

# Oil Review

Oil · Gas · Petrochemicals

## Africa

VOLUME 17 | ISSUE 5 2022

# DYNAMIC TURN IN Southern Africa's O&G Sector

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accelerate production

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facelift

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compressors, flare gas

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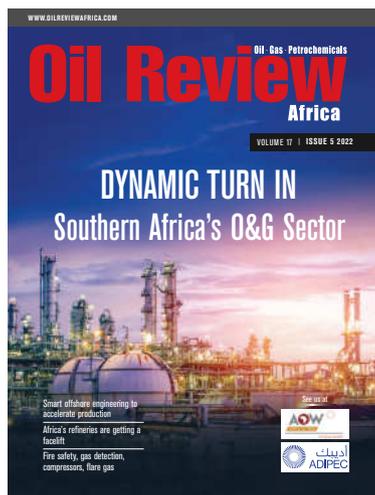
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It is an exciting time for operators across southern Africa. (Image credit: Adobe Stock)

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## EDITOR'S NOTE

IN THIS ISSUE we focus on one of Africa's leading oil and gas events, Africa Oil Week, which cannot be more relevant, given how the region is stealing the limelight as a major oil-producing continent during the Russia-Ukraine conflict. AOW 2022 will be running from 3-7 October in Cape Town, South Africa.

That brings us to this month's cover feature of the southern African nations, which are witnessing exciting times with some significant oil and gas discoveries. If that continues apace, the region might just shed its heavy dependence on imported fuels. Another sector that is drawing a raft of new projects is Africa's downstream refining industry.

West Africa, on the other hand, has its eyes on Europe's energy vacuum, which it hopes to fill with smart offshore engineering. We also look into the areas of critical safety concerns involved in the oil and gas industry, such as avoiding rig explosions and investing in gas detection.

**Madhurima Sengupta**

Editor

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# Executives' Calendar 2022

## SEPTEMBER

- 13-14 South Sudan Oil & Power**  
Juba, South Sudan  
<https://energycapitalpower.com/event/ssop-2022/>
- 27-28 UIOGS**  
Kampala, Uganda  
<https://uiogs.com/en>

## OCTOBER

- 3-7 Africa Oil Week**  
Cape Town, South Africa  
<https://africa-oilweek.com/Home>
- 4-5 Green Energy Africa Summit**  
Cape Town, South Africa  
<https://www.greenenergyafricasummit.com>

- 4-6 Energy Intelligence Forum**  
London, UK  
<https://www.energyintelligenceforum.com>

- 26-27 ReEnergy Africa Summit 2022**  
Kigali, Rwanda  
<https://www.reenergyafrica.com/>

- 31 Oct-3 Nov ADIPEC**  
Abu Dhabi, the UAE  
<https://www.adipec.com/>

## NOVEMBER

- 15-17 EAOGS**  
Nairobi, Kenya  
<http://eaogs.com/en>
- 30 Nov-2 Dec Offshore Technology Africa**  
Cape Town, South Africa  
<https://www.offshoretechnologyafrica.com/Homepage>

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

## All eyes on EAOGS 22 for tapping into East Africa's prospects

WHILE THE PROSPEROUS West can focus on ambitious climate deals, it may not be justified to expect developing nations to join the bandwagon with as much enthusiasm when many of them are yet to avail of basic amenities such as electricity.

Sudanese-British billionaire businessman Mohammed Ibrahim said on a recent occasion, "If Africans say 'Please we need a little gas, not to heat our swimming pools or to run our air-conditioning, but to have light,' they are told 'Please don't pollute.' But it is our turn to develop, and end poverty."

That is the spirit visitors can expect at the seventh East Africa Energy, Oil & Gas Summit (EAOGS) in Kenya this year. Organised by the National Oil Corporation of Kenya, the event will take place from 15-17 November at the Radisson Blu Hotel, Nairobi Upper Hill.

Despite mounting global

pressure, big companies are banking on the East African oil and gas scene. The East African Crude Oil Pipeline (EACOP) is one such project on which TotalEnergies, CNOOC Limited, Uganda National Oil Company and Tanzania Petroleum Development Corporation, among others are working. If completed, it will transport crude oil almost 900 miles from Uganda to the Chongoleani peninsula near Tanga port in Tanzania. The government can earn nearly US\$400mn through dividends and applicable taxes.

"There is nothing different from a just transition other than what is already in the Paris Agreement. The developed countries didn't like it, but eventually agreed to it. Let's talk about what we can do. We must not be forced to do what will destroy our future and our children. We need energy to sustain our future generation.

Those who are responsible for the mess we see today, should be responsible for change," said Omar Farouk Ibrahim, secretary general of the African Petroleum Producers' Organisation, at the MSGBC Oil, Gas & Power 2022 conference. While he is also a regular speaker at the EAOGS, some of the others include Natalia Camba, director national content, INP Mozambique, Mary Goretti Kitutu, Minister for Energy & Mineral Development, Uganda, and Ibrahim Ali Hussein, chairman and CEO, Somali Petroleum Authority.

William Ruto's victory against Raila Odinga in the presidential elections of Kenya might put the long-pending Turkana Oil Project back on the map.

Ruto, who was the deputy to former President Uhuru Kenyatta, had played a central role in negotiating with Tullow Oil, Africa Oil and TotalEnergies to secure a deal to develop oil

fields in the South Lokichar basin and link them by pipeline to the Indian Ocean port of Lamu.

