

Oil · Gas · Petrochemicals

Oil Review

Africa

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Making progress in the Gulf of Guinea

Smart pipelines for improved lifecycle management

The latest trends for boosting safety in oil shipping

The benefits of leasing or buying used equipment

Event previews: Valve World, ONS Norway, East Africa Oil & Gas Summit, Tanzania Oil & Gas Congress



Marine Platforms hits important milestones offshore. (p24)

FIXED LINE SYSTEMS

by

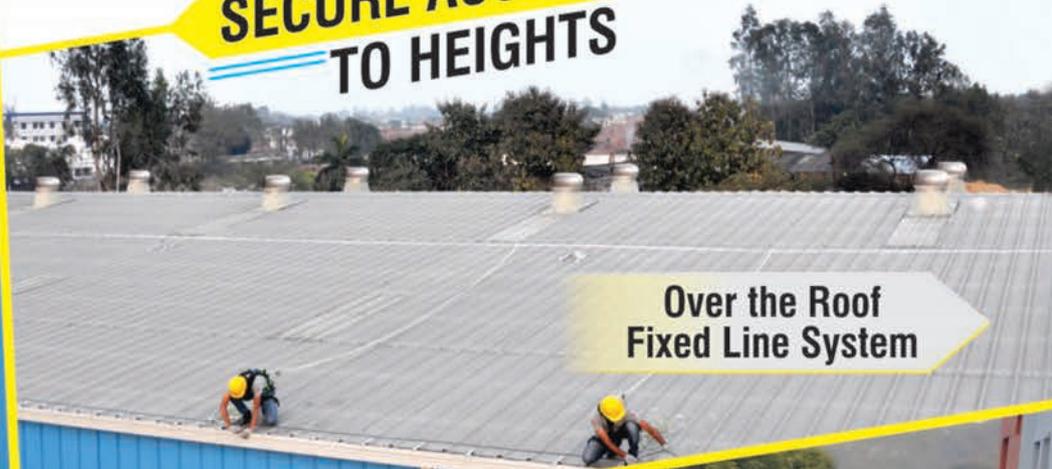


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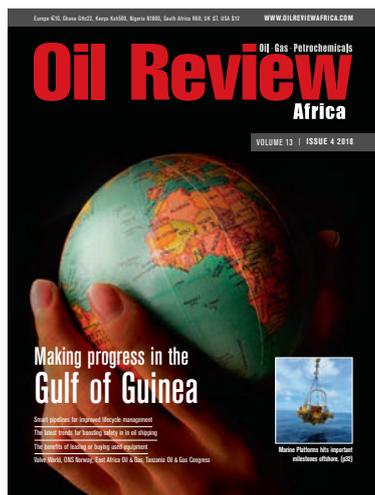


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The latest developments from the markets of the Gulf of Guinea. See page 16.

EDITOR'S NOTE

While the more established African oil and gas markets, such as Nigeria, Angola and Ghana, attract headlines and scrutiny, it is important to pay attention to the emerging markets across the continent – today's smaller markets can easily become tomorrow's major players with the right investment as well as geological good fortune. In this issue, we look at the latest developments in Equatorial Guinea, Gabon, Congo and Côte d'Ivoire, where there are challenges, opportunities and plenty of reasons for optimism (p16).

This issue of *Oil Review Africa* has a strong technical and operations focus. From digital developments in recruitment and staff management (p27) and pipeline maintenance (p28) to the latest valves which offer improved fire safety (p29), it is clear that keeping abreast of technology is essential for success in today's competitive oil and gas markets.

Georgia Lewis
Managing Editor

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AUGUST

27-30 ONS Norway
Stavanger
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SEPTEMBER

19-20 Uganda International Oil & Gas Summit
Kampala
www.uiogs.com

24-25 Tanzania Oil & Gas Congress
Dar es Salaam
www.cwctog.com

OCTOBER

9-11 ECOWAS Mining & Petroleum Forum & Exhibition
Abidjan
www.ametrade.com/ecomof

NOVEMBER

5-9 Africa Oil Week
Cape Town
www.africa-oilweek.com

12-15 ADIPEC
Abu Dhabi
www.adipec.com

21-22 Ghana Summit
Accra
www.cwcghana.com

27-29 Valve World Expo
Dusseldorf
www.valveworldexpo.com

27-30 ERTC Global Petrochemicals Summit 2018
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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

East Africa Oil & Gas Summit celebrates five-year milestone

AT HOTEL INTERCONTINENTAL in Nairobi, on 14-15 June, leading figures in the international energy industry discussed the latest opportunities and challenges, within oil and gas across East Africa.

Speakers at the East Africa Oil & Gas Summit (EAOGS) included Tina Nduta, managing director at Eimara Africa Resources, Andrew Kamau, principal secretary of Ministry of Energy & Petroleum in Kenya, and Emma Wade-Smith, regional trade commissioner for Africa for the UK Department for International Trade (DIT). More than 350 delegates from 200 institutions and 30 countries gathered at EAOGS this year.

EAOGS created a platform for companies to present their innovations to major decision makers from around the world. With East Africa's rapid advance

towards commercial oil and gas production, the event was timely and showcased the myriad opportunities for investment in this very promising market.

Many delegates were successful in gaining support for the development of their oil and gas-related products and services and established new connections.

For the first time ever, EAOGS partnered with The Upstream Oil & Gas Awards to host an award ceremony at this event. The awards, endorsed by Kenya's Ministry of Energy and Petroleum, brought everyone at the event together, to honour the great achievements of companies and individuals within the oil and gas industry.

There were engaging workshops on Critical National Infrastructure (CNI), conducted by Control Risks. These demonstrations supplied in-depth understanding of CNI



The SKS Dokka, a Norwegian oil tanker, has docked in Kenya.

Image Credit: Pixabay

protection and their application to help build national resilience. It was taught through experience-based lessons from the United Kingdom, Africa and the Middle East using relevant case studies.

James Mureu, chairman, Kenya National Chamber of Commerce said: "The content was very good and very relevant

and at this formative stage. We've picked up a lot of information that can help us map a clear way forward. I'm very grateful to the organisers and I will definitely be back next year, ... it's an event everyone must attend if you are really interested in oil and gas."

For more information, log onto <http://eaogs.com/>



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Valve World to showcase fire-safe technology for the oil and gas industry



Last year's Valve World attracted a large crowd across all days.

Image Credit: Valve World

GERMANY WILL HOST the Valve World Expo, on 27-29 November in Düsseldorf. More than 700 exhibitors from around the world are expected to attend. Innovations across all sectors of the industry will be showcased: valves, valve-related goods, publishing companies and engineering services. South Africa is to be represented by Paltechnologies, a business that manufactures quality valves and offers advanced valve

technology, for oil, gas, power and petrochemicals.

Due to the rising demand of fire-safe valves, innovations of this field will be displayed at the exhibition. Companies cannot go without fire-safe valves as they have to ensure that their products are certified and high-quality. Fire-safe valves are crucial in the oil and gas industry, because the risks of fires are very high. These innovations are important in

providing protection to make conditions less hazardous.

Last year, 98 per cent of visitors left the event satisfied. The trade fair gave them the platform to network with professionals, and the conference enhanced their technological knowledge and assisted the visitors in improving their skills.

For more information, log on to www.valveworldexpo.com

SDX Energy discovers more gas in North Africa

SDX, THE NORTH Africa-focused oil and gas firm, has announced another gas discovery at South Disouq in Egypt with the SD-3X well. The well was drilled to TD at 7,842 ft, and encountered 32.6 ft of net pay across the Abu Madi and Kafr El Sheik intervals, with average porosity of 22 per cent.

This marks the second discovery in the 2018 appraisal drilling campaign, and the third successful well on the South Disouq license. The well will be completed and tested in the principal Abu Madi interval, before re-entry and completion in the Kafr El Sheik interval. The discovery well encountered gas across two horizons, and the company see the presence of gas in the Kafr El Sheik as adding to the potential across the license.

Influential Tanzanian oil and gas congress event returns to Dar Es Salaam in September

ON 24-25 SEPTEMBER, Tanzania's industry leaders will be speaking at the Tanzania Oil and Gas congress, held at Hyatt Regency Dar Es Salaam, The Kilimanjaro. Among these speakers are: Dr Hamisi H Mwinyimvua, the permanent secretary in the Ministry of Energy; Her Excellency Samia Suluhu Hassan, the Vice-President, Tanzania and Eng. Kapuulya Musomba, the acting managing director of Tanzania Petroleum Development Corporation.

The programme provides a platform for the showcasing and promotion of major investment opportunities within the Tanzanian oil and gas industry. Her Excellency Samia Suluhu Hassan said it the event is "an opportunity to engage in meaningful discussion that will end up with identifying opportunities resulting from investments in the oil and gas sector and also clarify solutions on how the sector can specifically underpin the development of our country."



The event is a great opportunity to experience Tanzanian culture.

Image Credit: CWCT Group

Last year, the congress proved to be very successful, with the support of leading government bodies including the Ministry of Energy, Tanzania Petroleum Development Corporation, PURA and Energy & Water Utilities Regulatory Authority. It is a well-attended event as leaders such as Eng. Kapuulya Musomba view it as "the most established oil and gas event in Tanzania".

On the first day of the event, the Tanzania Oil & Gas Gala dinner will be held. Here, delegates can network with

oil and gas experts. Across the two days, between sessions, there will be further networking opportunities with senior government officials and top industry players. Thirty-seven per cent of the attendees are expected to be at GM/director/president/ chairman level.

For more information, log on to <https://www.cwctog.com/>

Nigeria and Mozambique dominate SSA capex

A TOTAL OF 64 planned and announced crude and natural gas projects are expected to commence operations in sub-Saharan Africa (SSA) during the period 2018-2025, according to GlobalData, a leading data and analytics company.

Among these, 20 represent the number of planned projects with identified development plans and 44 represent the number of early-stage announced projects that are undergoing conceptual studies and that are expected to get approved for development.

Nigeria lead the ways in terms of the number of oil and gas projects in sub-Saharan Africa with 23 projects expected to start operations during the period 2018-2025, according to the report, which was released in August.

GlobalData's report also includes the recent trends and opportunities in Africa's oil and gas market. These include Africa's oil and gas production outlook, planned and announced projects count, details of major planned and announced crude and natural gas projects in sub-Saharan Africa. Angola and Cameroon are also cited in the report as two promising African markets for capex on planned and announced projects.

GlobalData's analytics in Africa's oil and gas industry ranges from well-site and pipeline issues to upstream, midstream and downstream.

