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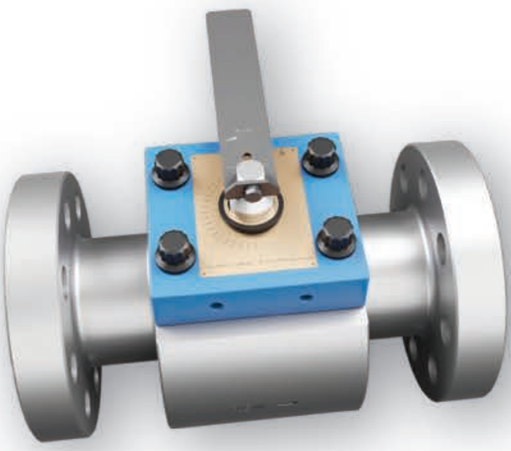
West Africa rising

Offshore ambitions in Senegal, Mauritania, Côte d'Ivoire and Sierra Leone

Joe Watson Gakuo, CEO, Oil & Gas Virtual Summit (p34)

LANCASTER FLOW AUTOMATION
VECTOR INLINE CHOKES



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Four West African markets in focus from page 13. (Image credit: Adobe Stock)

EDITOR'S NOTE

BUSINESSES AROUND THE world are adjusting to the "new normal" and the oil and gas industry is no exception. With the double challenge of the COVID-19 pandemic and historically low oil prices, 2020 has been one of the most challenging for oil and gas operators, but there is good news on the horizon. In this issue, we focus on four important West African markets – Senegal, Mauritania, Sierra Leone and Côte d'Ivoire – and the prospects for offshore development across all these countries are strong, even if the pandemic has caused delays to some projects.

Rather than focusing on doom and gloom, it is important for the African oil and gas industry to look forward and attract investment. Our back page interview is with Joe Watson Gakuo, CEO of the Oil & Gas Virtual Summit – he highlights why Africa is a great investment destination, especially as the continent is largely emerging well from the period of lockdown.

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SEPTEMBER

6-9 **North Africa Petroleum Exhibition**
Oran, Algeria
www.napec-dz.com

OCTOBER

7-8 **Upstream West Africa Summit**
Banjul, Gambia
www.upstreamwestafrica.com

14-15 **Angola Oil & Gas**
Luanda
www.africaoilandpower.com

20-22 **Africa Energy Forum**
Amsterdam
www.africa-energy-forum.com

20-23 **Africa E&P Summit**
Online
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Maputo
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NOVEMBER

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9-12 **ADIPEC**
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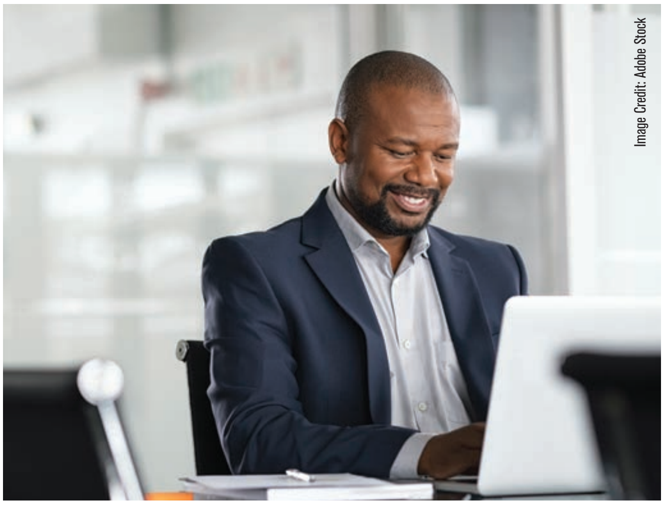
Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

Virtual summit aims to share big industry ideas safely

THE OIL & GAS Leadership & Success Virtual Summit, which will be held online from 6-10 July, 2020, is being designed as a powerful response to the challenges facing the oil and gas industry on a global scale.

By using the latest in virtual meeting technlogy, the carbon footprint of the event is minimised, along with significant travel cost savings. This means more people from companies, organisations and government agencies will be able to take part, particularly as workforces the world over have become adept at using the latest online technology to hold meetings and events, and communicate internally while running operations in a way that helps curb the spread of COVID-19.

The event will feature panel discussions and presentations from leading oil and gas business experts, industry thought leaders, major stakeholders, strategic thinkers, and operational leaders. Delegates will have access to five days worth of content that will address a wide range of concerns arising from the oil industry crisis, which have dominated headlines this year, such as the COVID-19 pandemic and historically low oil prices.



Executives will be able to log in from wherever they are in the world.

Presentations will be from senior executive speakers covering the hot topics with the objective to help the industry navigate the current problems being faced within the industry so that all stakeholders will be in a stronger position and have a better understanding of how to move forward as the world seeks to fully open for business again.

Speakers include: Elizabeth Rogo, founder and CEO, TSAVO Oilfield Services; Brian Muriuki, MD and country chair, Shell, Ghana; Jasper Peijs, VP, Africa exploration, BP; and Dr. Carole Nakhle, CEO, Crystol Energy.

The summit is designed to take delegates on a step-by-step journey throughout the oil and gas value chain on how to deal with the current crisis, adapting to a new world order and succeeding in a changed business environment. A Networking Platform, Exhibition Gallery and Energy Resource Centre will be accessible to participants.

For more information, go to www.upstreamawards.com/virtual-summit-2020

Sparrows Group moves to purpose-built facility in Angola to support African growth

ENGINEERING AND MAINTENANCE specialist Sparrows Group has re-located to a new purpose-built facility in Luanda, Angola to support its growing operations in Africa. The move provides the company with a new workshop, storage yard, training facilities and office to deliver its ISO-certified services in-country. This includes turnkey engineering, equipment maintenance and training services.

Located in the Vila Flor area, at approximately 2,000 sq m in size, the new complex enables Sparrows to provide customers in the region with a fast turnaround and assurance that work is carried out by experienced specialists to the right international standards. Equipped with the latest digital technology, the new facility gives Sparrows the capability to deliver their full suite of training courses including mobile crane, crane simulator, forklift and rigging training. A new equipment rental fleet situated at the premises includes rigging lofts, hydraulic power units, flushing rigs, and general tooling.

Image Credit: Sparrows Group

The move to a new facility is positive news for Sparrows' African operations.

Stewart Mitchell, CEO of Sparrows, said, "Our team in Africa has been working extremely hard to get this new facility up and running and we look forward to working with our customers to deliver the quality and efficiency they rightly demand in the region."

Nigeria opens bid round for marginal fields, including land, swamp and shallow water

THE NIGERIAN GOVERNMENT has announced a 2020 oil licensing round as it opens up 57 marginal oil fields to potential investors.

The fields, located on land, swamp and shallow offshore terrains, are open to indigenous companies and investors with substantial Nigerian shareholding interested in participating in the exploration and production business in Nigeria.

However, companies whose promoters are either indebted to the government or currently holding oil assets are not pre-qualified to participate in the bid.

Bidders are expected to demonstrate capacity for Nigerian content development, particularly in the areas of training and growth of indigenous capability and manpower, as well as plasn for local input in the provision of materials and services to the industry.

"The overall process is not expected to take longer than six months, from the date of announcement and commencement to signing of farm-out agreement with the leaseholders," according to the Nigerian Directorate of Petroleum guidelines.

Image Credit: dotun55/Flickr

Nigerian swampland is among the sites on offer in this bidding round.

Frontier lines up a series of online oil and gas events

TO MEET THE constant demand for information while avoiding non-essential travel Frontier has lined up a series of web-based events aimed at the African oil and gas industry.

Forthcoming events include: 'Africa Exploration in Focus: MSGBC Basin', which will be held on 18 June; 'Stepping Up: Can Oil Companies be the Champions of Net Zero?', which will be held on 25 June; and 'Africa Exploration in Focus: Somalia', which will be held on 2 July. Earlier events are now available online to registered participants as an on-demand service.

The events which have already been held cover topics such as Liberia's Harper Basin licensing round; oil market uncertainty in the age of COVID-19; the impact of global LNG expansion; Namibia's oil and gas future; South Africa's oil and gas future (see report on page 12); and funding challenges for the oil and gas industry.

The events have attracted a range of speakers from across the African industry, including: Lindiwe Mekwe, general manager: Regulation Division, Petroleum Agency SA; Adewale Fayem, managing director, Total E&P South Africa; Maggy Shino, Petroleum Commissioner, Ministry of Mines & Energy, Namibia; Gil Holzman, president and CEO, Eco Atlantic Oil & Gas; and Minister Abdirashid Mohamed Ahmed, Minister of Petroleum and Mineral Resources, Somalia.

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TSAVO Oilfield Services supports Equal by 30 campaign to boost women in oil and gas

TSAVO OILFIELD SERVICES joins seven major partners across the African continent as a signatory of the Equal by 30 campaign. Elizabeth Rogo, the founder and CEO of TSAVO Oilfield Services, commented, “It fills me with great joy to join and support the Equal by 30 campaign. I know too well just how vital a role women can play in the energy sector when they seize opportunities and create them, as I have been able to do. I want more women to become involved and to show the next generation that the sky is the limit.”

“As we continue to push for gender diversity and women empowerment, we value the participation of the men in the energy sector who walk with us and support this initiative, including at TSAVO. The inclusion of women in all aspects of the energy sector is at the core of who we are and what we represent,” Rogo added.


Image Credit: Adobe Stock

TSAVO is aiming for equal representation for women by 2030.

Practical steps which the company is taking to attract and retain talented women include: training for all employees to create workplaces free of harassment, violence and bullying; creating opportunities to encourage girls and women to take up STEM subjects and pursue careers in the energy industry; and a target of approximately 50 per cent female representation across the company by 2030.

Sustainability grows as a priority for oil and gas companies worldwide, report finds

OIL AND GAS companies are facing increasing scrutiny for their carbon intensive operations, but this is leading to stronger commitments in regard to sustainability, according to a report by GlobalData.

With the passing of the 2015 UN Climate Change Framework, the demand for the oil and gas industry to curb its carbon emissions has increased. Companies that implement concrete measures to reduce their environmental impact are best placed to succeed in the coming years, says the report, ‘Sustainability in Oil & Gas’.

