.

Africa Catering Nigeria Ltd began supplying drillers such as Deutag, Global Santa Fe and Parker Drilling with hospitality services in the prolific Niger Delta. This has now expanded to almost 2,000 staff serving over 7,000 people every day across multiple sites in Nigeria, with a headquarters at Onne, near Port Harcourt.

Other indigenous providers have emerged in South Africa, as well as many of Africa's newer offshore provinces such as Ghana and Angola. As Africa's energy sector grows, so too will the demand for catering and other hospitality services.

AFRICAN RIG COUNT

COUNTRY	October 2017	September 2018	October 2018	Annual change
ALGERIA	55	49	46	-9
ANGOLA	3	4	4	+1
CAMEROON	2	1	1	-1
CONGO (BRAZZAVILLE)	2	4	4	+2
CÔTE D'IVOIRE	0	1	1	+1
EQUATORIAL GUINEA	1	0	0	-1
GABON	1	3	4	+3
GHANA	0	0	0	N/A
KENYA	1	0	0	-1
LIBYA	1	9	9	+8
MOROCCO	0	1	1	+1
MOZAMBIQUE	1	0	0	-1
NAMIBIA	0	1	0	N/A
NIGERIA	9	14	15	+6
SENEGAL	0	2	2	+2
SOUTH AFRICA	0	0	0	n/a
TUNISIA	0	3	3	+3
OVERALL AFRICA	85	109	107	+22

Source: BakerHughes

3M launches gas and flame detection product portfolio

3M GAS & Flame Detection, a new product portfolio under 3M's Personal Safety Division, has debuted its gas and flame solutions, product breadth and innovative technologies as a unified front.The newgroup is formed from 3M's 2017 acquisition of Scott Safety and its Detcon, Oldham, Simtronics and GMI.

"By unifying our expanded portfolio of brands into 3M Gas & Flame Detection, we're providing the POG, industrial, hazmat and commercial communities with a single source for a broad line of safety equipment, including an enhanced offering of gas and flame detection system solutions," said Mel Gerst of 3M Gas & Flame Detection.

The products from 3M Gas & Flame Detection are well recognised for being designed for harsh environments and toughapplicationsand appreciated for their user-friendly portables and large fixed selection.

They help keep personnel and plants safe from hazards thanks to a wide range of sensing technology, including electro-chemical, catalytic bead, metal oxide sensor, infrared and other optic solutions for gas and flame detection.

Image Credit: Kapil Sharma/Flickr

Gas and flame detection is essential for safe operations.

When customers require a customized approach, 3M Gas & Flame Detection's application engineering groups help customers build the right plan for their unique hazards. A complete product line and industry-leading solutions offer excellent perspective and quality products trusted for the most critical situations.

For more information, please go to: http://gasdetection.3M.com or contact gasandflamedetection@mmm.com

DNV GL commissions world's largest industrial explosion chamber

Image Credit: Adobe Stock

Explosion experiments will provide valuable information.

DNV GL HAS commissioned the operation of a versatile unit for large explosion research at Spadeadam Research and Testing. The chamber supports a joint industry project (JIP) initiative and an identified need in the market. They have just completed five commissioning runs of varying explosion severity. Spadeadam was engaged, in 2017 to run near full-scale explosion experiments for a DNV GL-led JIP; CostFX. The CostFX project will investigate cost-efficient explosion load descriptions for process areas. Dan Allason, head of research and innovation at Spadeadam, said: "The successful commissioning of this chamber for the CostFX project has shown it to be capable of delivering explosion loadings in excess of 2 bar with durations greater than 200 ms. This is well suited to providing the types of loads required for the project and will also provide a world leading capability for other explosion research."

The project aims to improve and align knowledge between HSE, fluid dynamic and structural disciplines on explosion load criteria; and reduce complexity and over-design in models and methodologies for explosion protection, while balancing demand for valid, accountable safety margins.

www.dnvgl.com

Teaching ethics for oil and gas operators and employees via an e-learning module

TWO ANNOUNCEMENTS ON ethics and compliance were made at the International Marine Contractors Association's (IMCA) Contracts & Insurance Seminar. Focusing on 'Ethics and compliance – a shared challenge', Subsea 7's Group head of compliance and ethics, Andrew Hayward announced that in Q4 IMCA will launch a high-level Code of Conduct which establishes the core ethics and compliance principles for its members.

Image Credit: IMCA

Allen Leatt, CEO of IMCA.

Andrew Hayward said: "If you deal with each and any IMCA member, you should know what you can count on."

The 'Doing Business Without Bribery' e-Learning module, is to train, explain, and encourage anti-bribery and corruption best practice. The IMCA-branded version will be free to all IMCA members. Initially, this will be available in English, French and Brazilian Portuguese. Allen Leatt, IMCA CEO said: "The Code of Conduct will give a commonality of purpose throughout the Association's membership and build ever-greater confidence in the attitudes of our member companies towards ethics and compliance."

www.imca-int.com

Netzsch aims to reduce cost of ownership

NETZSCH PUMPEN & SYSTEME GmbH's TORNADO T2 rotary lobe pump has been designed with the aims of increasing reliability, maintenance, and performance, while reducing the total cost of ownership.

Self-priming and valveless, the TORNADO® T2 is a positive displacement pump which can be used for any kind of liquid, including media containing gas, solids or fibrous matter. The TORNADO T2 pump can be used in intermittent, continuous or metering applications.

Unlike conventional rotary lobe pumps that use standard elastomer lobes, the concept of the TORNADO T2 is based on two hardened steel lobes that rotate in a geometrically adapted elastomer insert. This bi-lobe rotor design creates a considerably longer sealing line, providing more wear padding. A pulsation reduction system ensures minimal pulsation or shear forces.