In its latest analysis of global planned isomerisation capacity of refineries, GlobalData shows that Nigeria contributes 15 per cent of global isomerisation capacity, with China having the highest capacity globally.

Bureau Veritas issues new guidelines for conversion of existing LNG carriers

SOUTH AFRICA-BASED international certification agency Bureau Veritas has issued new FSU notations and guidance to support the construction and operation of Floating Storage and Regasification Units (FSRUs) and Floating Storage Units (FSUs).

"There are more than 20 LNG carriers presently in laid-up condition. Many of them are candidates for conversion to floating terminal applications, such as FSRU or FSU operations. The new conversion guidelines provide clear advice to the LNG industry in properly addressing issues that either will or may arise during the conversion of LNG carriers into FSRUs or FSUs, helping ship owners to either avoid or to overcome potential problems," said Bureau Veritas.

Matthieu de Tugny, chief



Image Credit: keas tom/ Flickr

LNG carriers are changing the global gas market.

operating officer at Bureau Veritas for marine and offshore, commented, "With growing interest in floating gas terminals, working with industry stakeholders, we are providing the rule framework and guidance necessary to develop both FSRU and FSU terminals for new

buildings and conversions."

"Last November, Bureau Veritas published NR645, the first rules document fully dedicated to FSRUs. These new notations and guidelines are further evidence of BV's classification leadership in both FSRUs and FSUs," de Tugny concluded.

Saipem wins FEED contract for Uganda's oil and gas refinery

SAIPEM HAS RECEIVED a new front end engineering design (FEED) contract to build and develop a new refinery in Hoima, Uganda. The award was made by the Albertine Graben Refinery Consortium, which is comprised

of Baker Hughes General Electric (BHGE), YAATRA Africa, LionWorks Group and Saipem SpA.

Also involved in the agreement are the Uganda Ministry of Energy and Mineral

Development (MEMD) and the Uganda National Oil Company (UNOC).

The refinery, designed for a capacity of 60,000 bpd of crude oil, is expected to ensure a hub for refined products for the East African market.

According to Saipem, the refinery is predicted to start operation by 2020. The project aims to create greater independence for the domestic Ugandan market and reduce imports of oil and refined products from other countries. The contract sees an important positioning for Saipem in East Africa, a geographical area where the company has no consolidated markets, which traditionally have been located in North Africa and West Africa.



Image Credit: Jephthah/Wikimedia Commons

An oil and gas refinery will help create jobs and diversify Hoima's economy.

Sonangol extends the deadline for oil block bids

SONANGOL EP, ANGOLA'S national oil and gas company, has extended the period of the data showrooms for Blocks 20/11 and 21/09 until 31 August 2018.

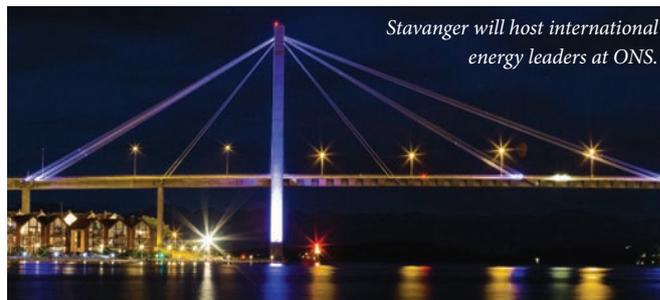
In a statement, the company said the extension, which applies to companies which submitted letters of interest by the end of July 2018, was in the scope of the process of partial divestment of the participatory interests held in the aforementioned blocks and at the request of several interested companies.

As a result of this extension to the data showrooms period, the deadline for the delivery of binding bids for the acquisition of participatory interest, as well as the position of the operator, has been extended until 30 September 2018.

In February, Sonangol announced plans to sell stakes in oil blocks and several local banks, which was in line with the company's aims to recover from the crude oil market slump, reflecting a period of change in Angola's hydrocarbons sector.

International energy industry leaders to convene in Norway for ONS

STAVANGER, NORWAY, WILL host ONS from 27-30 August, with top executives and state leaders in the international energy industry speaking at the event, including Alexandra Bech Gjør, president and CEO of SINTEF, and Amrita Sen, chief oil analyst at Energy Aspects. At the last event, 65,718 visitors of 100 different nationalities attended and 92 per cent of visitors say they will come back for ONS 2018. There are opportunities available to younger generations at the event. Eldar Sætre CEO of Equinix said, "I see the 'ONS



Stavanger will host international energy leaders at ONS.

Image Credit: David Sunshiner/Flickr

YOUNG' programme as a key part of the whole event. Tomorrow's leaders are young people today. It's crucial for the entire energy industry to ensure that we continue to attract the brightest young minds, who can

bring fresh approaches to tackling the challenges we face in bringing affordable and sustainable energy to a growing world population."

For more information, log on to <http://www.ons.no/>

Uganda summit to focus on exploration, production and sustainable development

THE 4TH UGANDA International Oil & Gas Summit (UIOGS), from 19-20 September 2018, will welcome more than 360 attendees from across 125 national and international companies. The conference will focus on the future of oil and gas exploration and production in Uganda, implementing the government's long term vision for sustainable development.

Last year's event brought together private sector partners and other stakeholders, to present their innovations, successes and challenges that they have experienced in this field. Speakers in the 2017 programme included His Excellency President Yoweri Kaguta Museveni, and Hon. Eng. Irene Muloni, Minister of Energy & Minerals, Uganda, Ministry of

Energy and Mineral Development. Uganda is seeking to develop the oil and gas industry under a stabilised government, while using cost-effective methods for oil extraction. This year's event will pinpoint the future steps on the roadmap to 2020 production.

For more information log on to <http://uiogs.com/>



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Eni begins gas production from OCTP, offshore Ghana

ENI HAS STARTED gas production from the Sankofa field in the Offshore Cape Three Points (OCTP) Integrated Oil and Gas Project, in Ghana.

The field is expected to provide 180mn scf per day for at least 15 years, which is seen as sufficient to convert to gas for the half of Ghana's power generation capacity. Production started from two of the four deep-water subsea wells connected to the Floating Production, Storage and Offloading (FPSO) vessel "John Agyekum Kufuor."

After commissioning of the offshore facilities, production will gradually flow via a dedicated 60km pipeline to the Onshore Receiving Facility (ORF) in Sanzule, where gas will then be compressed and distributed to Ghana's national grid.



Image Credit: Eni/Flickr

The OCTP project has gone from strength to strength.

Ghana National Petroleum Corporation will support Eni on the further steps to ensure gas delivery to the Ghanaian market reaches its expected volumes in the shortest period of time, noted Dr KK Sarpong, CEO of GNPC.

Claudio Descalzi, CEO of Eni, commented, "OCTP gas will contribute to Ghana's energy stability, which is a prerequisite for industrial and economic growth, while at the same time helping reduce harmful emissions."

Aker Energy aiming to achieve first oil for the Pecan project in 2021.

WORKING TOWARDS A submission of the Plan of Development (PoD) for the Pecan project in the DWT/CTP block (also known as the Aker North block), where Aker Energy is the operator, teams from the

Ghana National Petroleum Corporation (GNPC), Ghana's Petroleum Commission and Aker Energy met to find a common understanding on the collaboration form and the actions needed to be taken to

achieve the ambition of first oil in fourth quarter of 2021.

A workshop included speakers from Norwegian government bodies and services companies. They shared insight into collaboration on the Norwegian Continental Shelf. Attendees were given an introduction to the business model of Aker BP and the design and effects of the alliance model Aker BP has implemented, as well as experiences in collaboration from Aker Solutions, Kvaerner and Maersk Drilling. Jan ArveHaugan, CEO of Aker Energy, said: "We have a firm belief that first oil in 2021 is possible to achieve, but it requires both hard work and transparent communication to reach all critical milestones."



Image Credit: Aker Energy

The workshop incorporated knowledge-sharing between Ghana and Norway.

University of Ghana signs MOU with GNPC

THE UNIVERSITY OF Ghana has signed a Memorandum of Understanding (MOU) with the Ghana National Petroleum Corporation (GNPC) with the objective of establishing a research chair in petroleum geoscience at the university.

In an address to mark the occasion of the signing, the Vice-Chancellor, Professor Ebenezer Oduro Owusu explained that the MOU is aimed at strengthening petroleum geoscience research, capacity building and supporting the optimal exploration, delineation and development of Ghana's hydrocarbon resources.

Professor Oduro Owusu mentioned that the chair will not only facilitate the sustainable development of the nation's hydrocarbon deposits but also provide a reference point for developing similar technical capacity in other oil and gas markets across Africa.

He said that this agreement ties in with one of the university's strategic priorities which relates to partnerships and collaborations. The Vice-Chancellor added that the Institute of Applied Science and Technology was established to bridge the gap between academia and industry.

Dr. Kofi Koduah Sarpong, CEO of GNPC, mentioned that Ghana's offshore basin had plenty of hydrocarbon potential hence the need to advance technology.

In conclusion, he indicated that GNPC Foundation, the CSR arm of the Corporation, seeks to contribute to society using three main pillars; Economic Empowerment, Education and Training and Environment and Social Amenities.

Petroleum growth helps investor confidence in Ghana

THE CONFIDENCE OF investors, within the petroleum sector has increased since Ghana's victory over Côte d'Ivoire at the ITLOS tribunal. Following this decision, many investors have expressed an increased interest in the development of Saltpond oilfields.



Image Credit: Eni

Oil and gas is boosting Ghana's economy.

This optimism is reflected in Ghana raising \$2bn in its first ever Eurobond. This money is earmarked for creating jobs and strengthening infrastructure. Other positive economic indicators include inflation decreasing month-on-month, lower interests rates, and a reduction in electricity tariffs for several stakeholders.

Ghana achieves positive risk-reward score in leading index

INCREASED POLITICAL STABILITY, improved commodity prices and effective public economic reforms led to an improvement of the risk-reward score in several West African economies, according to the 2018 Africa Risk-Reward Index from Control Risks and Oxford Economics.

Ghana leads these positive developments for West Africa, recording the strongest improvement in its risk-reward score in Africa, after Zimbabwe and Egypt.

"Since coming to power in January 2017, Ghana's government has continued to undertake a programme of macroeconomic reforms which have focused on reducing the deficit and external debt," said Tom Griffin, senior partner for West Africa, Control Risks. "In the last year, this had a particularly positive impact on issues such as credit and exchange risk. At the same time, Ghana has attempted to improve the business environment for investors by reducing the bureaucratic and taxation burden, as well as laying out plans for further investment activity in the oil and gas and manufacturing sectors."