It reflects that the environmental threat of oil and gas industry is widely recognised and various governments have initiated preventive measures to mitigate it. Subsequently, many oil and gas companies are taking steps to curb the environmental impact, primarily due to regulatory and shareholder obligations. However, when it comes to social and governance factors, there appears to be a differentiation in the way companies handle these issues.

“Oil majors and other multinationals have adopted best practices in ensuring employee health and safety. However, the same is not true in case of the national oil companies. Many of these companies also lag on the corporate governance front as their operations are prone to corruption and crony capitalism,” a spokesperson for GlobalData commented.


Image Credit: Adobe Stock

In response to global pressure, sustainability is becoming a higher priority.

Nigeria works to mitigate oil price slump and virus

IN THE WAKE of the oil price slump coinciding with the economic impact of COVID-19, action has been taken in Nigeria to mitigate the impact on the oil-dependent economy.

The Board of Directors of the African Development Bank (AfDB) has approved a US$288.5 million loan to help the country tackle the pandemic and mitigate its impact on people and businesses. This loan is the bank’s initial response to help mitigate the slump in oil prices.

Prior to the outbreak, Nigeria’s economy was projected to grow by 2.9 per cent of GDP in 2020 and further expand by 3.3 per cent in 2021. However, with the advent of the pandemic and the slump in crude prices, the economy is expected to shrink by between 4.4 per cent under a conservative baseline scenario, and 7.2 per cent should the pandemic persist to end-2020.

The pandemic could be the catalyst for further economic diversification away from oil.

Ebrima Faal, senior director of AfDB for Nigeria said that beyond the country’s immediate economic recovery needs, the bank and other development partners will dialogue with the government on proposals for medium-term structural reforms to diversify and boost domestic revenues away from the oil sector.

AfDB has instituted strong fiduciary measures to monitor the use of COVID-19 funds, and will keep the channels of communication open, particularly with the Office of the Auditor General in Nigeria, to ensure adherence to the transparency and accountability of the funds, Faal said.

Aker Energy Ghana looks to the future with Pecan field

AKER ENERGY GHANA has reaffirmed its commitment to finding a solution to commence a phased development of the Pecan field offshore Ghana.

"In a time when most other E&P companies are putting development projects on the shelf due to the COVID-19 situation and historic low oil prices, Aker Energy and our partners, Lukoil, Fueltrade and GNPC, working closely with the government of Ghana, are actively pursuing a development concept where we can commence phase one of a phased development of the Pecan field," said Håvard Garseth, CEO of Aker Energy. "Although we have an altered timeline, we are on our way to finding a development concept with a break-even price that is sustainable and resilient also in a low oil price environment."

In March, Aker Energy announced that FID for the Pecan field development project was on hold. While no new date has been set for FID, the company is executing conceptual studies to assess feasibility.

"Getting projects like the Pecan field in operation is key toward our mission of making Ghana a major producer in West Africa and Africa as a whole," said Dr Mohammed Amin Adam, Deputy Minister of Energy.

Nigerian petroleum ministry intervenes on petrol prices

Image Credit: Adobe Stock

Petrol prices remain under state control.

TIMIPRE SYLVA, JUNIOR Minister, Petroleum Resources has said the Nigerian government will continue to "interfere" in determining the pump price of petroleum prices "to protect the generality of the public from undue exploitation and prevent inordinate profiteering by oil marketers".

Mr Sylva stressed that the role of government in a deregulated economy was to provide a shield for the consumers and that such a shield the Nigerian government would "provide through the operation of the Petroleum Products Pricing Regulatory, PPPRA, which would use its price modulation mechanism to engender a market-driven price regime."

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South Africa's Upstream Petroleum Resources Bill in focus at Frontier Energy webinar

PROGRESS ON THE South African Upstream Petroleum Resources Bill was discussed by a webinar panel on South Africa's oil and gas future, which included the new CEO of the South African Oil & Gas Alliance, Total E&P South Africa, the independent view from Impact Oil & Gas and Africa Energy and the Petroleum Agency SA represented by Lindiwe Mekwe, general manager: Regulation Division and former acting CEO.

The panellists urged the South African government to prioritise passage of the bill, which will be put before Parliament in coming months. Attractive fiscal terms and state investment in energy infrastructure are the main focuses of the bill.

Lindiwe Mekwe, general manager: regulation division, Petroleum Agency SA gave an overview of oil and gas exploration and highlighted the importance of consultation between government and industry. She anticipates the bill will become law by 2021.

Adewale Fayemi, managing director, Total E&P South Africa talked about the success at Brulpadda, the follow on field development and other prospects that Total are exploring in the region. Meanwhile, Impact's Exploration Director, Philip Birch stressed the importance of the Venus well in Namibia,which Total will drill with its partners this year.


South Africa is optimistic about new horizons for exploration.

Image Credit: Adobe Stock

Jan Maier, vice president - exploration, Africa Energy said the company was hopeful for the Gazania-1 well, which they are working on in partnership with Azinam Limited and Panoro Energy subject to approval by the South African government. He said they are expected to spud by the end of 2020. He spoke of the importance of South Africa's attractiveness versus other more established hydrocarbon opportunities such as Angola as investors look for exploration opportunities in the southern part of the continent.

Adrian Strydom, CEO, South African Oil & Gas Alliance said that South Africa is ready to grow the upstream sector and emphasised the world class skills, research and opportunities the country had to offer, in return for jobs and investment.

Egyptian oil asset "exceeds expections"

BRIAN LARKIN, CEO of United Oil & Gas (UOG), said the result of the El Salmiyah-5 oil well on the Abu Sennan concession in Egypt has significantly exceeded the company's pre-drill expectations. With a headline figure of c. 8,700 boepd on test from the primary target in Kharita, the results build on the success of the last 12 months which has seen UOG's share of production increase significantly.

The well was targeting previously undrained reservoirs of the El Salmiyah Field, focusing on the Kharita Formation, and secondary objectives in the Abu Roash C and Abu Roash E. After logging, testing, and completion, the rig was released on 21 May.

The net pay was found at all of the targeted intervals, totalling more than 120m for the well and significantly exceeding pre-drill expectations. The main target interval of Kharita was found to be approximately 16m shallow to prognosis, indicating a larger than expected undrained area updip of the existing wells in the field

SENEGAL AND MAURITANIA: PROGRESS IN TOUGH TIMES

Thomas Hedley, field editor, *Africa Oil & Power*, writes about how Senegal is a leader on the rise in west Africa, while Georgia Lewis, managing editor of *Oil Review Africa*, provides an overview of Mauritania's burgeoning hydrocarbons market.

Senegal

Thanks to an ambitious economic development plan initiated in 2014, the Senegal Emerging Plan (PSE), Senegal has managed to attract more foreign investors over the years.

The objective of the PSE is to proclaim Senegal as an 'emerging country' according to the United Nations, which is characterised by a set of criteria making it possible to declare that the country has made decisive progress in terms of economic and social development.

The notion of 'emerging country' also translates a notion of stronger influence on the international as well as regional community.

Senegal is a country blessed with an excellent geographical location, at the westernmost point of the African mainland, featuring a large Atlantic coastline.

Relatively developed transport and hospitality infrastructure translates into a great tourism potential.

The Sine Saloum Delta region is the south is a globally recognised spot for natural ecosystems and wildlife viewing, while the former capital Saint-Louis, north of Dakar, is praised for its colonial architecture heritage. 1.4 mn tourists visited Senegal in 2017, up 40 per cent from 2014. The sector generates more than 300,000 jobs.

Image Credit: Utenriksdepartementet UD/Flickr

Macky Sall, president of Senegal, has introduced long-term policy aimed at building a solid local content-strong economy.

Phase 2 of the PSE, which was launched in 2019, aims in particular to make Senegal independent from an energy point of view and endowed with universal access to electricity by 2025. The plan includes a strong renewable energy aspect. Several solar park projects have come online since 2014 as well as the commissioning of the largest wind farm in West Africa, Taiba N'diaye, whose official inauguration took place in February 2020.

> "Senegal has decisive success factors: geography, political and institutional stability and a strong political will towards reform."

Since the launch of the PSE, Senegal has experienced a sustained and very stable growth rate of around 6 per cent per year. While the COVID-19 epidemic may indeed affect the 2020 targets, the medium-term outlook remains very optimistic. The first productions of the Sangomar and Greater Tortue Ahmeyim fields, respectively of oil and gas, are planned for 2022 and 2023, with final investment decisions signed on the two projects. The Taiba N'diaye wind farm, planned to increase electricity production by 15 per cent, is in operation.

The first solar park went online three years ago, and five more have been launched since then and two are in the pipeline. In addition, Senegal is part of the Senegal River Development

Organization (OMVS) which aims to generate electricity from the Senegal river.

Almost simultaneously with the launch of the PSE, an oil exploration team comprised of Australian FAR Ltd and Woodside Energy, as well as the British company Cairn Energy and Senegalese Petroleum Company (Petrosen), announced a large oil discovery off the coast of Dakar in deep waters.

A year later, exploration company Kosmos Energy announced a very large gas discovery offshore in very deep waters, straddling the border with Mauritania. British major BP has acquired operator status on the Greater Tortue Ahmeyim project, which aims to be the fastest liquefied natural gas (LNG) project ever developed. Although the COVID-19 epidemic is threatening what was originally planned, targets remain the same as pre-crisis.

Senegal has decisive success factors: an attractive geographic position, strong political and institutional stability, a very strong political will towards reform and progress, a flexible regulatory framework for investors and a stable business climate.

Since the PSE did not foresee a strong development of the hydrocarbon sector, the discoveries of 2014, 2015 and the following ones constitute an excellent additional growth lever for a highly promising country.

The development policy undertaken by President Macky Sall following his election in 2012 is a long-term policy, aiming the build the foundations of a solid economy, based on strategic sectors such as industry and energy, including a significant component of local content across the value chain.

This is an abridged version of an article which will be published in The Africa Energy Series: Senegal 2020 Report.