The pump features an elastomer insert design that saves energy, reduces wear, and increases overall service life.

Vulcanised onto the edges of the lobes to create a permanent hard-soft contact between the lobes throughout the 360° rotation cycle, the inserts avoid high-wear contact. The elastomer cage acts as a stator and is subject to less dynamic load and deformation than a traditional design, where thick elastomer packages on the lobes are in constant kneading contact. The design replaces complex timing gear with a synchronous toothed belt drive system.

www.netzsch.com

Mixing solution for oil, gas and petrochemicals

THE SPX FLOW Lightnin and Plenty mixers and agitators have multiple applications for oil, gas and petrochemical operations, such as drilling fluids, mud mixing and as pipeline static mixers. They combine advanced technology and detailed process understanding.

Plenty heavy-duty side entry mixers are designed and developed for tank storage and blending. Aimed at large diameter tanks or tanks with floating roofs, which preclude the use of top entry mixers, they offer a cost-effective solution for applications varying from homogenisation of clean fluids to crude oil bottom sludge and water (BS&W) control. The mixers are highly efficient at converting energy into fluid motion, delivering greater output and reduced production costs. They do not suffer significant energy losses at the pump, in the pipework, in the bends, or most significantly, at the jet nozzles.

To avoid drips on the ground and afford greater environmental protection, the Plenty side entry mixers have a wear resistant tank shut-off device with safety check valve, which provides reliable tank closure for seal and bearing maintenance under full tank conditions. Machined into the shaft as a single component instead of being welded on, this unique tank shut-off system is designed for assured reliability.

The mixers are further available with a choice of seal options, including single, tandem and, for maximum assurance against any leaks, double mechanical seals.

Image Credit: SPX

SPX has launched a versatile range of mixing solutions.

From its Lightnin brand, SPX FLOW offers a wide range of mixers and high-efficiency impellers to meet broad application and industry needs. The Lightnin 70 Series mixers have many standard configurations, an extended mechanical seal range, and are highly configurable and adaptable.

www.spx.com

ADVERTISER'S INDEX

HELPING CLIENTS TO MEET WORLD-CLASS STANDARDS

Emmanuel Onyekwena, managing director, Tolmann Allied Services Company, outlines the Port Harcourt-based company's major achievements for 2018 and plans for 2019.

Which services are proving more popular with your clients?

Our OPITO Basic Offshore Safety Induction Emergency Training (BOSIET)with Compressed Air Emergency Breathing System(CAEBS), is very popular among our clients, basically because its OPITO-approved, and that means its internationally recognised.

Other services which are done almost on a daily basis include Further Offshore Emergency Training (FOET), Helicopter Underwater Emergency Training (HUET), Survival At Sea (SAS), Helicopter Landing Officer (HLO), Helideck Assistance (HDA), Basic Fire Fighting (BFF), and National Examination Board in Occupational Safety and Health (NEBOSH) training, which is a UK-designed course.

Tell us more about the technology services which Tolmann provides.

At Tolmann we provide Deepwater training simulation using environmental effects, including wave simulation, winds, rain, thunderstorm and fog. We also have digital training such as digital Basic Offshore Safety Induction and Emergency Training (BOSIET), BOSIET with Compressed Air Emergency Breathing Systems (CAEBS) digital training, a digital Tropical BOSIET course, as well as International Minimum Industry Safety Training (IMIST).

Image Credit: Tolmann Allied Services

Mr Onyekwena has plans for ongoing improvement for Tolmann Allied Services in 2019, as well as providing new services and expanding the client base.

What have been the company's proudest achievements for 2018?

2018 has been a good year for us as we've had a lot of achievements. Among our achievements are our new facility, the Modular Firefield Emergency Rescue Training Centre (MOFERT). It was commissioned on 1 November 2018 by the Executive Secretary, NCDMB, Engr Simbi Wabote. We were also able to commence our Digital Delivery training courses.

Our International Association of Drilling (IADC) RigPass certification was obtained. And we have attained a record of zero lost time to injury (LTI) this year, which means our customer delivery service is satisfactory.

> "Meeting Nigerian local content requirements is very important to us so we have a 100 per cent local workforce"

How important is meeting local content requirements?

Meeting Nigerian local content requirements is very important to us – that is why we have a 100 per cent local workforce for our human capacity in the country.

What exciting plans do you have for 2019?

Continuous improvement, first and foremost. We also plan to deepen our safety value for desired result, provide more training services in new areas of specialisation and, of course, expand our clientele base to serve more people.

Capacity building and professional competence explains our mission

Tolmann Allied Services Company Limited

TOLMANN commissions Modular Firefield Emergency Response Training Center (MOFERT)

The Modular Firefiled and Emergency Response Training Center offers delegates / participants with a choice for the following courses that meets global international standards in line with best practices.

These Courses are:

- Advanced Firefighting • Helideck Assistance (HDA) • Offshore Installation Manager (OIM)
- Offshore Emergency Response Team Member Training (OERTM)
- Control Room Operator Emergency Response (CRO)
- Offshore Emergency Response Team Leader Training (OERTL)
- Major Emergency Management Initial Response Training (MEMIR)
- Helideck Emergency Response Team Member Training (HERTM)
- Confined Space Entry

Currently, the growing number of delegates participant at the facility that has embraced these courses clearly demonstrate its acceptability which meets global international standards.

Other courses offered by TOLMANN includes:

- OPITO BOSIET • OPITO TBOSIET • OPITO DIGITAL BOSIET • OPITO HUET • OPITO THUET

OFFICE ADDRESS
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Plot 7b Trans-Amadi Industrial Layout
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Plot CX Trans-Amadi Industrial Layout
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Opito Approved Training Provider
"TRAINED WITHOUT COMPROMISE"