The report offered further insights into other African markets with Angola, under new leadership, not improving its reward score but achieving a reduced risk score. Additionally, an improved regulatory environment points to improved investor confidence in oil and gas.

Senegal is benefiting from growing investment and reduced risks thanks to growing exports, a diversified economy and increased interest from large international investors as a result of the promising offshore oil and gas discoveries along side neighbouring Mauritania. The report describes Senegal as "one of the poster children in sub-Saharan Africa."

In Nigeria, the Economic Recovery and Growth Plan has begun to tackle challenges, including corruption and an infrastructure deficit. The plan seeks to remove bottlenecks to improve the ease of doing business, and boosts investors' confidence.

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Shell signs two oil blocks contract offshore Mauritania

SHELL EXPLORATION AND Production Mauritania BV has signed two production sharing contracts with the government of Mauritania for the exploration and potential future production of hydrocarbons in the offshore blocks C-10 and C-19.

“This move represents Shell’s entry into the West African Atlantic Margin exploration basin, which has significant potential,” said Andy Brown, upstream director of Shell.

Commenting on the northwestern African nation’s oil and gas agreement, the Mauritanian minister of oil, energy and mining, Mohamed Ould Abdel Vetah, said, “Shell’s

new entry in the Mauritania offshore area represents an important added value to the exploration activities and will contribute to maintaining the momentum for developing the energy sector in Mauritania.”

Following government approvals of contracts, Shell will set up an office in Nouakchott and start reprocessing and analysis of existing seismic data and acquisition of new data.

Shell will operate the programme with a 90 per cent interest. Société Mauritanienne des Hydrocarbures et de Patrimoine Minier, the national oil company of Mauritania, holds a 10 per cent interest.

Unique Group forms JV for West African oil and gas

UNIQUE GROUP HAS formed a joint venture with Nigeria-based Charkin

Maritime & Offshore Safety to provide oil and gas services in sub-Saharan Africa.

The JV, Unique Charkin System, is based out of Port Harcourt in Nigeria.

The partnership will create a dedicated office for Unique

Group in the region, bringing enhanced accessibility and reduced response time for customers. The company’s divisions, namely, Survey



Training at a Charkin facility.

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BP, Eni and Shell outperform their peers: Rystad Energy

A RYSTAD ENERGY review of the performance of their recent projects against those of other operators shows that the three European oil giants, BP, Eni and Shell have outperformed their competitors.

Since 2014, these companies have collectively achieved greenfield costs of US\$13.50 per boe. These development costs were in addition to their collective US\$8.80 per boe lifting costs from 2017.

Matthew Fitzsimmons, vice-president at Rystad Energy,



Image Credit: Shell/Flickr

Shell's Bonga North West deepwater project.

commented, "It is remarkable that BP, Eni and Shell introduced more than US\$109bn of new greenfield projects below the industry average greenfield cost and still were able to still achieve industry-leading lifting costs in 2017."

Libya's Bahr Essalam gas project starts production

MELLITAH OIL & GAS, a joint venture between Eni and Libya's NOC, has started production from the first well of the offshore Bahr Essalam Phase 2 project.

This comes just three years after the final investment decision. An additional seven wells will come onstream by October 2018. Phase 2 completes the development of the largest offshore producing gas field in Libya, increasing production potential by 400 mmscfd. This phase will be completed between September and October, bringing total field production to 1,100 mmscfd. Bahr Essalam, located about

120km northwest of Tripoli, contains more than 260 bcm of gas. This is delivered through the Sabratha platform to the Mellitah onshore treatment plant before being used to supply the national network.

Fayez Al-Saraj, chairman of the Presidential Council of Libya, commented, "The opening of Phase 2 of the Bahr Essalam offshore project will definitely add true value to the national economy. In the past, we missed huge investment opportunities due to the lack of budget. However, today we are committed more than at any time to encourage investment in the oil sector."

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TechnipFMC reports positive results for Libya, Angola, Mauritania and Senegal

IN ITS SECOND quarter results for 2018, TechnipFMC, including a total company revenue of US\$2,960.9mn. Among the highlights for the year so far were positive developments in multiple African markets.

On the Mellitah Bahr Essalam subsea project in Libya, a deep Arctic vessel is completing tie-ins of spools and testing scopes on Phase 1, allowing commissioning to commence.

On Angola's Total Kaombo subsea project, Skandi Africa completed a hook-up campaign on the FPSO.



The Kaombo FPSO is important to Angola's fortunes.

In regard to the Total E&P Angola Zinia Phase 2 subsea project, TechnipFMC was awarded a contract for the EPC of equipment including subsea trees, wellheads, control systems and connection systems.

In Senegal and Mauritania, Africa's newest oil and gas markets thanks to a significant offshore discovery, TechnipFMC has been awarded the FEED contract for the FPSO unit for the Tortue/Ahmeyim development.

For this project, TechnipFMC will work on defining the technology and equipment scope.

The agreement provides a mechanism to allow a transition of the contract to an engineering, procurement, construction, and installation contract at a later stage.

Young African talent recognised by Eni

ENI HAS ANNOUNCED the winners of the 11th edition of the Eni Award. The award reflects the importance of scientific research and innovations. The Young Talent from Africa Award was awarded to Emerance Jessica Claire D'Assise Goma-Tchimbakala of the Marien NGouabi University of Brazzaville and Elvis Tinashe Ganda, a Zimbabwean student at Durban University of Technology. Goma-Tchimbakala's project focuses on the effect of microorganisms and metabolised synthesised substances on environmental rehabilitation.



Dripro oilfield Services Limited has been focusing on oilfield completion tools Research, Development, Manufacturing and Installation services for more than 11 years. It has successfully developed series of unique completion tools with its patents. API has awarded Q1 and 11D1 certificates to it since 2015.

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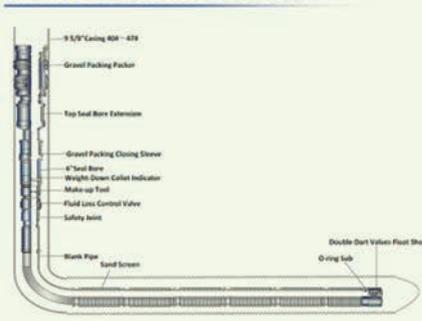
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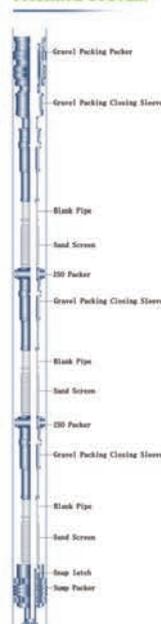
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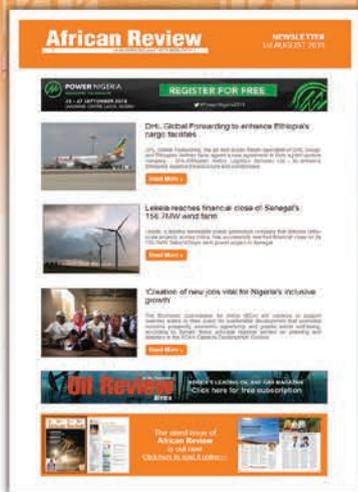
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Offshore resources in the Gulf of Guinea have potential in terms of exploration and revival of existing operations.

Image Credit: Adobestock

EMERGING FROM THE OIL PRICE SLUMP IN THE GULF OF GUINEA

The low oil price environment placed a heavy burden on hydrocarbon-driven economies across the Gulf of Guinea. But across the region, there is a renewed sense of optimism and ambition – and investment is following. Georgia Lewis reports.

WHILE NIGERIA, GHANA and Angola are the more established players in the hydrocarbons sector along the Gulf of Guinea coastline, there is significant activity, as well as challenges and opportunities, across Equatorial Guinea, Gabon, Côte d'Ivoire, Cameroon and Congo-Brazzaville. There is a renewed sense of optimism with oil prices recovering, and governments across the region are keen to attract investment, exploit new discoveries and revive existing oil and gas operations to boost flagging production levels.

Equatorial Guinea

Equatorial Guinea, an OPEC member, has experienced mixed fortunes in its bid to become a major hydrocarbons player in the region. In March this year, the International Energy Agency announced that the country's crude oil production is on a "downward slope" with capacity expected to fall by around 15 per

cent in the next six years to 110,000bpd – peak output was reached in 2004 at 300,000bpd.

Additionally, exploration license-holder Ophir Energy announced in March that first gas from its Fortuna LNG project would be delayed until 2022 owing to issues in regard to securing finance. However, Fortuna has almost enough resources to meet British gas demands for a year, so the ambition for Equatorial Guinea to set itself up as an LNG hub in the area remains strong. The country has produced LNG for more than a decade, so the Fortuna project is seen as the next big step in developing that particular sector.

Kosmos Energy, already active in the nascent Senegalese and Mauritanian markets, has acquired, along with Trident Energy Management, fields operated by Hess – it is hoped these acquisitions will help stem a decline in production.

Under the leadership of Gabriel Obiang Lima, Minister of

Mines, Industry and Energy, Equatorial Guinea has joined OPEC, giving it a louder voice at the international negotiating table despite the relatively small output. He has been encouraging other African oil producers to join OPEC and, via initiatives such as LNG2Africa and partnerships with other African countries, the minister is pushing a pan-African agenda.

“ It is hoped that acquisitions in Equatorial Guinea by Kosmos and Trident will help stem a decline in production ”

Gabon

At the end of 2017, an International Monetary Fund (IMF) report on Gabon found the country's economic performance

under the Extended Fund Facility arrangement was "broadly satisfactory". The IMF report found that oil had been underperforming during the oil price slump but a recovery in oil prices, which has continued throughout 2018 so far, should lead to growth. However, economic diversification away from oil was recommended.

From the report: "The authorities should aim to mobilise non-oil revenues, which have dropped to historically low levels. While part of the decline is due to negative spillovers from the oil shock and strikes by tax officials, the authorities need to accelerate reforms to scale back the excessive use of ad hoc tax exemptions, and address weaknesses in tax and customs administration."

According to the US Energy Information Administration, Gabon, an OPEC member, produces about 200,000bpd of crude oil. Production peaked in 1997 at 370,000bpd. In June this year, Vaalco Energy was able to

report some positive news on production with maintenance work on the Avouma 2H offshore well being completed and now producing at higher rates than before the shutdown. Cary Bounds, the company's CEO, announced that Houston-based Vaalco is considering development drilling off the coast of Gabon in 2019.