Image Credit: EU Civil Protection and Humanitarian Aid/Flickr

If the gas discovery can be utilised for energy access, this could have enormous benefits for Mauritania's rural areas.

Mauritania

The offshore gas discovery which Mauritania shares with Senegal was the subject of a very amicable maritime border settlement and, since then, steady progress has been made in the development of the country's hydrocarbons sector.

While the COVID-19 pandemic has slowed progress on the Greater Tortue Ahmeyim LNG project and led to the postponement of BP's planned seismic acquisition project for offshore Senegal and Mauritania, there are still signs of hope, with operators patiently playing a long game and looking ahead to 2021 rather than opting for kneejerk responses to COVID-19.

> **"Operators are patiently playing a long game by looking ahead to 2021 rather than opting for kneejerk responses to COVID-19."**

Kosmos Energy, for example, said in a statement when it released its Q1 2020 results that the company is looking forward to "building a self-funded gas business in Mauritania and Senegal and progressing our high-quality portfolio of ILX and basin-opening exploration prospects for 2021."

While its breakwater installation on the Greater Tortue Ahmeyim project, which is 33 per cent complete, has been disrupted because of the pandemic, the plan is to spread capex over 2021, 2022 and 2023. Meanwhile, the planned sell-down process of Kosmos' interests in Mauritania and Senegal is ongoing with remote management presentations supported by virtual data rooms.

Kosmos will be buoyed by the discovery last October of a further gas deposit 125km off the coast of Mauritania with the Orca-1 exploration well finding gas in the BirAllah area, estimated at 13 tcf. Kosmos has partnered with BP and SMHPM in this project.

Looking at the bigger economic picture for Mauritania, before the gas discoveries, the economy was, and still is, largely dependant on revenue from agriculture, fisheries and iron ore.

The government and the operators working in Mauritania are motivated to ensure development of the gas industry progresses beyond the delays caused by the COVID-19 pandemic because, as well as export opportunities, the gas discovery represents enormous potential to improve access to energy for citizens as well as the main industries which still form the backbone of the Mauritanian economy.

With an estimated 20 per cent of the country's energy needs being met by renewables and an estimated 16 per cent by hydroelectricity, there is certainly space in the energy mix for gas as a primary fuel for energy as well as a reliable back-up for renewables.

Add to this a very low COVID-19 infection caseload (at the time of writing, there were only 262 confirmed cases and nine deaths from the pandemic), and the country is in good stead to continue making progress across multiple economic sectors as Africa and the world gradually seek to reopen for business and reduce lockdown restrictions.

SIERRA LEONE TO FOCUS ON OFFSHORE PROSPECTS

Sierra Leone, and neighbouring Liberia, are looking to reignite the exploration sector with new offshore licensing rounds. Two companies are now gearing up to explore 24 blocks off the coast of Sierra Leone after the government made a fast decision. Georgia Lewis reports.

IN APRIL, IT was announced that six companies submitted bids for five offshore concessions off the coast of Sierra Leone. This was the West African country's fourth petroleum licensing round, a process which began in January 2018. In an April 15 statement, the Petroleum Directorate committed to "delivering an impartial and fast-tracked evaluation of the bids and will announce the results as soon as it is able".

Fifteen days later, the government announced provisional results of the bidding with UK-based Cluff Energy Africa being awarded 15 blocks and Nigeria-based Innoson Oil and Gas being awarded nine blocks across the concessions.

Algy Cluff, Cluff's CEO, commented "Needless to say, we are pleased with the results of the Fourth Offshore Petroleum Licensing Round in Sierra Leone. I compliment the government of Sierra Leone on conducting such a thorough licensing round."

> **"We are pleased with the results and look forward to working with the Petroleum Directorate to complete the negotiations process."**

"We look forward to working with the Petroleum Directorate to complete the negotiations process and begin exploration work on these exciting, prospective blocks," Mr Cluff added.

Previously, low-key offshore exploration attempts in decades gone by produced mixed results, but with enough shows to create a sense of optimism surrounding the latest ventures. Between 1982 and 2009, only eight offshore wells were drilled but oil shows were found. Anadarko drilled three more wells between 2009 and 2021 and Lukoil made a further discovery in 2013.

The latest Sierra Leonean bidding rounds are part of a busy time for exploration in the region, with neighbouring Liberia launching the Harper Basin licensing round on April 10, which covers nine blocks in the country's western offshore zone. Previous exploration attempts off the coast of Liberia have not proven to be commercially viable and in 2015, the government had to lay off all national oil company staff, so the pressure will be on successful bidders to discover potentially transformative hydrocarbons.

Elsewhere in the petroleum sector of the two countries, Total signed an agreement in April to sell its marketing and services businesses in Sierra Leone and Liberia. The businesses were sold to Conex Oil & Gas Holdings, a regional player in the West African petroleum products importing, distribution and supply chain sectors. Conex has a network of 63 service stations, general trade fuel sales, petroleum products importing services and storage operations.

"These sales will contribute to Total's ongoing divestment programme and demonstrate our ability to relentlessly highgrade our portfolio," said Jean-Pierre Sbraire, Total's CFO. "In the current context of low oil prices, these transactions support the action plan announced to weather the crisis."

Could 2020 be the year that Sierra Leone finally realises its offshore hydrocarbons potential?

Image Credit: Adobe Stock

Ambitious gas-to-power projects with serious investment will transform access to energy in Côte d'Ivoire

Image Credit: Citizen59/Flickr

CÔTE D'IVOIRE MOVES AHEAD ON GAS-TO-POWER PROJECTS

This year has, despite its challenges, been a positive one for gas development in Côte d'Ivoire. Financing has been secured for Azito and Atinkou, two major gas-to-power projects. Georgia Lewis reports.

AZITO IS A brownfield expansion of the existing 460MW gas-to-power station. It is operated by Globeleq and fuelled by gas from Ivorian offshore fields. The project will see it expand by 253MW, accounting for around 30 per cent of the country's installed power generation capacity. The financing is via a 264 mn euro package provided by institutions including the African Development bank, the West African Development Board, the OPEC Fund for International Development, the International Finance Corporation and a pool of European development finance institutions. It is expected to go online this year. All electricity will be sold to the State of Côte d'Ivoire under a 20-year concession agreement.

When financial close was achieved this year, Globeleq's CEO, Mike Scholey commented, "Achieving financial close for the expansion of the Azito power plant is exciting and significant for the sector and demonstrates Globeleq's long-term view and partnership approach with governments."

"The Azito Phase IV tariff will be the lowest cost thermal power in Côte d'Ivoire and we look forward to providing the region with reliable, cost-effective environmentally sustainable energy in cooperation with CI-Energies and the State of the Republic of Côte d'Ivoire," Mr Scholey added.

Mahamadou Sylla, CEO of IPS (West Africa) said, "The Azito power plant Phase IV expansion is a testimony of the renewed trust given to IPS by the State of the Republic of Côte d'Ivoire and lenders, where the aggregate contribution is close to USD750 mn. It allows IPS to underpin its role as a contributor in the development of Côte d'Ivoire and the sub-region."

Atinkou, also known as Ciprel V, meanwhile, is being carried out by the Eranove Group to develop a 390MW combined cycle gas-to-power station 40km west of the capital city, Abidjan.

In December 2018, a 20-year concession agreement was signed and earlier this year, a financing package worth 303 mn euros was secured from institutions including the African Development Bank; OPEC Fund for International Development; FMO, a Dutch entrepreneurial development bank; Deutsche Investitions- und Entwicklungsgesellschaft (DEG); and the Emerging Africa Infrastructure Fund.

The International Finance Corporation was the global coordinator for securing the financing for Atinkou.

"Once built, Atinkou will provide affordable power to thousands of homes and businesses, while helping Côte d'Ivoire meet its goal of transitioning to greener electricity production. IFC's investment in the project is a testimony to IFC's longstanding commitment to Côte d'Ivoire's power sector, which began in 1994, when our partnership with CIPREL began," said Linda Rudo Munyengeterwa, IFC's regional industry director, infrastructure and natural resources, MENA.

Marc Albérola, director general of the Eranove Group, commented, "The Atinkou plant shows the strength of the Eranove Group's industrial model based on African skills and public and private partnerships involving the state and local players."

"The signing of financing agreements for the Atinkou power station opens up the use of a new generation of combined gas-steam cycle, even more efficient in economic and environmental terms with a significant reduction in CO_2 emissions," said Bernard Kouassi N 'Guessan, CEO of Atinkou and chairman of the board of CIPREL.

THE INDUSTRIAL INTERNET OF THINGS AND DIGITAL TRANSFORMATION

The Industrial Internet of Things (IIoT) is helping oilfields across the globe modernise, improve service to customers and help protect the environment. The benefits for Africa could be immense, with sufficient investment.

Image Credit: Adobe Stock

Leveraging IIoT technology requires investment, but its applications for oil and gas are myriad.

TECHNOLOGY HAS TRANSFORMED the oil and gas sector; prices are lower, expectations are higher, and the competition is fiercer than ever. To successfully navigate this industrial evolution, energy operators in Africa must invest in innovation so that they can take advantage of the transition to digital. By keeping up with the rapid modernisation, operators can deliver a service which benefits them, their customers, and the environments in which they operate.

As the Internet of Things (IoT) begins to transform industries all over the world, having a network that can cope with the huge influx of data from connected devices and systems has become paramount to maximising productivity and profit. The alternative is inefficiency and, at worst, errors which could cost producers a significant amount of time and money. More devices and more connections mean more opportunity for cybercriminals, too. Therefore, protecting the increased volume of data being stored within and transmitted between interfaces is crucial to protecting Return on Investment (ROI), productivity and security.

The implementation of IoT and Machine Learning (ML) technology to digital oilfields can streamline operations significantly. With the capability to take on 80 per cent of tasks executed on modern well sites and replace manual processes with digital well prospect maturation, working hours and department hand-offs are significantly reduced. Telemedicine is also enabled, allowing crew to be treated on-site, reducing response-time and emergency evacuation costs.