Repsol, along with its partner Woodside discovered oil in the Ivela-1 exploration well located in the Luna Muetse (E13) offshore block, according to seismic surveyors Spectrum Geo. Repsol has an 80 per cent working interest in the block after buying a 3D marine seismic campaign in 2015. Woodside has equity in four coastal exploration blocks in Gabon, including Luna Muetse. The company has completed the processing of the second azimuth of multi-client 3D seismic data for the Doukou Dak (F15) block and completed exploration in the Likuale block.

Côte d'Ivoire

With proven oil reserves of 100mn barrels and gas reserves of 1.0 tcf, Côte d'Ivoire has great potential to be a significant offshore producer. In July 2016, Petroci, the state-owned oil

company, announced ambitions to almost double oil production by 2020 to 200,000bpd and attract further investment from IOCs. Côte d'Ivoire has been an oil producer since 1980.

In 2015, President Alassane Ouattara was elected for a second five-year term, and this has helped the country maintain stability since the end of the civil war in 2011. A maritime border dispute with Ghana was settled last year and, even though the ruling favoured Ghana, Côte d'Ivoire can now look ahead to make the most of its hydrocarbons reserves.

While there are risks for IOCs if funds are ploughed into expensive, deepwater exploration, the Ivorian Petroleum Code offers a number of incentives with production sharing agreements, services contracts, investment credits for deepwater and ultra-deepwater exploration and the further opening up of blocks for exploration.

Developing the downstream sector has become a priority, with agreements signed between the government, the national oil refinery complex SIR and Petroci. This was welcomed in the most recent report on Côte d'Ivoire by the IMF.

Early this year, Tullow agreed terms to add a further two exploration licences in Côte d'Ivoire to its portfolio, blocks CI-520 and CI-524. Block CI-524 sits alongside the maritime border with Ghana, alongside Tullow's TEN fields, which have proven very successful. Initially, 3D seismic data will be re-processed to determine whether a well will be drilled. Block CI-520 will complete Tullow's coverage of a transform basin fault play built during 2017. A full tensor gradiometry gravity survey across 8,600 sq km is planned before acquiring seismic in 2019.

“ Gabon, Côte d'Ivoire and Cameroon have received positive economic news in reports from the International Monetary Fund”

Cameroon

A sharp decline in Cameroon's oil production last year contributed to a 3.2 per cent deceleration in the country's overall economic

growth, according to an IMF report. However, there are some bright spots in the Cameroonian oil industry.

In May this year, it was announced that New Age Cameroon Offshore Petroleum spudded the first of two appraisal wells on the Etinde offshore license area, which has tested oil and gas condensate. Bowleven Oil & Gas has a 25 per cent interest in the license, with New Age and Lukoil each holding 37.5 per cent interests.

At the time of writing, the notifications from Cameroon's latest licensing round were expected to be announced. The licensing round started in January 2018 and bids closed in June. Licenses for eight blocks are available - Bomana, Bolongo and Bakassi in the Rio del Rey Basin, Etinde Exploration, Ntem, Elombo, Tilapia and Kombe/Nsepe in the Douala/Kribi-Campo Basin.

In regard to gas, Victoria Oil & Gas has reported promising seismic results from the Logbaba Field in Cameroon. This follows evaluation of the results obtained from seismic reprocessing, incorporation of the production history from existing wells and completion of the 2017



OPEC membership is important to Equatorial Guinea and Congo, boosting their international profile.

development drilling campaign to deliver Logbaba La-107 and La-108. Proven 1P reserves to all the wells drilled into Logbaba were revised to 69bcf, an increase of 73 per cent and remaining 2P reserves revised to 309bcf, an increase of 52 per cent. The reserves/production ratio has increased to 10yrs at 90mmscf/d which supports growth in the Douala market and will underpin new long-term gas contracts, and a full field reservoir development plan is in preparation to locate future development wells.

It is hoped that new interests will help Cameroon's oil industry recover – in 2017, 16.86mn barrels of crude oil were sold, compared with 20.51mn in 2016, a 3.65mn barrel decrease. Despite this, Cameroon remains one of central Africa's largest economies, producing around 180,000 bpd of oil as well as being the continent's fourth-largest cocoa producer.

Kevin Foo, Victoria chairman said, "Importantly, this will now enable us to market larger volumes of natural gas on a longer term contractual basis to buyers, providing them with the security of supply they require. We are actively negotiating Gas Sales Agreements for these projects and we will provide updates when appropriate."

Congo

Another new OPEC member in the Gulf of Guinea, Congo has also suffered during the oil price slump. Like Equatorial Guinea, Congo is seeking a bigger voice on the global oil stage via OPEC membership, as well as access to information and possible partnerships.

Congo remains vastly underexplored with almost 2bn barrels of proven crude oil reserves. Total is among the players seeking to capitalise on this and increase the country's production from 280,000 bpd to 350,000 bpd this year.

With Brazzaville as the host city for the headquarters of the



Eni's Djena Power Station in Congo is powered by gas from the M'Boundi and Marine XII fields.

African Petroleum Producers Organisation, Congo is enjoying a rising status among the continent's oil producing nations, as well as looking towards boosting the gas sector.

According to analysis from NJ Ayuk, CEO, Centurion Law Firm, Congo has been "expanding its bilateral relationships with the likes of Angola, Nigeria and Equatorial Guinea, moving towards a new policy of gas utilisation."

Ayuk says: "The election of Thérèse Goma to the position of director general of hydrocarbons in March is an example of a change in mentality, as is the ascendance of Jean Marc Tchicaya to the position of hydrocarbons minister – a younger and more dynamic figure than any of his predecessors."

There is also an interesting foreign policy angle to Congo's bid to play a bigger role in Africa and globally, according to Mr Ayuk: "Congo's bid for integration within the cartel also comes at a paramount moment for African foreign policy, as dependence in commodity prices and shifts in the international order have made ever more

apparent the need for regional and intra-continental cooperation. African leaders are finally waking up to the fact that their international stand will not depend on the bilateral agreements they can reach with the likes of the US or China, but on their ability to cooperate and seek continent-wide agendas that can benefit Africa as a whole."

By the end of 2017, the signs were already there that Congo could be on the verge of an oil and gas revival. Eni found the Nene Marine gasfield in shallow water 17km off the Congolese coast back in 2012, and production now has the potential to reach 150,000 boed in the coming years, according to an Eni spokeswoman.

Total started Moho Nord, Congo's biggest oil venture with the capacity to produce 100,000 bpd. The project is being developed in water depths between 450 and 1,200 metres, and Total plans to connect 28 subsea wells to two floating production units with an extra 17 wells developed from a tension leg platform. The Banga Kayo onshore oil field, run by China's Wing Wah Petrochemical, is

expected to add 50,000 bpd to Congolese oil production, according to the government.

Conclusions

The low oil price environment adversely affected oil and gas economies across the Gulf of Guinea region. On top of this, different countries experienced their own challenges, such as the maritime border dispute between Cote d'Ivoire and Ghana. However, with an upturn in the oil price and a renewed commitment to attracting investment and reviving flagging production levels, there are signs of hope for the industry across the gulf.

With Equatorial Guinea and Congo seeking to have their voices amplified on the global oil stage via OPEC membership and big international companies investing in new projects or reviving established ones, ambition is being matched with finance from some big players.

Political stability will still play an important role in ensuring projects come to fruition, and governments will be keen to promote their respective countries as being investor-friendly. 🔥

GLOBAL OIL AND GAS STORAGE MARKET PROJECTED TO GROW

With reports on the future of the world's oil and gas storage largely positive, Africa, with its mix of established and emerging markets should benefit from significant investment in the storage sector. Georgia Lewis reports.

THE GLOBAL OIL and gas storage market is projected to grow with the US, Saudi Arabia, Russia and Japan leading the way, according to a report by Esticast Research which valued the market at US\$8.43bn in 2016. The market is projected to reach US\$10.38bn by 2022, growing at a CAGR of 2.6 per cent between 2017 and 2024. In the US alone, the market was worth US\$2.51bn in 2016.

Across Africa, storage projects are taking shape in anticipation of further development. Nigeria is, unsurprisingly, still attracting the lion's share of oil and gas investment in Africa. A GlobalData report revealed that the west African country accounts for US\$48.04bn worth of investment between 2018 and 2025 – or 24.8 per cent. Nigeria, as a long-term industry player, already has extensive storage infrastructure, but storage capacity continues to increase

“ In 2016, the global oil and gas storage market was worth around US\$8.43bn – and this is projected to grow in the years to come”



Image Credit: Gnanagan/Wikimedia Commons

Oil storage demand is set to increase globally, including in Africa, in the coming decade.

with projects such as Egina nearing completion – by January 2019, it is expected that Egina will have storage capacity for 200,000bpd with the FPSO delivered from South Korea.

Floating storage solutions are bolstering operations elsewhere in Africa. Total announced that the deepwater Kaombo block, off the coast of Angola, will start producing oil later this year with the Kaombo Norte FPSO vessel departing Singapore earlier this year. It has the capacity to pump 115,000bpd, which is half the block's production of 230,000bpd.

In South Africa, the Oiltanking MOGS Saldanha

(OTMS) project is slated for a 2019 completion date, with work having started in 2016. It comprises a storage and blending facility with 12 concrete, in-ground fixed tanks, each with a capacity of 1.1mn barrels. The Saldanha Bay storage hub is strategically located for shipping near the Cape of Good Hope, a more attractive shipping route for many companies than the Suez Canal, which cannot handle large oil carriers, or Bab el-Mandeb, a major chokepoint in an area affected by pirate activity and the ongoing conflict in Yemen.

Meanwhile, in Mozambique, development of the country's

emerging gas industry continues apace, with Anadarko receiving government approval this year to develop an offshore gas field. The Texan company will build a plant at an expected cost of around US\$15bn to produce LNG from 2022 or 2023. The storage facility at the plant reflects the ambition of the project, with its capacity of 5.99mn tonnes per year.

With promising exploration news coming out of Namibia and Senegal and Mauritania set to join the list of Africa oil producers in the coming years, the demand for storage should increase, and investment will be required to meet the needs of multiple markets. ♦

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ALTERNATIVES TO BUYING NEW EQUIPMENT

Is the future of equipment purchase for the African oil and gas industry in leasing and buying used rather than new? Georgia Lewis looks at the benefits of leasing and buying secondhand for different markets across the continent.

Multiple parts of an oil or gas installation can be repurposed after decommissioning.



Image Credit: pixabay.com

OIL AND GAS operators can potentially save money by leasing equipment or buying good quality used equipment.

When oil prices were at historic lows in recent years, it made obvious economic sense to lease rather than purchase brand new equipment and, for some operators, leasing continues to make sense even with oil prices on the rise, particularly in new oil and gas plays.

One of the obvious benefits of leasing equipment is that operators can take advantage of the latest technology while retaining some fiscal flexibility. Instead of making an expensive upfront purchase and jeopardising cashflow, a lease splits the costs into smaller, more

manageable payments. Depending on the jurisdiction, there can also be tax advantages to leasing equipment.

“ By leasing equipment, operators can take advantage of the latest technology while retaining fiscal flexibility”

Interest rates can be a factor in determining the viability of taking out a lease. While interest rates are high in Angola and Ghana at 18 per cent and 17 per cent respectively, lower rates in

markets such as Mauritania, Tanzania and Uganda (all at around nine per cent at the time of writing), can make leases as well as loans for financing projects more attractive. In the Democratic Republic of Congo, Gabon and Equatorial Guinea, interest rates are around 2.95 per cent, among the lowest in Africa.

Within Africa, there are certainly opportunities for equipment leasing businesses seeking to serve the oil and gas industry. According to a report by the US International Trade Administration, Nigeria is the only country in the world in the top 30 oil and gas equipment export markets. Additionally, Nigeria is ranked 37 out of the top 50 countries in the world based on a leasing volume of

US\$1.2 billion based on the White Clark Groupe's 2017 Global Leasing Report. It is one of just four African countries to make the list.

The US report singled out Senegal and Mauritania as two of the biggest potential markets for oil and gas equipment thanks to the massive discovery off the coast of both countries. If the benefits of leasing equipment are sold to these markets, there could be opportunities, particularly with massive infrastructure projects required for both markets to go into production.

In 2016, Senegal imported US\$76mn worth of equipment from around the world, the majority of which is derricks, light vessels and drill pipe. The most recent figures available

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from Mauritania are from 2014 and showed that US\$970mn in oil and gas equipment was imported, and a fourfold jump was recorded between 2012 and 2013. The main equipment purchased in Mauritania were floating production platforms, parts for derricks, and boring and sinking machinery.

South Sudan is another country which has benefited from equipment leasing in recent years. Since 2013, the Africa Leasing Facility (ALF) has supported South Sudan in creating a favourable environment for leasing.

The ALF helped Africa's newest nation to draft the its finance leasing law, which is under consideration. The team trained approximately 100 leasing stakeholders – including more than 40 of which came from the Chamber of Women Entrepreneurs and the Federation of Business and Professional Women.

“Independent inspection of used equipment can help ensure peace of mind for the buyer and the seller”

In May last year, Dr Ibe Kachikwu, the country's minister for petroleum resources, included equipment leasing as part of the four-year National Economic and Growth plan. The plan includes opportunities which Dr Kachikwu said were worth “in excess of US\$50bn” and this included earmarking up to US\$1bn for equipment leasing, as well as US\$2.5-5bn for refinery construction and refurbishment.

The International Finance Corporation (IFC), a member of the World Bank launched a programme to promote leasing in Sub-Saharan Africa. Launched in May this year, Africlease aims



Image Credit: Forest and Kim Starr/Flickr

Responsible equipment refurbishing for the secondhand market prevents assets ending up as scrap metal.

to encourage leasing across multiple sectors.

With used equipment, whether the operator is buying or leasing, certain factors need to be taken into consideration, such as financing. Many leasing companies will still provide finance for used equipment along with the usual protections for customers.

Ensuring the equipment is of a high standard is also important for secondhand buyers as well as sellers. Independent inspection of used equipment can help ensure peace of mind. A good inspection should identify the real market value of the equipment so the buyer can be assured they are paying a fair price. Life expectancy and remaining durability should be assessed as well as whether the equipment complies with the market in which it will be used or its final export destination. In Brazil, India and Vietnam, for example, inspections are mandatory and while this is not necessarily the case in African markets, it is still important to ensure used equipment meets high safety and

environmental standards, and has been properly maintained.

Decommissioning represents an opportunity not only for operators to sell off used equipment but also for buyers to pick up assets at a more affordable price. In January this year, for example, SEA and Spirit Energy collaborated to recycle redundant but operational third-generation subsea production equipment from Spirit Energy's Ann field in the North Sea. SEA is refurbishing the equipment for sale as part of their Legacy Locker programme.

“We operate at the sharp end of subsea production control support and regularly deal with the problems created by obsolescence and asset transfer between operators,” said SEA Subsea engineering director Matt Blair. “Our knowledge and experience of key components and systems enables us to selectively source valuable equipment and components which unfortunately many operators are sending directly for scrap because it is easier.”

Looking ahead, the market for

rented and used oil and gas equipment is expected to grow across Africa as companies seek to widen their reach in new areas, particularly as oil production in established markets, such as Nigeria, has been gradually decreasing. Africa is still the final frontier for oil and gas and, while North America leads the global oil rental market, the continent will provide many opportunities as the number of exploration wells drilled increases.

And despite decreased production in Nigeria, Nigerian operators seeking to meet local content requirements in terms of ownership of assets may look to the secondhand market for equipment purchases.

The local content act – the Nigerian Oil and Gas Industry Content Development Act – was passed in 2010 and this required indigenous operators to demonstrate ownership of equipment. The cost savings offered through buying good secondhand equipment may prove attractive to many operators, even with a more buoyant oil price. ♦

MARINE PLATFORMS SHINES ON, AGBAMI HITS A MILESTONE

Deepwater projects have proven to be very successful for Marine Platforms.



Image Credit: Marine Platforms

Marine Platforms has gone from strength to strength in its subsea projects – and the Agbami deepwater field in Nigeria is a particular example of its offshore success.

MARINE PLATFORMS COMMENCED its subsea support services on Chevron's Agbami field on 1 March 2009 with Star Deepwater Petroleum Limited, the joint venture company of Chevron and the Nigerian National Petroleum Company (NNPC). The company was awarded the Star Deepwater interim intervention vessel charter contract to provide life of field installation and subsea intervention services on the Agbami field, which is the largest deep-water producing field in Nigeria, operating at water depth of 4,500ft/1,500 meters.

Tasked with the scope to

deliver a crewed multi-purpose vessel for intervention, repair and maintenance (IRM) as well as light construction support services, Marine Platforms deployed the Siem Marlin for the execution of this project. The Siem Marlin, a multipurpose remotely operated vehicle (ROV) support and light construction vessel arrived at the field in 2009 immediately after being built. She came with a 100t crane, 69-man accommodation and was equipped with two 150 HP work class ROVs. Siem Offshore owned the vessel while the ROVs were owned by Canyon Offshore.

Facing the unavailability of skilled personnel, Marine

Platforms ensured that Nigerian trainees were engaged to understudy the expatriates undertaking major operations. While the trainees gathered hands-on experience offshore and were sent abroad for classroom training, Marine Platforms ploughed back all its profitability into the company for material capacity development.

A year later Marine Platforms purchased her first ROV and others followed, two of which replaced the then existing ROVs owned by third-party strategic partners, Canyon Offshore. In March 2012, after several seasons of self-denial and deferred gratification, Marine Platforms

was able to purchase her first multipurpose platform support vessel, The African Vision.

Not resting on its laurels, Marine Platforms continued to plough back profit to further build human and material capacity. In 2014, the African Inspiration, a US\$112m dollar multipurpose vessel with 250t crane and 120-man accommodation was purchased from Havyard shipyard Norway. While she was being built, Marine Platforms shortlisted 15 indigenous greenhorn engineers from the Maritime Academy of Nigeria, Oron to begin intensive training as engine cadets and officers at the vessel build facility,

Havyard shipyard in Leirvik, Norway. The intent was to ensure a robust familiarisation process of the vessel's technology and grow with the build of the vessel up to its completion stage.

As the 2009 contract came to the replacement stage, Marine Platforms participated in an open bid and emerged as the new contract winner while still operating as the incumbent contractor. Pursuant to the new award, Marine Platforms delivered the newly purchased vessel, the African Inspiration, to take over from the Siem Marlin. At this point, MPL had grown a robust operational track record that saw the installation of several xmas trees, jumpers and varying subsea equipments across the 42 wells on the Agbami field.

In the same year, Marine Platforms won a competitive tender for the brownfield deep-water construction contract to carry out a subsea tie-back for the Agbami field. The scope centered on the transportation, installation and pre-commissioning (TIP) of flexible flowlines, jumpers, umbilicals and manifolds.

The company deployed the Polar Onyx, an offshore construction vessel (OCV) with 250t AHC Crane, 270t top tension Vertical Lay System (VLS) and reel drive system. All engineering and project management work was carried out in Marine Platforms Lagos office by a combination of MPL engineers and a technical partner, PDI. This was a significant milestone for Marine Platforms and a first by a Nigeria company because projects like this were ordinarily executed by the major subsea construction companies.

The Agbami Phase 3 project yielded many successes. Not only was it completed ahead of schedule and had no lost time incident, Chevron had significant cost savings against budget and production increased significantly.

Jeffery Ewing, the managing director of Chevron Nigeria said: "One of the partnerships we are really proud of is Marine Platforms. One of the things that they have done is to go from a locally competitive contractor to a globally competitive contractor.



Image Credit: Marine Platforms

Technology is vital.

They did the first installation in Nigeria of subsea manifolds, well head and flowlines. They did it at half the price of a global

competitor. They did an excellent job of building their capabilities in country because they were training their own people and making sure they were capable of doing the types of work we needed in the future... so that's the kind of partner we are looking for."

Besides the quality service delivery and track record established, Marine Platforms made significant progress in the development of human capacity. All from trainee levels, more than 31 cadets, one second officer, two third officers and 40 ROV supervisors and pilot technicians were trained.

At unplanned occasional periods, Marine Platforms has a fully working local ROV team manning operations on various systems. Most significantly, the company has achieved two million working hours without lost time incident on the Agbami field service operations. This remarkable milestone was achieved in second quarter of 2018. ♦



Image Credit: Marine Platforms

A strong local content focus.

TECHNOLOGY TRENDS FOR OIL SHIPPING

There are three technology trends shaping tanker industry safety and they are making a real difference on a global level.
Martin Clark reports.

OIL TANKER SAFETY is back in the spotlight. When the Panamanian-flagged Suez max crude oil tanker Sanchi collided with the Hong Kong-flagged cargo ship CF Crystal in January this year, it led to one of the worst tanker incidents for several decades.