On an industrial scale, IoT solutions enable remote management of devices and equipment, pipeline monitoring and real-time defect detection, allowing early interventions in malfunction scenarios including pipeline leakage, gas bottlenecks and safety breaches. Algorithms can also generate automated recommendations for well placement in the construction of oil rigs via subsurface planning, saving on costs and environmental damage. By optimising productivity, protecting crew and preserving the surrounding environment, producers can make better-informed operational decisions from the ground up, facilitating a stronger market position.

Having focused its expansion on Africa over the past decade, Speedcast is committed to providing technology, equipment, and fully-managed networks to Sub-Saharan regions and beyond. Last year, it initiated its sixth project in Mozambique, working to deliver a wide range of fully managed services and 24/7 IT support to offshore assets and energy base camps. With offices and teleports across the continent, it has worked closely with local economies to operate in accordance with the region's unique challenges and priorities.

By making the investment in fully managed value-added solutions to cater to the needs of the customer, producers can remain competitive in today's volatile market.

Offering solutions which remain resilient in harsh environments and are compatible with existing systems, Speedcast facilitates a seamless transition without causing operational disruption.

www.speedcast.com

THE CHANGING WORLD OF EMPLOYEE TRAINING

The oil and gas industry has already become adept at communicating with employees on remote operations. As such, the changes to staff training made necessary by the COVID-19 pandemic should be easily adapted by employers, Georgia Lewis reports.


Image Credit: Adobe Stock

The realities of the COVID-19 pandemic have brought e-learning to the forefront across many industries.

THE COVID-19 pandemic has changed so many aspects of how companies work and do business across all industries – and the oil and gas industry is no exception. One aspect of the workplace which has changed is employee training. The new era of social distancing and travel restrictions has severely limited face-to-face and classroom-style training, as well as attending industry events.

To respond to the new limitations, one sector which has experienced an upward surge is online training. E-learning is not new but it has truly come into its own since the pandemic took hold. While there will always be value in face-to-face training, the benefits of online alternatives are here to stay, particularly because of the significant cost-savings and environmental benefits.

Figures from an Open University study conducted in the US suggest that using e-learning cuts energy consumption by 90 per cent and reduces carbon emissions by more than 85 per cent, compared to traditional face-to-face learning where travel is involved.

Companies have been quick to make the pivot to online-only training. Astutis, which runs health and safety training for African oil and gas companies, moved all courses online in March this year. Meanwhile, Norwell Engineering, a drilling firm based in Aberdeen, Scotland is exploring how its new online training programme could benefit East Africa's oil and gas operations as part of a trade delegation to Uganda and Tanzania, two exciting new markets for African oil and gas.

> **"E-learning could cut energy consumption by 90 per cent and carbon emissions by more than 85 per cent compared to traditional training."**

Mike Adams, Norwell Engineering's new ventures manager, said: "We have seen first-hand the need to improve training opportunities for oil and gas personnel around the world. This is especially the case in emerging markets such as Uganda and Tanzania where improving affordable access to the best industry training, without people having to leave their home country, would have a major positive impact."

The Energy Institute has also been pushing the benefits of online learning with a series of four- and five-day courses scheduled for this year on topcis such as LNG, oil and gas industry economics and mergers and acquisitions. These courses differ from the self-paced e-learning modules in that they will take place in real time in virtual classrooms so that participants can interact with the tutors.

The e-learning sector has solid growth prospects and, as employers see cost and carbon savings, it is set to continue long after lockdown is over.

THE FUTURE OF CSR FOR AFRICAN OIL COMPANIES

How can oil companies operating in African communities be good corporate citizens and develop meaningful partnerships where all stakeholders win? By Boris Ivanov, founder of GPB Global Resources B.V.

THE APPROACH OF oil companies to CSR is particularly important in Africa given the huge proportion of investment and economic activity on the continent. In African energy-exporting countries, oil exports can account for more than 90 per cent of revenues and the bulk of fiscal revenues. Yet by their nature, oil firms cannot help but impact the communities within which they operate, through the movement of people, removal of raw materials with industrial procedures and waste disposal.

When CSR first began to take hold in the 1980s, it was aimed towards poverty alleviation, health care provision and infrastructural development. In practise, this resulted in the provision of immediate funding for community projects, such as the building of schools, health clinics, power lines and water supplies. But this method of CSR was often a catalyst for problems and rising tensions in regions such as the Niger Delta, as neighbouring communities and rival groups competed for financial support. Although allocating grants continues today, firms are more aware of the society-wide impact their CSR initiatives can have, and their policies have evolved accordingly.

Instead of one-off charitable donations to schools, local students should be given funding and guidance into engineering, geology, physics and mathematics, with the opportunity to gain employment with the company. Shell Nigeria runs a sabbatical programme to help Nigerian academics build knowledge, conduct research projects and share their findings. BP Egypt funds post-graduate scholarships for Cambridge University, while ExxonMobil works with community organisations, NGOs, universities and government agencies to increase opportunities for women in emerging markets. Such programmes create genuine connections between foreign investors and local communities.

Image Credit: Global Resources B.V

Boris Ivanov explains how CSR is good business as well as being the right thing to do for Africa.

Providing investments and jobs to local communities are essential for regional growth. GPB Global Resources and its affiliates employ around 1,000 people in countries including Ethiopia and Niger. Local talent pools have offered a huge amount to the company in cultural knowledge, language skills and economic growth – they have strong ties with the local communities, enabling them to navigate challenges effectively.

Political, security, governance and economic risks still loom large in many African countries. Governments are often inclined to target oil and gas companies as an easy way of increasing government revenue. Oil businesses must therefore work to show the long-term growth they can bring to communities.

By developing productive partnerships with governments, they can ensure benefits such as economic growth and a better civic environment while mitigating risks. On a macro level, this might involve firms advising governments and relevant stakeholders on what makes a fertile business climate and supporting them through the development of transparent operating conditions and solid regulatory and reporting systems. For example, BP is a founding member of EITI (Extractive Industries Transparency Initiative) which aims to promote accountable management of oil, gas and mineral resources.

Traditional CSR areas such as education, training and recruitment of nationals, deploying sustainable practices and offering financial support for local businesses and community projects should be given focus, but it is vital to drive global efforts on universal issues. ExxonMobil works with partners in Angola, Cameroon, Chad, Equatorial Guinea, Mozambique, and Nigeria in fighting malaria over nearly 20 years.

Trust and brand value, elements viewed by some as intangible, could help prove that profit and purpose are inseparable. CSR has been evolving from a nice-to-have to a need-to-have. With the rapid onset of this pandemic, this trend has been expedited. It is vital that CSR efforts are not reduced heavily as businesses restructure through the post-COVID-19 moment. The future of CSR in Africa will depend on commitment and how firms encourage collective action by collaborating with communities and governments to create lasting change in regions that need it most. It's good business – and a moral obligation.

HOPE FOR ANGOLA'S OIL RECOVERY

While operators are reducing capital expenditure, exploration licence extensions could spur oil sector recovery in Angola, says Grace Goodrich, field editor, Africa Oil & Power.

PRIOR TO THE onset of COVID-19 and OPEC-led production cuts effective 1 May, Angola was set to see a rise in production. In February, the country recorded a production level of 1.39mn bpd, up 15,000 bpd from January. Since the middle of 2019, several majors also extended existing block production licences, reflecting an initial push to ramp up production. Aligned with the effort to yield new discoveries, Maersk Drilling was awarded contracts for a three-well exploration campaign by Total E&P in January. The project includes two wells offshore Angola in Block 32 and Block 48 and one well offshore Namibia, and boasts the deepest water depth ever drilled offshore. The campaign carries an estimated duration of 240 days and includes two additional one-well options, demonstrating a commitment by explorers to tap into existing acreage and bring new discoveries into production.

However, in the midst of COVID-19, several major operators are dramatically reducing capital expenditures. Italian multinational Eni and French major Total, for example, have reduced investment in exploration and production across the continent in 2020 by 25 per cent. In Angola, Total has suspended development of its short-cycle satellite field projects, located near the operator's large offshore installations. That said, the recent licence extensions might help to alleviate time and financial pressure on the completion of drilling programmes, the status of which remains unknown for most blocks.

> **"The recent licence extensions might help to alleviate time and financial pressure on the completion of drilling programmes."**

In February, the Angolan National Agency for Petroleum, Gas and Biofuels (ANPG) signed a Memorandum of Understanding (MoU) with the consortium that owns and operates Block 14 to extend its exploration period until 2028. The consortium is comprised of Chevron (31 per cent), Sonangol (20 per cent), Eni (20 per cent), Total Angola (20 per cent) and Galp Energia (nine per cent).

The MoU amended the terms of the agreement by targeting an increase in crude production that will enable up to 65 per cent of cost recovery in new exploration areas from 1 April. Block 14 currently produces approximately 160,000 bpd of medium-light crude oil. The agreement also provided for the readjustment of the profit-sharing contract to an 80/20 proportion, and includes the drilling of an exploration well and six development wells. Cost recovery will increase to 72.5 per cent following the drilling of the wells, and profit-sharing will shift to a 90/10 split. The agreement is directed at the areas of Tombwa-Lândana, Benguela, Belize, Lobito, Tomboco and Kui¬to, which will be merged into a new collective marketed area, known as Tombwa-Lândana, to serve as a new focus of exploration for operators.

In December 2019, Total signed an agreement with the ANPG to extend its license in Block 17 until 2045. The French supermajor, which carries a 35 per cent interest, operates the block in partnership with Equinor (23.33 per cent), ExxonMobil (20 per cent), and BP (16.67 per cent). Under the extension contract, Sonangol acquired a five per cent stake in the block and will acquire another five per cent in 2036. Block 17 is the site of the Girassol field, the largest oil discovery ever to be made in Angola, and holds estimated reserves of 2.9bn bbl, with a record of 17 discoveries made in 20 wells drilled. According to Sonangol, only 1,611 sq km of the block's acreage has been surveyed, which results in 67 per cent of the acreage left unexplored.

Three short-cycle brownfield projects were initially under development in Block 17, with the aim of adding 150mn bbl to its total production and 100,000 bbl to its daily production. Additional exploration campaigns were also planned to unlock further resources, with two wells planned for drilling in 2020, yet likely to be postponed. Block 17 remains an integral player in Total's plans to boost its Angola production by 2023.