After burning for more than a week, the Sanchi eventually sank off the coast of Shanghai, China. The entire crew of 32 died in the incident, which was also the worst tanker spill in 35 years, according to the International Tanker Owners Pollution Federation.

Oil shipping transportation safety represents a global challenge, rather than an African one, but it has been a wake up call for all parties involved. The underlying safety record in oil shipping is very good.

In terms of total losses by type of vessel worldwide, only 16 tankers were lost between 2008 and 2017, according to Lloyd's List Intelligence Casualty Statistics, out of a grand total of 1,129 ships; more than half the losses were general cargo or fishing vessels. But all the underlying threats remain, while others have come more into greater focus, including fire, which was the cause of loss for three of the 10 largest vessels lost in the past year.

"Tanker safety has improved significantly since a number of



Image Credit: Victor/Flickr

Technology is making the oil tanker sector, already a relatively safe aspect of operations, even safer.

major pollution incidents led to improved ship design and improvements in risk management in the 1990s," a recent report by insurers Allianz states. "However, the large loss of life on board the Sanchi is likely to focus attention on the adequacy of fire protection for crew." The report, Safety & Shipping Review 2018, also charts a number of other key trends shaping the industry, from the use of drones to the emergence of autonomous shipping.

Drones: Unmanned aircraft systems are finding a growing number of applications in the maritime sector, which could have the potential to make a significant contribution to safety

and risk management, the report states. These include assessing environmental pollution, monitoring cargo loading and pirate activity along coastlines or carrying out cargo tank inspections. Drones could enable faster, more informed decision-making on board, reducing the impact of any incident.

Cyber threats: This is an area the industry is taking seriously in the wake of the NotPetya cyber-attack of 2017, which led shipping giant Maersk to suspend operations and reinstall thousands of infected servers and computers organisation-wide. The International Association for Classification

Societies plans to publish guidelines covering cyber security practices in the shipping industry by the end of 2018. Last year, the International Maritime Organisation issued guidelines and called for cyber risks to be addressed in existing safety management systems by 2021.

Autonomous shipping: Like driverless cars, there is great interest around the world in crew-less vessels. These could one day, potentially, play a role in the energy shipping sector. However, legal, safety and cyber security issues are likely to limit the growth of such vessels for the foreseeable future, the Allianz report states. ♦

DIGITALISATION IN OIL AND GAS: IS IT WOWING THE WORKFORCE?

Airswift's panel in discussion – Janette Marx, CEO, Airswift; Hannah Peet, managing director, Energy Jobline; Stephanie Rogers, managing director, resources, Accenture; and Tony Salemme, VP, Craft Labour Risk Assessment Group, Industrial Info Resources.

The 2018 GETI report found the oil and gas sector is excited about digitalisation. Should employers should focus more on digitalisation than pay to attract fresh talent?

HP: Digitalisation can be a strong selling point for workers when the benefits are made clear. As the GETI report showed, greater opportunities for remote and flexible working are very much in demand, with four in 10 respondents citing it as key to attracting fresh talent to the sector. Companies that offer flexible working are very much at an advantage in attracting talent.

JM: Digitalisation offers a lot of room for growth. Data analytics and machine learning will transform humdrum processes into more agile and dynamic activities. People have the opportunity to be upskilled into new roles where they'll be intellectually stimulated and have more room for advancement.

Is there still a divide between the potential of digitalisation and what's achievable?

SR: This is a good strategy, considering that many of the job candidates for flexible and remote working are typically onshore and office-based.

TS: Remote workers that are too far away from their respective



Digitisation empowers women in the workforce.

sites aren't in the best position to serve those projects. Companies will still have to make sure they are making talent investments in the physical locations where they have assets.

HP: There's no way the industry can afford to overlook flexible working. It's essential to closing the skills gap and, more

counterparts. Likewise, men want to play a more active role in raising their children. In offering flexible working, oil and gas companies are showing their commitment to providing a supportive environment for workers and their families.

TS: It has amazed me how, after 35 years of working with information and technology, that people still don't respect their power. There are still plenty of companies who make the minimal investments when it comes to big data and technology. It's really a cultural issue, rather than a budgetary one. A lot of pushback from employees is that working with technology is just "another task that gets thrown on top of my workload." They see new applications are being outside of their job scope and try to pass it off. They can't see how it works for them. Another issue is that firms aren't willing to assess where they are lacking skills. Especially the big companies – they think there is nothing new to learn. Honest self-assessment should be happening throughout the organisation.

SR: And of course, digitalisation isn't about job reduction, but job evolution. ♦

<https://www.getireport.com/download-report/>

MAINTENANCE AND REPAIR FOR SMART PIPELINES



Image Credit: Pixabay

Pipeline corrosion can be prevented by using the latest innovations in smart technology.

As almost every aspect of the industry embraces smart technology, intelligent pipelines are becoming commonplace in operations around the world. Martin Clark examines the rise of digital technology in the lifecycle management of pipelines.

CORROSION IS ONE of nature's more destructive forces, weakening metals in no time at all. When it comes to oil and gas pipelines, the lifeblood of the energy industry, that's a major problem. If left untreated, this natural chemical process can cause a pipeline to weaken or potentially fail, resulting in lost output, downtime and high repair costs, underscoring the need for strong pipeline integrity management.

Many of Africa's pipelines have been performing their task underground, above ground, or even at sea, for decades. And, unfortunately for engineers and operators, corrosion is just one of the many threats they face in maintaining asset integrity.

Unfortunately, recent studies suggest that industry is failing to keep up with the challenge.

New research from DNV GL reveals that 46 per cent of senior professionals in the oil and gas

sector believe there has been underinvestment in inspection and maintenance of infrastructure and equipment in recent years. The increased digitisation of pipelines, plant and processes could be the answer. This technology has already helped oil and gas companies improve safety monitoring systems, data analytics and determine which processes, areas and equipment are more accident-prone, from pipelines to all other parts of the energy chain. This has led to the rise of the so-called 'intelligent pipeline', using digital technology and sensors to effectively and accurately monitor the condition of an asset round-the-clock. Such technology is now deployed on many pipelines in Africa's major oil producing states.

In Nigeria, UK-based Silixa installed its intelligent pipeline surveillance system on a 52 km

stretch of a crude export pipeline. The aim is to provide uninterrupted surveillance to detect both leaks and also identify breaches of pipeline security, another challenge particularly in the restive Niger Delta area.

Silixa's technology was deployed by Xenergi Ltd, its local partner in Nigeria, running a single fibre optic cable adjacent to the pipeline with a monitor and control system at either end within the control rooms. Another UK-based firm that has worked on intelligent inline inspection projects in Africa is NDT Global. In a recent white paper, it charts the emergence of ultrasonic technology in delivering the most accurate and reliable data for pipeline integrity management.

"For the inspection of liquid pipelines, ultrasonic tools offer specific advantages with regard to resolution as well as to measurement accuracy," it states.

The shift to digital technologies in helping operators maintain pipelines is only set to increase, according to DNV GL. Over the next five years, 76 per cent of respondents in its research say they will invest more in digitalisation as a means to improved safety and better performance.

"For years, oil and gas companies have produced large volumes of data that has been crunched regularly to demonstrate compliance with safety regulations through quantitative and qualitative safety studies," says Koheila Molazemi of DNV GL's oil and gas division. "Digital technologies are now helping us to unlock the value of this data, so that it can be used to go beyond reporting compliance, and provide insight that helps industry professionals better understand hazards, make critical decisions and communicate risk across the lifecycle of a project." ♦

Oil rig fires are costly and dangerous. Fire-safe valves can help reduce the overall damage.

Image Credit: John Fowler/Flickr

DEMAND IS GROWING FOR FIRE-SAFE VALVES

Fires are a daily risk in the oil and gas industry. Valves must cope with extremes in the case of emergency, so components need to be fire-safe if they are to withstand threatening situations. No wonder demand is increasing for fire safe valves as companies seek to minimise loss and risk.

LOSSES CAN BE devastating in a case of emergency; therefore, safety is just as high a priority for valves as high quality, and a long life cycle. “Fire safe valves are mainly used in the oil and gas industry, as risk of fire is high,” explains product manager Stefan Keller, AS Schneider. Fire hazards lurk in each step of the process – ranging from oil and gas production to transport, as well as in refineries and storage. The consequences could “understandably be substantial,” emphasises Keller.

Explosions in refineries or on oil rigs are a threat to man and material. A defective blowout preventer with safety valves played a major role in the devastating catastrophe during the Deepwater Horizon disaster. The valves malfunctioned, 780 million litres of crude oil flowed uncontrolled into the ocean, and caused several billion dollars in

damages. Even more, eleven men died and 600,000 birds perished.

Other sectors also place their trust in fire safe valves.

Petrochemistry, for instance, where “filling processes of inflammable substances in tank farms” are usual, explains Vetec Ventiltechnik. In a critical situation, fire safe valves have to stand the test in real conditions, particularly in view of having to handle fast filling times. Vetec developed a rotary plug valve with a double excentric plug design, which ensures that there is no contact between plug and seat while rotating. No particles can adhere in between. “The housing is basically free of dead space, so no troublesome soot deposits can occur,” states Vetec.

Fire safe valves also provide the chemical industry with much needed security. Ethylene oxide becomes highly flammable in contact with oxygen, reports

Vetec. In an emergency, fire safe valves go through hell to keep the plant safe. Valves should have a fire safe design, and be certified as fire safe. Here, fire safe testing facilities come into play.

Specialised testing facilities leave nothing to chance and put valves through their paces. Take Amtec, for example. The company developed a new fire safe test rig to test valves according to DIN EN ISO 10497, API 607, API 6FA or API 6FB. “With this test rig, all important type acceptance tests for fire resistance can be conducted,” says Manfred Schaaf, Amtec Advanced Measurement. And, if needed, client-defined testing procedures can be performed. This allows individual applications to be tested.

Safety is too important for things to stagnate. “Due to changing testing requirements the test rigs have to be modified

again and again,” states Manfred Schaaf from Amtec. Investments are always required: just recently, the company put a test rig for cryogenic temperature applications into operation. Amtec is continuously expanding in the lucrative testing facilities field. Meanwhile, various testing facilities are available for testing seals, valves and stuffing boxes.