In June 2019, the ExxonMobil-led consortium operating Block 15 signed a production-sharing agreement that extended block operations through 2032. In addition, the consortium approved a multi-year drilling programme that will add 40,000 bbl to the block's current production upon completion by operator ExxonMobil. The project is expected to generate approximately 1,000 local jobs. New infrastructure technology is planned be deployed in the block, designed to increase the capacity of the existing subsea flow lines and increase output.

Additional changes to the production sharing agreement include changes in ownership. Under the agreement, ExxonMobil carries a 36 per cent stake and operates the block in partnership with BP (24 per ent), Eni (18 per cent) and Equinor (12 per cent). As part of the agreement, Sonangol will receive a 10 per cent equity interest in the block. ExxonMobil also holds stakes in three deep-water blocks covering nearly two million acres in Angola, which hold substantial development opportunities and a gross recoverable resource potential of approximately 10bn bbl of oil equivalent. Block 15 has produced more than 2.2bn bbl of oil since 2003.

WHAT NEXT FOR OIL AND GAS E&P COMPANIES?

The COVID-19 pandemic has had a major impact on the profitability of E&P companies across the world. While many US companies may require royalty relief to avoid bankruptcy, Africa's fortunes may hinge on licensing rounds going ahead. Georgia Lewis reports.

Image Credit: Adobe Stock

Oil price volatility this year has had a major impact on the bottom lines of E&P companies across the globe.

THE PROFITABILITY OF the E&P sector has been hard-hit by the COVID-19 pandemic. In the US, dozens of operators are still at risk of bankruptcy, even with oil prices making a recovery from the historic negative figures. Analysis by Rystad Energy found that that royalty exemptions could save the day for many of these companies.

Using the Gulf of Mexico as an example, Rystad Energy found that at an average WTI price of US$25 and without any shut-ins taken into account, the expected total royalty payment, given the production level, is equivalent to slightly more than US$250 million per month. If royalty relief targets the 31 smallest operators, which collectively operate 300,000 barrels of oil per day, the relieved royalties would amount to US$37 million per month. If royalty relief targets the 36 smallest operators, which collectively produce 640,000 barrels per day, that would equal US$82 million in relieved royalty payments.

"If these smaller players go bankrupt and their production is shut down, a lot more cash would be required to restart production by a potential new operator that picks up the lease. This would disincentivise operators from applying for these leases, resulting in an economically suboptimal result," says Rystad Energy's upstream analyst Joachim Milling Gregersen. "One of the proposals put forward to the US government is to exempt companies with less than 100,000 barrels per day production from paying royalties. If implemented, this initiative could contribute towards avoiding bankruptcies among the smaller independents and private equity-backed players."

> **"In the US, royalty relief could contribute towards avoiding bankruptcies among smaller independents and private equity-backed players."**

For Africa, despite relatively lower rates of COVID-19 compared with other continents, the future of the E&P sector could depend on whether planned licensing rounds go ahead. Royalty relief could provide a solution for existing E&P companies but only if governments are willing to take such a dramatic step to preserve the bottom lines of companies.

Licensing rounds are scheduled this year for Côte d'Ivoire, Algeria, Tanzania, Senegal, Somalia, Liberia, Ghana, Equatorial Guinea, Angola, South Sudan and Nigeria. In North Africa, Egypt is has solid prospects and open-door licensing, which might appeal to companies with significant free cash flow ready to invest.

Uganda has an ongoing licensing round which closes in September this year, including five blocks over 5,000 square kilometres. And Gabon's ongoing licensing round has already resulted in 12 production sharing agreements being signed with new and long-term players.

These hopeful signs indicate where investors might spend their money on promising E&P projects this year and into 2021.

MOVING LNG AND FLNG AHEAD IN TURBULENT TIMES

There are signs of hope in the LNG and FLNG sectors of multiple African markets. Georgia Lewis reports on industry optimism across Egypt, Equatorial Guinea, Mozambique and Nigeria.

ON A GLOBAL level, commercial and industrial gas demand is down in the wake of lockdowns imposed to try and mitigate the spread of COVID-19. Rystad Energy estimates global natural gas demand will fall by almost two per cent this year as a result of the drop in economic and industrial activity.

In absolute terms, Rystad analysts expect global gas demand to total close to 3,878 bbcm in 2020, down from 3,951 bcm last year. This is in stark contrast to Rystad's pre-pandemic estimates; this year's natural gas demand was expected to grow to 4,038 bcm.

However, low prices are helping protect gas demand to some extent as it remains more competitive than other sources of energy, especially in the power sector where gas use remains relatively stable in most countries.

"2020 will be the first year since 2009 where there will be no growth in consumption. This will be a hard blow for an industry accustomed to yearly growth rates of more than three per cent," says Rystad Energy's head of Gas and Power Markets Carlos Torres-Diaz.

As for the LNG and FLNG sectors, global liquefied natural gas (LNG) benchmark prices continue to fall due to oversupply. As such, LNG producers with short-run marginal costs (SMRCs) that exceed spot prices are looking to curtail production. However, producers can run into problems as liquefaction facilities are designed to operate at maximum capacity almost continuously with limited capacity to wind back production rates. According to Rystad, this is a technical and commercial issue – technical in that liquefaction facilities tend use gas-fired turbines which are difficult to run at different power loads; and commercial in that the marginal cost of production on-site is low, with the bulk of cost relatively fixed, propelled by power costs to drive the turbines.

An LNG facility under construction in Mozambique.

Image Credit: Saipem

> **"2020 will be the first year where there will be no growth in consumption, a hard blow for an industry accustomed to yearly growth."**

As a result, producing one unit of gas less does not result in a linear unit cost decline and could mean costs stay static.

This means LNG producers whose SRMC of production exceeds spot prices in a target market can really only fully shut down, partly shut down, or undergo uptime cycling.

The International Gas Union's

(IGU) latest report on LNG noted that the sector experienced six consecutive years of growth in which the LNG trade increased by 13 per cent to a total of 354.7 MT before the pandemic. In particular, the report noted that the floating storage and regasification unit (FSRU) sector was experiencing significant growth. Of the 37 existing LNG import markets as of February 2020, 19 imported LNG with FSRUs, and six of those had onshore terminals as well, the report found.

While the USA, Russia and Australia led the way in export growth and Qatar remains the leading exporter, North Africa showed promise with growth in Algeria and Egypt. In particular. Egypt was able to swing from being an LNG importer to an LNG exporter. Conversely, Equatorial Guinea was one of only three markets that saw a drop in export levels versus 2018.

Despite this drop, Equatorial Guinea remains one of the most ambitious countries in Africa, if not the world, when it comes to developing LNG capacity. The West African country has been a big exponent of the LNG2Africa initiative, along with declaring 2020 its Year of Investment, with a strong focus on its gas mega-hub project. The project involves major companies such as Vitol, Marathon Oil and Noble Energy, and it aims to pool stranded gas across the Gulf of Guinea by leveraging existing infrastructure at the Punta Europa plant. The plant has strategic facilities, such as EG LNG and Marathon's methanol plant. These sites have relied on feedstock from the Alba field but as the output here is on the wane, gas is being extracted from additional fields in the area. The LNG2Africa initiative's mission is "to build relationships and infrastructure that facilitates an intra-African LNG industry [to] provide power and industrial development", working with the public and private sectors. There is a strong focus on small scale projects to help bring power to areas with limited infrastructure.

Image Credit: Africa Oil & Power

Equatorial Guinea's LNG sector is pushing on through troubled times with low prices and the COVID-19 pandemic.

In Egypt, meanwhile, as reflected in the IGU report, the LNG sector continues to grow. In positive news for getting through this difficult global period, Svitzer secured a five-year extension of its current contract with Egyptian LNG to assist the Idku LNG plant with four tugs, two mooring boats and one pilot boat. In an additional show of confidence in the Egyptian market, last year Svitzer inked a 10-year contract with Suez Canal Authority.

For Mozambique, 18 June will be the next big day as Anadarko and the East African country's government have telegraphed that this will be the date of, in the words of President Filipe Nyusi, an announcement about "the most important and transformational projects in our country's history [being] ready to advance to the next stage." It is expected that this will be the announcement of the Final Investment Decision on the Mozambique LNG project.

Further positive news for African LNG came from Nigeria in May with the announcement of a joint venture comprising Saipem, Daewoo E&C and Chiyoda Corporation. The three companies have jointly been awarded contracts for the EPC of the Nigeria LNG Train 7 Project, which will be executed at Bonny Island LNG complex. The overall value of the contracts is more than US$4bn.

"The investment decision by Nigeria LNG Limited, which includes several important energy companies, demonstrates that natural gas, in whose value chain Saipem has a recognised leadership, will be pivotal to the energy transition," said Stefano Cao, Saipem's CEO. "The award of this contract contributes to increase the portion of non-oil-related backlog and confirms the overcoming of the link between Saipem's share value and oil price."

"Svitzer secured a five-year contract with Egyptian LNG and a joint venture for the Nigeria LNG Train 7 project, signs of confidence in the market."

Looking ahead, low natural gas prices could be a strong incentive for African gas producers to develop the LNG and FLNG sectors to help with industrialisation, which relies on reliable access to electricity.

But monetising LNG is essential to ensuring it plays a major role in industrialisation for power generation, as well as other applications, such as feedstock for petrochemicals. This would also help move power generation away from the more heavily polluting oil- and coal-fired plants. With the right investment and a determination to push on despite tough global conditions, the big ambitions of Egypt, Equatorial Guinea, Mozambique and Nigeria have the potential to yield wide-ranging benefits and boost access to energy.

LEAN, CLEAN AND DIGITAL

THE FUTURE OF OFFSHORE

Going digital is essential for offshore operations, especially in today's ever-changing environment. By Dean Arnison, subsea global product management executive and Mario Alonso Rincon, digital solutions product leader, Baker Hughes.

WHAT DO WE mean when we talk about digital? Current working conditions in all major business sectors have made that question more pressing than ever before, as desk-based workers get to grips with new digital tools. In heavy industries, including oil and gas, investments in automation have reduced dependency on human activity and face-to-face interaction, and are truly coming into their own.

This is largely because over the past 10 years or so, an operational climate has developed which favours solutions, tools and techniques that empower decision-makers; reduce human intervention; streamline use of equipment, chemicals and logistics; and build institutional memories.

In sub-sea operations, digital is often presented as the solution to the short and long-term challenges the industry faces:

- The need for operational efficiencies in the face of fluctuating cost models.
- An aging workforce that is retiring from positions of expertise and experience.
- More distant and deeper subsea activity.
- Demand for environmental protection from stakeholders, policymakers and the public.
- The need for safe operations and working conditions.
- A price environment subject to any number of external and internal shocks.

Image Credit: Zukiman Mohamad

Digital solutions are essential for optimising subsea operations which are often deeper and more distant than ever.

Defining digital

However, this doesn't really answer the original question. When we talk digital, what we're really talking about is data. How to extract it, manage it, understand it, share it, and act on it as quickly and efficiently as possible. How to turn years of experience and expertise into bits and bytes that can be widely disseminated and understood; and how to use previously unavailable information to build knowledge and insight.

In its broadest sense, digital comes down to sifting through complexity to bring the most useful data to the right user at the right time. It's about giving data context and clarity, and building highly usable tools around it.

And where humans meet machines, it's about turning data into images and intuitive interfaces to give users an all-knowing, all-seeing co-pilot to support operational decision-making. Digital has suffered from the sheer, overwhelming volume of data involved. We're all familiar with the term Big Data, but that now feels like an inadequate description. Even the more rudimentary digital systems can produce what might better be described as Gigantic or Colossal Data, and it is still sitting in different places, unconnected, in different formats, and lacking context.

Intelligent, evidence-based decision-making is tantalisingly, frustratingly close. But for many organisations, data is a caged giant: a barrier to insight rather than an enabler.

The life of field

This is where our concept of Life of Field Digital Solutions for subsea operators comes into play, just one of the many digital enablement aspects. We wanted to give our clients the tools they need to unlock that giant, and use it to power useful and operational systems – not just theoretical possibilities, or science-fiction gimmicks.

Our approach is based on a number of core concepts. We believe that making more intelligent, evidence-driven decisions is of value at every stage of an asset's or field's lifetime, and that digital solutions consequently need to take a long-term view. We know that as data flows increase, the ability to distinguish the signal from the noise becomes critical, and so the ability to sift through complexity to see the most critical information for a subsea system, is more than a short-term solution.

We recognise that when decision-making is powered by digital solutions, operators can be more focused on the future rather than assessing the past. Potential problems can be identified before they become critical, enabling operators to advance, defer or consolidate activities safely and efficiently.

We also know that digital solutions have to do more than bring intelligence, in a joined-up way, to operators. They need to be centred on individual users and the details of what those specific users need to do every day.

Finally, we are committed to the idea that digital is best designed, implemented, and supported by suppliers and consultants who understand not just the technology they are working with but also the context in which they are applying it. Digital is not an afterthought: instead it is integral from the initial design of a concept, manufacture, installation and finally operation.

Equipment integrity management – keeping flow in the pipe

Digital can prove transformative for onshore subsea engineers tasked with optimising asset uptime and availability while managing maintenance schedules and planning any necessary interventions, reporting on key metrics, efficiency targets and risks, and making investment recommendations.

The challenge here is the limited set of data to which they currently have access. Only a low percentage of subsea data from

As older workers retire in the oil and gas industry, digital solutions ease the transition to a new generation of employees.

distributed control systems (DCS) is available onshore, and although analysis and visualisation is critical, it is complex and time-consuming. Simplifying the decision-making process is operationally advantageous, but engineers need more evidence than they often have. The Baker Hughes solution for equipment integrity management is based on: Sensors that can be integrated with well, riser and subsea production system (SPS) equipment in a variety of locations to give a broader view; Agnostic application modules that can analyse and integrate data on equipment from any manufacturer; Customisable screens for onshore personnel so they can make decisions that are right for each site, project or asset; Practical advanced analytics, combined with our knowledge, expertise, and service advice, and amplified by considered use of artificial intelligence; Providing future-oriented analysis that can predict failure points and expected lifetime of equipment.

It supports live inventory management by automatically tracking past, present and future maintenance and recertification. It also accesses upgrade history and last-time-purchase advice to proactively alert engineers to upcoming equipment obsolescence. This is a solution that onshore engineers can adapt for a single asset or an entire fleet of wells. It ensures that they can develop and implement a standard for all subsea projects with the confidence of knowing that the system is being managed to industry standards.

Flow assurance management – keeping the pipe flowing

For production and flow-assurance engineers, data analysis is already fundamental to the job, from well testing to field characterisation. It requires a lot of what-if analysis to determine optimum operational set points, like minimum water production, or to optimise required chemical injections. Nonetheless digital solutions can make a big difference.

The problem here is primarily with the hardware. Subsea meters typically consolidate a number of measurements; certain metering types, like manifold mount meters, are not always available at every well; and subsea flow meters only provide point measurements – which means discrepancies get missed, just one meter failure can affect accuracy and analysing evolving trends is extremely difficult.

Specifying the best flow-assurance, risk-monitoring solution for a given project is a tough ask. Meters need to be selected before drilling commences, which can lead to lengthy cycle times, while radioactive sources, such as those in multi-phase flow metering (MPFM), can limit applicability.

Our analysts and engineers wanted to enhance production with accurate metering solutions that covered SPS infrastructure, wells and risers. We are developing a distributed flow-metering (DFM) solution that combines the best of virtual and physical metering, and which integrates measurements from downhole, trees, and the wider Subsea Product System (SPS).

By using the intelligence of multiple flow sensors to simplify the infrastructure, our clients can measure each well with only a water-cut meter at the tree instead of a bulky MPFM, while still securing accurate multi-phase flow measurements with optimised subsea instrumentation. With added analytics and expertise, the solution provides flow engineers with a whole-system view, allowing them to monitor conditions during operations, start-up and well cooldown and make recommendations on operational procedures. Overall, the solution lowers costs, shortens lead-times and removes flow-metering from the project-critical path.

Conclusion

Over the past few years, the industry has gone through a fundamental change: optimal production, minimal downtime, operational efficiency and environmental considerations are the pillars on which a successful operation will be built.

There will always be new challenges, new shocks, and new threats, but the three perma-challenges will remain: cost control, carbon emissions, and HSE risk. To face these challenges in their current and future forms, subsea operations will need to be smart. They will need to be lean, clean and digital. The technology is there. Now we need leadership to focus efforts on the most practical, valuable solutions to make this impact.

EAST AFRICAN CRUDE OIL PIPELINE PROJECT UPDATE

Streamlined ownership could help to drive progress on the US$3.5bn strategic East African Crude Oil Pipeline (EACOP) project. Martin Clark reports on the latest developments with this important addition to African hydrocarbons infrastructure.

Image Credit: Ecole Polytechnique/Flickr

Patrick Pouyanné has big ambitions for the project in line with Total's strategy of acquiring resources at a low cost.

THE EAST AFRICAN Crude Oil Pipeline (EACOP) is a strategic priority for landlocked Uganda, which is keen to export its hydrocarbon reserves out to Tanzania and beyond. The 1,443 km pipeline route will take Ugandan oil from Lake Albert, then tracks a route south of Lake Victoria and out to the Indian Ocean port of Tanga on the Tanzanian coast. But the idea has been repeatedly delayed, grinding to a halt last year amid tax disputes and the collapse of a proposed buyout deal between two of its major partners.

The news that Total has now agreed terms to take over partner Tullow Oil's entire interests in the Lake Albert development project – including EACOP – could help to kick-start the pipeline once more. The scheme groups China's CNOOC and state energy firms Uganda National Oil Company (UNOC) and the Tanzania Petroleum Development Corporation (TPDC).

Total said in April that it is paying Tullow US$575mn, with an initial payment of US$500mn at closing and US$75mn when the partners take the final investment decision (FID) to launch the project, although it is unclear when this will be. The deal means the French oil giant will acquire all of Tullow's existing 33.3 per cent stake in each of the Lake Albert project licenses (EA1, EA1A, EA2 and EA3A) as well as the proposed pipeline system. The transaction is still subject to approvals and to CNOOC's right to exercise pre-emption on 50 per cent of the transaction.

However, Patrick Pouyanné, Total's chairman and chief executive, hinted that the new, streamlined ownership structure would help drive forward the combined pipeline and oilfield development. "This acquisition will enable us, together with our partner CNOOC, to now move the project forward toward FID, driving costs down to deliver a robust long-term project," he said after announcing the transaction on 23 April. Pouyanné added that the acquisition fits with Total's strategy of acquiring long-term resources at low cost, with the Lake Albert development project deal working out at less than US$2 per barrel.

It will be welcome news for Ugandan officials. Last September all activities on the pipeline, including tenders, were suspended because of the collapse of the earlier deal between the two investors. The export pipeline remains critical to the nation's hopes. Uganda discovered crude oil about 14 years ago but commercial production has been delayed partly because of a lack of export infrastructure.

It may still face hurdles, including securing financial backing. The African Development Bank distanced itself from the project on 18 April after being linked to the scheme. The bank said in a statement that it "strongly rebuts claims that it plans to provide financial support to the East African Crude Oil Pipeline Project," and is keen to focus on renewable energy.

For Tullow Oil, it marks the end of an era. Despite problems progressing its plans, it was the early frontrunner in the country's energy sector, making a string of discoveries more than a decade ago to trigger a rush of new inward investment. In a statement, Tullow said it would "work closely with the government, Total and CNOOC over the coming months to reach completion [on the buyout deal] as quickly as possible."

DRIVEN BY DATA: THE ERA OF AUTOMATED FIELDS

In an industry that had already embraced automation, expect more to come in the wake of the pandemic as operators in Africa and across the globe embrace technology in a bid to slash costs. Martin Clark explores the latest advances in this exciting sector.


Image Credit: Adobe Stock

The potential for process automation technology across all sectors of the industry is enormous.