Fire safety has long become a seal of quality. Companies in various sectors can’t do without this seal, and sometimes even are not allowed to. “We conduct fire safe tests for all new products to be used in such industrial sectors, from the ground up, in order to certify them,” states Keller. Demand, however, depends on the oil price, but is “continuing to rise”. Customers will always need fire safe valves. Innovations in these fields will be presented at Valve World Expo Düsseldorf from November, 27 – 29, 2018. ♦

AFRICAN RIG COUNT

| COUNTRY | June 2017 | May 2018 | June 2018 | Annual change |
|---------------------|-----------|----------|-----------|---------------|
| ALGERIA | 42 | 37 | 38 | -9.5% |
| ANGOLA | 2 | 4 | 4 | 100% |
| CONGO (BRAZZAVILLE) | 2 | 2 | 3 | 50% |
| GABON | 1 | 4 | 3 | 200% |
| KENYA | 1 | 1 | 1 | 0.0% |
| LIBYA | 0 | 0 | 0 | N/A |
| NIGERIA | 8 | 14 | 13 | 62.5% |
| SOUTH AFRICA | 0 | 0 | 0 | N/A |
| TUNISIA | 0 | 2 | 2 | 200% |
| OTHER AFRICA | 6 | 8 | 9 | 50% |
| AFRICA (TOTAL) | 60 | 67 | 71 | 18.3% |

Source: EnergyEconomist.com

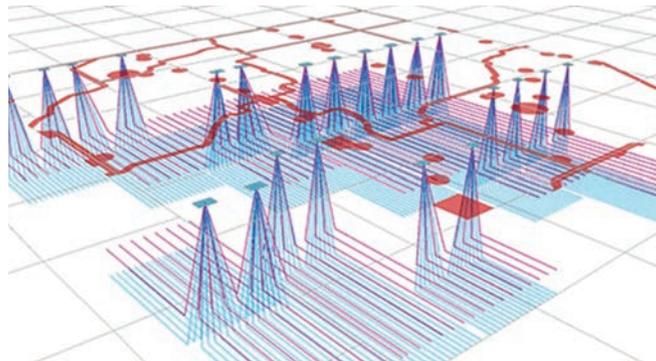
Unconventionals Analyst software for shale play evaluation

EXPRODAT HAS RELEASED a new, updated version of its popular Unconventionals Analyst software for resource play well planning and reserves evaluation.

The company created the Unconventionals Analyst extension to ArcGIS Desktop to help oil and gas companies streamline the processes of optimising shale play well inventory planning and evaluating reserve areas to assist in regulatory reserve management obligations.

Version 224 of Unconventionals Analyst includes a host of new features which extend the capabilities of the software to meet the latest user requirements in the rapidly evolving world of unconventionals development planning.

As well as supporting the latest version of Esri's ArcGIS Desktop at version 10.6, the software now includes the ability to create multi-level well laterals and assess pad connections to the local infrastructure, among other major new additions.



Advanced shale analysis software can speed up the evaluation process.

Exprodat COO, Chris Jepps, explains why Exprodat's latest software release is so useful for oil and gas companies developing unconventional oil and gas fields: "In recent years, our Unconventionals Analyst software has evolved rapidly to assist our onshore unconventionals customers to make the step-change in operational efficiency required to survive the low oil price environment."

Another benefit of the software cited by Jepps is the shorter well development timescales that can be achieved:

"Of the success stories that we hear, some of the most common include that using Unconventionals Analyst our customers are able to shorten well development planning projects from six months to just a few weeks, while also saving potential pad re-design costs by holistically planning field developments up-front."

While the US has been the leader in shale oil and gas development and production, some African markets have made early forays into shale development, although this has not been without its

complications.

In South Africa, the government announced in October 2017 that it remained committed to shale gas exploration in the Karoo Basin despite a court order which revoked regulations for hydraulic fracturing. This ruling could potentially push back plans to award the first South African shale exploration licenses by 2019 but in July 2018, a notice was published in the Eastern Cape Government Gazette by mineral resources minister, Gwede Mantashe.

In the notice about shale gas exploration rights in the Karoo Basin by Shell, Bindu Gas and Oil Exploration and Falcon Oil and Gas, the minister calls for submissions from member of the public whose rights "may be materially affected by his pending decision" on moving ahead with the early plans to explore the area further.

Other African countries where shale oil and gas potential has been investigated include Nigeria, Egypt and Tanzania.

CTS Offshore and MARPRO announce partnership

LONDON-BASED CTS Offshore and MARPRO have entered into a strategic partnership with Helsingør-based MARPRO representing CTS Offshore in Scandinavia on an exclusive basis.

MARPRO managing director Jakob le Fevre said: "The partnership with CTS Offshore aligns completely with our vision of assisting companies in the maritime and offshore business with qualified manpower. We have until now focused on shore-based recruitment, but we understand that there is a need for cost efficient, skilled labour to perform technical services onboard the vessels world-wide."

Analysing emissions efficiently with rugged, user-friendly technology

THE E1500 HAND-HELD Combustion Emissions Analyzer is a new, rugged unit with the ability to measure carbon monoxide and oxygen levels from high efficiency and condensing boilers, burners, engines, turbines, kilns, furnaces, incinerators and other industrial combustion processes.

Featuring a large colour display the E1500 lets users easily see and save their sample data without worrying about running out of memory mid-task – the device comes with sufficient internal memory for data from 2,000 tests. Data can also be printed out on a built-in printer with non-fading paper so that lasting records can be kept.

The E1500 also features pre-calibrated, field replaceable sensors which allow for easy diagnostics and replacement to reduce "down-time" and costly repair charges.

As well as measuring gas emissions, the device can measure temperature and pressure. The device is compatible with apps that can be downloaded to android and iOS smartphones, and it comes with Bluetooth compatibility and handy USB ports.

www.E-Inst.com

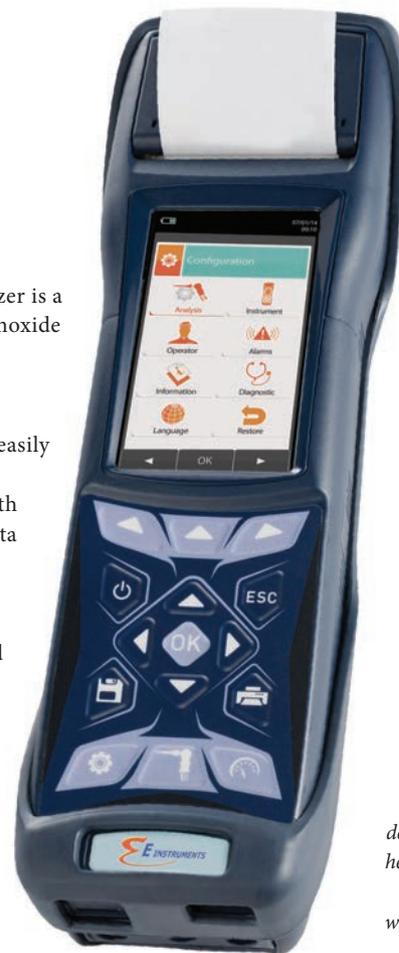


Image Credit: www.E-Inst.com

This new device will help create a safer workplace.

3M launches gas and flame detection product portfolio for safer workplaces in the oil and gas industry

3M GAS & FLAME Detection, a new product portfolio under 3M's Personal Safety Division, has debuted its gas and flame solutions, product breadth and innovative technologies as a unified front.

The new group has been formed from 3M's acquisition of Scott Safety and its Detcon, Oldham, Simtronics and GMI, which took place in 2017.

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

said Mel Gerst of 3M Gas & Flame Detection.

The products from 3M Gas & Flame Detection are well recognised for being designed for

harsh environments and tough applications and appreciated for their user-friendly portables and large fixed selection.

These products help keep

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

When customers require a customised approach, 3M Gas & Flame Detection's application engineering groups help customers build the right plan for their unique hazards, for a complete end-to-end solution. A complete product line and industry-leading solutions offer excellent perspective and quality products trusted for the most critical situations. 3M has more than 100 years of gas detection experience.

www.3M.com/gasdetection



Image Credit: 3M

Technology plays an increasingly important role in gas and flame detection.

Interactive reservoir modelling software to enable fast decision-making

EMERSON HAS LAUNCHED Roxar RMS 11, the latest version of its reservoir characterisation software. The software includes a powerful set of tools for developing smarter and more interactive reservoir modelling, facies modelling and unified tools for channelised reservoirs and region definition, and further strengthens Emerson's end-to-end E&P software portfolio.

The suite comes with a new plug-in technology designed to ensure that RMS 11 is well placed for future web and cloud-enabled workflows.

The main features of Roxar RMS 11 include a new intuitive graphical user interface for the facies modelling of channelised reservoirs as well as smarter algorithms, less iterations and



Emerson has aimed to create future-proof modelling software.

more flexible geometries; a more flexible and faster data tree; and unified and integrated concepts for describing and defining regions, geometries and attributes in structural and grid models.

"Roxar RMS 11 is all about the users – enabling them to work smarter and get the

reservoir modelling results and decision-making intelligence they need in less time," said Kjetil Fagervik, vice president of Roxar software product development and marketing, Emerson Automation Solutions.

www.emerson.com

Saipem and Curtiss-Wright join forces to develop subsea pump technology

SAIPEM AND CURTISS-Wright Corporation have signed an exclusive cooperation agreement to develop technology for barrier fluid-less

subsea pumps for water treatment and injection applications.

The development of the barrier fluid-less pump is a

derivative technology application of Curtiss-Wright's commercial expertise in the nuclear sector.

To qualify this new technology, Saipem and Curtiss Wright will develop, build and test a full-scale prototype of a barrier fluid-less pump. This represents a cornerstone of the all-electric strategy to replace conventional hydraulic umbilicals with power/control cables in subsea processing applications. This technology can be beneficial both for subsea desulfation technology co-owned by Saipem, Total and Veolia, known as SPRINGS, and for all of Saipem's proprietary subsea processing technologies.



Saipem's subsea operations will gain from the partnership with Curtiss-Wright.

www.saipem.com

Smart tech: solutions-based models

"THE RISE OF cloud technologies, Industrial Internet of Things (IIoT), and synergies between IT and operational technology (OT) companies are enabling PD pump manufacturers to adopt the Software-as-a-Service (SaaS) model," said Srividhya Murali, senior research analyst, Industrial at Frost & Sullivan. "Using big data analytics, machine learning, and sensorisation, smart pumps can help conserve energy by pumping out only the required levels of fluid."

Frost & Sullivan's analysis, European Positive Displacement Pumps Market, Forecast to 2022, focuses on the application of PD pumps across various industries. The pumps are segmented as rotary, reciprocating, and peristaltic pumps. The study presents analysis of the drivers and restraints that impact the market as well as the political, economic, and technological factors influencing investments.