THE DEPENDENCE OF the oil and gas industry on automation has accelerated over the past decade in response to ever more complex processes, tough economics brought about by low pricing, as well as safety for human workers. Automation agives operators immediate access to performance, condition and technical data which speeds up decision-making, troubleshooting, and performance efficiency. That's a huge benefit on billion-dollar installations such as refineries and offshore rigs.

More looks set to come with research pointing to a near doubling of spending in automation and control systems over the coming years. One report, Oil & Gas Automation and Control System Market: Growth, Trends, and Forecast (2020-2025), expects the value of these areas to jump from about US$30bn to US$52bn by 2025. That represents a growth of some 9.8 per cent. While all forecasts are now subject to the effects of the pandemic influence – which is expected to wipe billions of dollars from capital budgets the world over – it is clearly an area the industry believes in.

The technology continues to advance to facilitate even more sophisticated automation. Siemens' product innovations this year include the Sitrans MS Multisensor, which is used primarily for the condition monitoring of mechanical plant components such as pumps, compressors, gears and valves. Through the AI-based analysis of sensor data, such as vibrations and temperatures, important information can be generated for predictive maintenance.

West Africa has proved fruitful ground for specialists in this niche. Last year, Intech reported progress on a number of flagship .projects including the completion of the control automation scope for a major platform upgrade offshore Nigeria. It announced a control and safety system upgrade in October for an undisclosed oil facility in Angola. In this case, that meant upgrading an older system owing to obsolescence and falling availability of spares and OEM support.

As well as control systems and automation, there is ongoing interest in other technologies that enable remote operations, an area where great cost efficiencies can be realised – a priority especially in the current price environment.

This includes unmanned drones and submersible devices that help to monitor and aid the inspection process. These vehicles are controlled remotely, and can broadcast live video feeds and data back to a central location anywhere in the world.

While the digital oilfield is not a new concept – operators have been deploying automation and control systems on vital assets for years – the drive toward automated workflow only looks set to increase as the world emerges from the Coronavirus health crisis.

> **"While all industry forecasts are subject to the pandemic influence, the industry believes in process automation technology."**

Image Credit: Adobe Stock

Remote working has come to the forefront during the pandemic, but the oil and gas industry was already ahead.

NEW INNOVATIONS FOR CRISIS COMMUNICATIONS

The offshore sector has long been dependent on robust communications, with the COVID-19 crisis now stirring interest in new, remote ways of working. Martin Clark reports.

MAINTAINING RELIABLE COMMUNICATIONS with rigs and platforms offshore is critical for all operators in Nigeria, Angola, and other producing territories. Not just for direct contact between workers engaged in decision making, but in the processing and flow of vast amounts of data generated by smart wireless devices and facilities all along the energy chain, from the wellhead through the pipeline and on to processing sites.

At each and every stage, technology is collecting and monitoring data to ensure the right decisions are made; this information can be the difference between a profitable field and a loss-making one.

With exploration and production extending into locations that are even more remote, further offshore, into ever deeper waters, the need for robust communications becomes even more vital. “This means that implementing industrial wireless technology is a must for businesses that need real-time information to reduce their non-productive time when facing extreme environments,” technology giant Siemens notes in a white paper.

Sometimes that means factoring in all the nuances of the oil and gas industry into the equation, such as the need for highly sensitive – and expensive – explosion-proof devices.

Siemens’ own industrial communications portfolio for the industry consists of the SCALANCE and RUGGEDCOM product lines. These are built for reliable, high-performance communication infrastructures designed to provide oil and gas clients with a range of network products from a single source. Fully integrated networks can be quickly and seamlessly deployed across all locations.

While oil and gas investment has been scaled back in the wake of the COVID-19 crisis, the fundamentals behind the communications segment remain strong. Indeed, some of the trends arising out of the pandemic will accelerate the global 5G network rollout, boosting overall infrastructure and capacity.

Remote technologies and working from home have likewise been proven during the COVID-19 outbreak, which will drive the trend toward more sophisticated communications. The big oil services giants, Schlumberger and Halliburton, both noted in their Q1 earnings calls this year that the current downturn could accelerate the adoption of such technologies.

“This is especially true for technologies that enable remote operations, which remains an area where great cost efficiencies could be realised with more efficient operations,” noted Rystad Energy in an analysis paper.

While COVID-19 has already accelerated remote operations due to the movement restrictions imposed in countries to limit the outbreak, it could further advance a much longer-term trend toward toward off-site working, upstream and downstream. Schlumberger underlined intentions of doubling down its digital strategy, while Halliburton, similarly, noted that demand for its cloud infrastructure services saw an uptick in April during the pandemic. Another leading industry services player, National Oilwell Varco, reported updates on its digital and communications technologies in its latest earnings call. Using its TrackerVision augmented reality technology, which streams real-time audio and video, it is able to provide instructions on rig repairs remotely.

Soon, this could be the new normal.

AFRICAN RIG COUNT

COUNTRY	April 2019	May 2019	April 2020	May 2020
ALGERIA	52	51	42	27
ANGOLA	5	5	7	0
CAMEROON	2	2	0	0
CHAD	7	7	7	6
CONGO	3	3	2	0
CÔTE D'IVOIRE	0	0	0	0
EQUATORIAL GUINEA	0	0	0	0
GHANA	8	7	5	4
KENYA	1	0	0	0
LIBYA	15	15	10	11
MAURITANIA	1	1	1	0
MOROCCO	0	0	0	0
MOZAMBIQUE	0	0	0	0
NIGERIA	1	1	0	0

Source: Baker Hughes

T.D. Williamson launches system for safe and rapid gas distribution pipeline isolations

T.D. WILLIAMSON (TDW), the global pipeline solutions provider, has introduced the POLYSTOPP Quick Connect system for the gas distribution market. Lightweight and easy to use, it allows operators to isolate a polyethylene (PE) line twice as fast as other methods while preventing the damage associated with squeezing.

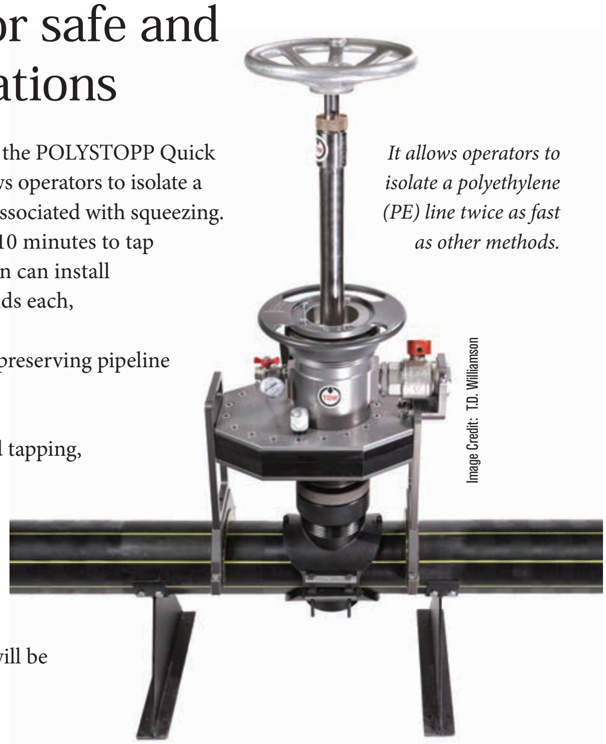
According to HT&P senior product manager Ryan Ragsdale, it takes less than 10 minutes to tap and isolate a pipeline with the POLYSTOPP Quick Connect system. The technician can install the tapping, plugging and completion machines onto the valve in around 20 seconds each, and removal is just as fast.

"Faster isolation dramatically decreases job time and increases efficiency while preserving pipeline integrity, which maximises value to the operator," Ragsdale said.

The POLYSTOPP Quick Connect system is extremely lightweight compared to previous solutions. All components are made of aluminum, including the valve and tapping, plugging and completion machines, making it light enough for a one-person lift operation.

This is the second cutting edge isolation product TDW has introduced to the gas distribution market in recent months. It follows the ProStopp DS isolation tool. a low-pressure double block and bleed technology.

The POLYSTOPP Quick Connect system is available worldwide for 4-inch through 8-inch pipelines up to 10 bar (150 psi). Technology for 12-inch pipelines will be available in the near future. To learn more, watch the video at https://tdwilliamson.wistia.com/medias/zarjknilwf.



It allows operators to isolate a polyethylene (PE) line twice as fast as other methods.

Image Credit: T.D. Williamson

Level measurement for harsh conditions

Image Credit: Magnetrol

The Eclipse Model 700 GWR transmitter.

MAGNETROL HAS LAUNCHED the Eclipse Model 700 Guided Wave Radar (GWR) transmitter. This new level measurement solution is designed to be virtually unaffected by changing media conditions, including turbulence, foaming, boiling and flashing.

"The Eclipse Model 700 continues our tradition of bringing innovative, high-ROI solutions to the market," said Bob Botwinski, senior global product manager at Magnetrol. "All Eclipse models are able to measure and control media in challenging applications with unprecedented accuracy while providing proactive diagnostics to the user."

Proactive diagnostics, like the Model 700's build-up detection feature, minimise maintenance costs by allowing engineers to proactively schedule shutdowns and maximise uptime.

Eclipse GWR solutions, including the new Model 700, are equipped for overfill protection through the industry-leading probe design that allows for level measurement across the entire probe length with a minimal dead zone.

The Model 700 features true level measurement and the market's highest signal-to-noise ratio, enabling it to achieve direct measurement of material levels, including liquids, foams, and solids – even distinguishing between liquid and foam layers.

Halliburton launches new downhole measuring system for safety and accuracy

HALLIBURTON HAS INTRODUCED DynaTrac Real-Time Wireless Depth Correlation System, a new technology that reduces uncertainty and saves rig-time by enabling operators to accurately position packers, perforating guns and the bottom-hole assembly (BHA) without running wireline or moving the work string.

The DynaTrac system takes static measurements to determine the position of the BHA before and after setting the retrievable packer. Operators can measure depth at any time while tracking changes in position to improve operational efficiency.

"We developed DynaTrac to provide operators with a safer and more accurate position of their BHA depth in real-time," said Daniel Casale, vice president of Testing and Subsea. "The technology reduces downhole uncertainty and improves reservoir insight while saving valuable rig-time."

Image Credit: Adobe Stock

DynaTrac is designed to provide operators with a safer and more accurate position of their BHA depth.

Through on-demand measurement of tool position, the technology reduces health, safety and environmental risks associated with performing wireline operations. Additionally, operators can configure the system to perform automatic position measurements to track BHA movement over time, which increases the accuracy and reliability of reservoir analysis.

BP and Bluware sign deal for improving the quality of deep learning technology

SUPERMAJOR BP HAS signed a deal with Houston-based oilfield software company Bluware which will enable it to improve quality and speed when delivering seismic interpretation products using the latter's deep learning technology.

Ahmed Hashmi, upstream chief digital and technology officer at BP, said, "BP recognises the significant impact advances in digital technology can bring, and we are pleased to implement Bluware InteractivAI, a new and innovative deep learning technology that will enhance the ability of our geoscientists to accelerate the interpretation of subsurface data."

Image Credit: Adobe Stock

The deep learning technology will help BP's geoscientists to accelerate the interpretation of subsurface data.

Large seismic data sets are difficult to move and use in workflows and time consuming to interpret. InteractivAI, powered by Bluware Volume Data Store (VDS) cloud-native data environment, enables the acceleration of detailed interpretation tasks. With this tool, geoscientists can train and correct deep learning results interactively, significantly improving structural interpretation workflows.

Dan Piette, CEO of Bluware, said, "BP recognises the significant impact advances in digital.

Weatherford introduces Velox wellhead system for improved efficiency

WEATHERFORD INTERNATIONAL PLC has introduced the Velox wellhead system, which locks in pressure integrity while enhancing safety and improving efficiency. Velox promises unmatched isolation between casing strings with quick-connect components that maintain pressure control, reduce potential leak paths, and minimise non-productive time during installation in many applications, including high-pressure, high-temperature, and sour-gas wells.

The Velox system expedites installation by enabling the packoff to be run in a single trip from the rig floor, which removes personnel from the cellar. The system reduces potential leak paths by eliminating conventional flange-to-flange methods and external lockdown screws.

Image Credit: Weatherford

The Velox wellhead system provides superior isolation between casing strings.

"The Velox wellhead system enables operators to lock in pressure fast," said Dean Bell, president, Drilling, Evaluation & Intervention, Weatherford. "Operators can run the upper and lower packoff assembly from the rig floor to isolate the annuli of multiple intermediate and production strings. Velox is best-in-the-industry for pressure control."

For further information see https://www.multivu.com/players/English/8413156-weatherford-velox-wellhead-system/

Rystad Energy launches Emissions Solution

E&P COMPANIES, INVESTORS, governments and other stakeholders are becoming increasingly focused on all elements of the energy transition, including emissions/carbon footprint within the oil and gas value chain.

Rystad Energy has developed a product line called Emissions Solution, which includes data, analytics and advisory services within the upstream, midstream and downstream segments. The line's first product offering, the EmissionsCube, enables users to benchmark countries and operators and perform detailed emission analysis of portfolios – incorporating data from the company's database.

Image Credit: Wildearth Guardinas/Flickr

The service enables detailed emission analysis of portfolios.

"We are releasing a unique dataset that will enable stakeholders to compare and contrast a key element to measure upstream companies' readiness for the Energy Transition: CO_2 emissions," said Rystad Energy CEO Jarand Rystad. "With this tool, we enable our clients to effectively benchmark and drill into any upstream company's footprint of such emissions.

"We are proud to play our part in the energy transition process and look forward to helping the oil and gas industry take an informed step forward towards a more emissions-conscious future."

Collaboration to accelerate maritime digitalisation

CLASSIFICATION SOCIETY DNV GL and technology leader ABB have signed a Memorandum of Understanding (MOU) to accelerate digitalisation in the maritime industry.

The MOU will see ABB and DNV GL work together on a "Digitalisation Roadmap", to examine how the maritime industry can benefit from the greater availability of data, interconnectivity of systems, data analysis, and new technologies such as AI (artificial intelligence) and machine learning. It recognises the power of new digital technologies to help shipowners and operators around the world optimise vessel performance, enhance quality, and deliver more secure and sustainable operations.

Knut Ørbeck-Nilssen, CEO of DNV GL – Maritime, commented, "At DNV GL, digitalisation has driven many of the new services and processes we have been working on to help our customers and improve our service delivery. Working together with ABB on this trend can help us explore its potential across the whole industry."

"Today, electric, digital and connected technologies are driving innovation in the marine industry at an unprecedented pace," said Juha Koskela, managing director, ABB Marine & Ports. "Collaborating with DNV GL on the next steps in shipping's digital journey, we look forward to opening up new opportunities for customers and empowering them to achieve increased gains in safety, efficiency and sustainability through digitalisation."

Drone inspection illustrates the next step in automation

A COLLABORATION BETWEEN Scout Drone Inspection and DNV GL has resulted in a successful live aerial inspection of a 19.4 m high oil tank on board a Floating Production, Storage and Offloading (FPSO) vessel.

The video shot by the drone was interpreted in real-time by an algorithm to detect cracks in the structure.

Scout Drone Inspection and DNV GL have been working together to develop an autonomous drone system to overcome the common challenges of tank inspections. Using a drone in combination with an algorithm to gather and analyse video footage can significantly reduce survey times and staging costs, while at the same time improving surveyor safety.

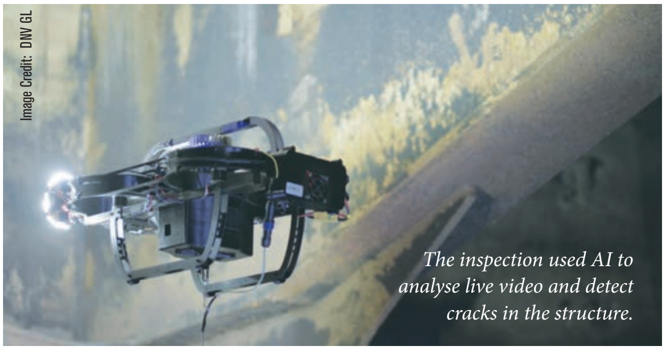


Image Credit: DNV GL

The inspection used AI to analyse live video and detect cracks in the structure.

Geir Fuglerud, director of Offshore Classification at DNV GL – Maritime said, "This latest test showcases the next step in automation, using AI to analyse live video."

The drone, developed by Scout Drone Inspection, uses LiDAR to navigate inside the tank, which creates a 3D map of the tank and all images and video is accurately geo-tagged with position data. During the test, the drone was controlled by a pilot, but as the technology matures it will be able to navigate more and more autonomously. DNV GL has been developing artificial intelligence to interpret the video to spot any cracks, and eventually the camera and algorithm will be able to detect anomalies below the surface such as corrosion and structural deformations.

Altera Infrastructure hosted the test on Petrojarl Varg. The video was livestreamed via Scout Drone Inspection's cloud-system back to Altera Infrastructure's headquarters in Trondheim, where the footage was monitored by engineers. DNV GL can also simultaneously watch the footage, opening up the possibility for stakeholders to work together from different locations.

ADVERTISER'S INDEX

NOW IS THE TIME TO INVEST IN AFRICA

Joe Watson Gakuo, CEO and host of the Oil & Gas Virtual Summit, is keen to promote the positives which Africa has to offer investors and local hydrocarbons operators. He spoke to *Oil Review Africa*'s managing editor, Georgia Lewis.

SPEAKING TO OIL Review Africa from his home in Nairobi, Joe Watson Gakuo, CEO and host of the Oil & Gas Virtual Summit, highlighted the importance of all industries, "not just oil and gas" adapting as the COVID-19 pandemic has changed the world.

"There was BC – before Christ – and now there's BC – before COVID – and after COVID," he said. "Everyone needs to adapt to new ways of working."

He said this may include many companies deciding not to go back to traditional office work because of the savings that can be made with employees working from home, thanks to technology such as video conferencing.

For the African oil and gas industry, Gakuo said that now is a great time for African companies to plan and prepare for when the oil price picks up again. The tight border controls which have been imposed to help contain the spread of COVID-19 across the continent, along with strict visa requirements which can hinder travel between African countries may seem "draconian", he said – but he was quick to add that this can be turned into a positive. With travel across borders at a standstill, combined with a low rate of infection in many African countries, Gakuo said smart companies should use this time to train local people. He said this is especially important as it has become harder for the foreseeable future to bring expatriates into Africa in large numbers.

Joe Watson Gakuo is passionate about creating a positive investment environment for African oil and gas.

"Companies may have bought themselves some time, maybe 12 or even 24 months," he said.

Mr Gakuo noted that while the exact figures for COVID-19 infections in Africa may be higher than official figures, many countries acted fast early, making it attractive for investment.

"Africa is doing better than many other countries, even if some people seem disappointed that millions of Africans are not dropping dead," he commented, adding that the continent has good capacity for dealing with pandemics, especially after ebola outbreaks.

> **"For anyone eyeing an African asset, now is a good time to look for a good deal. Africa is doing better than many other countries."**

"There was a double crisis in the oil and gas industry because of the virus and the oil price … but it will recover."

He envisages two scenarios – first, smaller companies which may be struggling could be acquired by or merged with bigger companies; and second, projects that have been delayed will have some time to prepare to operate better when they restart.

"For anyone eyeing an African asset, now is a good time to look for a good deal," Gakuo said.

With the Oil & Gas Virtual Summit, which will be held online from 6-10 July, Gakuo said the aim is to create collaboration among stakeholders along the entire value chain. He said the focus is on solutions with all players having a responsibility to work with each other to find ways to overcome the impact of the COVID-19 crisis. The event will feature speakers from across the industry, with a programme covering a broad range of sectors and subjects, such as exploration, big data, upcoming projects and investment opportunities, health and safety, women in the industry, and local content development.

www.upstreamawards.lpages.co/oil-gas-virtual-summit-2020/