"The market will gain from the enforcement of the EU2020 strategy, which mandates the use of energy-efficient pumping solutions. Regulations and the increasing environment consciousness among end-users will cause existing pumps to be replaced with higher-performing, energy-efficient pumps," noted Murali.

The report found that pump manufacturers can tap into additional revenue by improving the operational efficiency and reliability of their pumps by leveraging their advanced infrastructure, and using the Cloud to store and access data.

www.frost.com

Harren & Partner acquire MV Blue Giant for niche markets

BREMEN-BASED SHIPPING company Harren & Partner has acquired the offshore construction vessel, MV Blue Giant for an undisclosed price from the English operator, OIG Group. Harren & Partner's Offshore Department, headed by Robert Fowler will be responsible for managing the vessel.

The offshore construction vessel (length 179.63 m, breadth 25.40 m) has a variety of special features. Its dynamic positioning system allows for efficient changes of location without tugs. With a combined crane capacity of up to 700 t and one height extended crane up to 60 m, MV Blue Giant is able to salvage containers from the top layers.



MV Blue Giant is set to continue being a highly versatile vessel.

The vessel is equipped with a cabin block which can accommodate up to 200 people, a moon pool, a helideck and a fire

fighting system reaching a distance of 180 metres.

Heiko Felderhoff, managing director of Harren & Partner,

underlines the flexibility of MV Blue Giant: "It's a highly adaptable ship that can also be used as an emergency response vessel."

After several successful offshore and salvage projects in the Gulf of Mexico and the Gulf Coast of the United States, MV Blue Giant was sold in 2011 to the OIG Group. Since delivery, the vessel has been continuously under the technical management of Harren & Partner. In 2017, during the ice-free summer months, the vessel was used for extensive maintenance and repair work on a gas platform in the Pechora Sea, Russia.

www.harren-partner.com

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Drug testing simplified with fingerprint technology for the oil and gas industry

INTELLIGENT FINGERPRINTING, DEVELOPER of the world's first fingerprint-based drug test, is simplifying workplace drug testing across the oil and gas industry with the availability of a portable drug testing solution based on fingerprint sweat analysis technology.

The end-to-end system features an initial test that works by analysing sweat from a fingerprint to determine if an employee or sub-contractor has recently used cocaine, opiates, amphetamines or cannabis.

Sample collection takes only five seconds, with simultaneous screening results for all four drug groups in 10 minutes, on-site. The fingerprint-based approach supports all forms of workplace drug testing to support an

Image Credit: Intelligent Fingerprinting



Fingerprint technology can revolutionise drug testing.

organisation's drug policies, from pre-employment screening, to for-cause and random testing. The flexibility and ease-of-use of the solution make it particularly applicable for supporting ongoing health and safety and duty of care obligations across the oil and gas industry's potentially dangerous working environments.

Unlike traditional drug tests which can be invasive, time-consuming and undignified, the portable solution is convenient, hygienic and quick. As no specialist facilities are needed, the test can be conducted onsite.

www.intelligentfingerprinting.com

Viper Innovations partners up with Royal Niger for better distribution

VIPER INNOVATIONS, A UK company specialising in maximising the operational life of subsea controls and electrical distribution equipment, has

appointed a new distributor for the Nigerian offshore oil and gas market. Royal Niger Emerging Technologies, based in Port Harcourt, has more than five

years' experience in the upstream industry and has been working closely with Viper Innovations for some time.

Going forward, they will be selling and supporting the company's range of electrical integrity monitoring equipment, including the revolutionary V-LIFE insulation resistance recovery product winner of The Queen's Award for Enterprise in Innovation in the UK.

Nigeria is one of a number of important global markets that offer opportunities for Viper Innovations, promoted in part by the accelerated degradation of subsea electrical systems due to the warm water conditions and the general age of the offshore assets in the Niger Delta.



Image Credit: Viper Innovations

The Viper Innovations-Royal Niger partnership should improve distribution.

Unique Group diversifies for offshore markets

OFFSHORE SOLUTION PROVIDER Unique Group has added diving and industrial gas supply for the African offshore market from its base in Cape Town, South Africa.

This includes the full range of diving, welding, industrial, laboratory, test and calibration gases, chemical tanks and gas storage equipment.

As part of the integrated package offered to clients, Unique Group will supply diving gas, speciality gas and gas storage equipment on a sale and rental basis to its diving and life support customers across Africa.

The expansion will significantly simplify procurement processes and reduce operating costs for clients.

All equipment ranging from saturation and air dive systems to hyperbaric chambers and diving gas equipment is manufactured and supplied to stringent quality and safety requirements.

The new service line will be headed by Vishvas Chauhan, who brings with him 15 years of experience in the oil and gas industry with a focus on offshore and onshore gas requirements.

On his new role, Vishvas Chauhan said: "This new sector offering will play a key role in enabling us to deliver a sustainable, reliable and cost-effective service to the African oil and gas industry".

Rodney McKechnie, group director at Unique Group added: "The African market is paramount to the overall success of our diving and life support division and Vishvas' appointment is strategic as we look forward to further strengthen our operations in the region."



Tolmann Allied Services Company Limited



Capacity building and professional competence explains our mission

NEW OPITO APPROVAL RE-DIGITAL BOSIET

TOLMANN has been granted OPITO Approval for the following newly introduced courses for the Oil & Gas Industry. These courses include:

- BOSIET WITH CA-EBS (Digital Delivery)
- BOSIET WITH EBS (Digital Delivery)
- TROPICAL BOSIET (Digital Delivery)

BENEFITS

- Available to you at anytime, anywhere internet access is available.
- It also includes ongoing knowledge checks to better measure your understanding of the standards learning content.
- It gives you the opportunity to learn at your own pace and gain back time through reduced days away from work.

OTHER BENEFITS INCLUDE:

- It eliminates cost on:-
a) Security b) Logistics c) Accommodation
- It saves time for management
- Planning for offshore personnel is made easy.

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7B Trans-Amadi Industrial Layout, Mothercat Junction, Port Harcourt, Nigeria
Tel: +234 803 312 9962, 0809 990 1280
Email: tolmann@tolmann.com; admin@tolmann.com
Website: www.tolmann.com

OFFICE ADDRESS

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Email: tolmann@tolmann.com; admin@tolmann.com



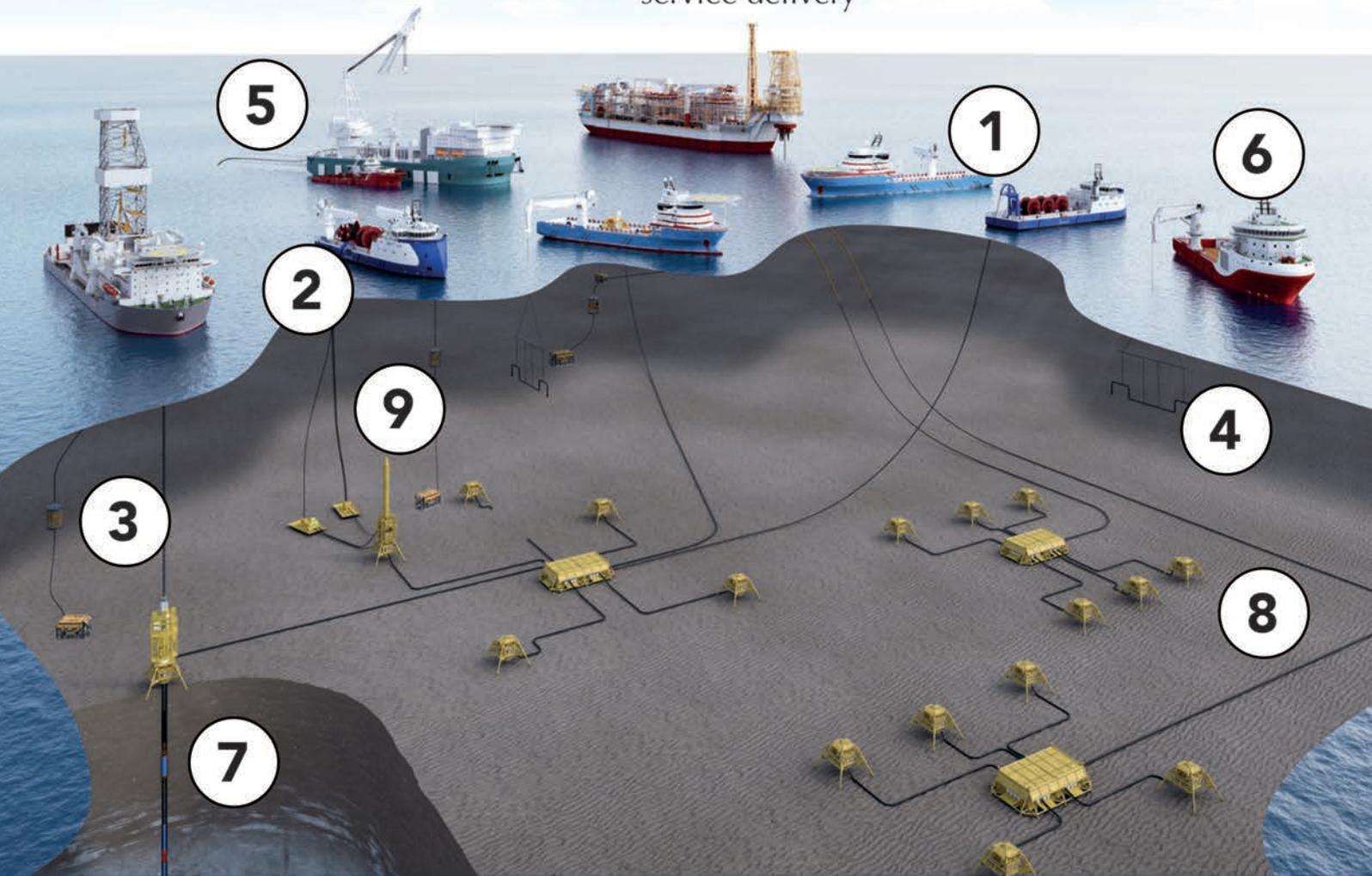
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Providing integrated solutions from surface to seabed

We are focused on providing diverse services to the upstream sector of the oil & gas industry.

From surface to seabed, each service segment is structured to function as an integrated unit, all leveraging on the experience, expertise and resources available in each segment with the overall aim to enhance safe quality and timely service delivery



1. SURF
2. Riserless well intervention
3. ROV drill support
4. Inspection repair & maintenance
5. Pipeline installation
6. Vessel chartering
7. Wellbore clean out tooling & services
8. Life of field
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