If Ruto's leadership can break the logjam over this major oil project, then Kenya might hope for a turnaround from its burgeoning foreign debt and reeling economy.

With Russia cutting its gas exports to the EU, Mozambique is emerging as a potential LNG source for Europe. It is leading to indirect jobs and a rise in Mozambican labour in the sector, rather than foreign labour.

EAOGS 2022 is back live after 2020's virtual summit, when delegates and companies from 30 different countries joined the sessions. This year, the event will explore the latest exploration and licensing updates, emerging markets, local content and engaging the community, delivering a clean and sustainable energy mix and more.

<https://eaogs.com/welcome>

## Eni acquires bp's upstream Algeria business

ENI HAS AGREED to acquire bp's upstream business in Algeria, including the two gas-producing concessions 'In Amenas' and 'In Salah' (45.89% and 33.15% working interest respectively).

The In Salah Gas joint venture has developed seven gas fields in the Southern Sahara, around 1,200 km south of Algiers. Production began in 2004 with a second phase starting up in 2016. The In Amenas joint venture produces gas and natural gas liquids from the Illizi basin in south-eastern Algeria, with first production coming in 2006. Both assets are jointly operated with Sonatrach and Equinor. In 2021 they produced around 11bn cubic metres of gas, and 12mn barrels of condensates and LPG.

This acquisition has a great strategic value to further contribute to Europe's gas needs and further strengthens Eni's presence in Algeria, a major gas producer and a key country for Eni. The acquisition will allow Eni to increase its portfolio of assets in the country and, jointly with the new contracts of Berkine South and Block 404/208 recently signed, will allow new and synergic development opportunities, mainly focused on increasing gas production.

Anja-Isabel Dotzenrath, bp's executive vice president, gas & low carbon energy, said, "bp has worked successfully with Algeria and our partners for over 30 years, developing and supporting operations on two major gas projects for the country. We believe this agreement represents a good outcome for bp and Eni and for Algeria."

## Chariot and Total Eren partner to develop green hydrogen project in Mauritania

CHARIOT, THE AFRICA-FOCUSED transitional energy company and Total Eren, a leading renewable energy Independent Power Producer (IPP) based in Paris, are partnering to launch feasibility studies with a view of co-developing the 'Nour Project', a large-scale green hydrogen project to be located in Mauritania, and may evaluate further green hydrogen opportunities together in other African countries.

Thanks to its solar and wind resources, Mauritania is well-placed to implement Power-to-X solutions, providing Nour Project the possibility to produce among the most competitive green hydrogen in the world. With a potential reaching up to 10GW of electrolysis to be installed, it could become, once fully implemented, one of the most significant green hydrogen projects in Africa.

Through the Nour Project, the



Image Credit: Adobe Stock

Mauritania offers strong potential for hydrogen development.

Consortium will contribute to sustainable economic development in Mauritania, including potentially providing baseload power to the national grid, diversifying industrial activities, promoting job creation and developing local infrastructure. It will also provide a cost-effective, transportable energy solution to replace CO<sub>2</sub>-emitting fuels for export to the

European market.

Fabienne Demol, executive vice-president and global head of business development of Total Eren, stated, "We believe that green hydrogen is going to be an essential part of the energy mix in the future, and we are delighted to enter into this new partnership on a continent where our strategic shareholder, TotalEnergies, holds a strong footprint."

## Global oil and gas exploration falls off

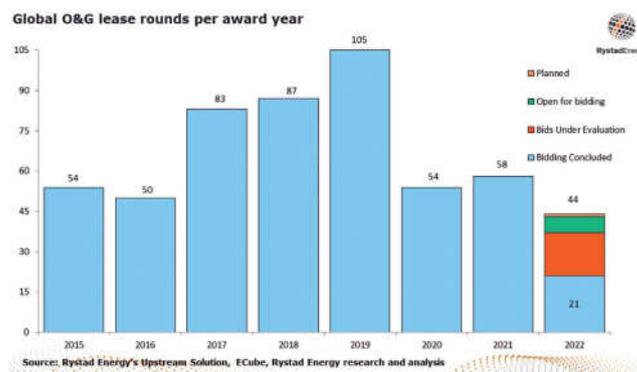
GLOBAL OIL AND gas exploration is set to falter this year as the number of licensed blocks and total acreage fall to near all-time lows, Rystad Energy research shows. This reflects the struggle to shake off the effects of the Covid-19 pandemic and the ensuing oil market crash.

Only 21 lease rounds were completed globally through August this year, half of the 42 rounds held in the first eight months of 2021. The acreage awarded so far this year has shrunk to a 20-year low of 320,000 sq km. Global lease rounds are expected to total 44

this year, 14 less than in 2021 and the lowest level since 2000.

Licensed acreage in Africa shrank 70% to just 46,000 sq km spread across Angola, Egypt, Morocco and Zimbabwe, the only African countries to award new exploration acreage to date in 2022. There was some sporadic activity in Africa between January and August, with Egypt providing rights to explore in nine blocks and Angola granting two blocks.

"It is clear that oil and gas companies are unwilling to take on the increased risk associated with new exploration or exploration in environmentally or politically sensitive areas," said Aatisha Mahajan, Rystad Energy's vice president of upstream analysis.



## Sasol and ITOCHU sign MoU for green hydrogen and ammonia project collaboration

SASOL AND ITOCHU have signed a Memorandum of Understanding (MoU) to develop the market and supply chain for green ammonia.

The parties will also evaluate ITOCHU's potential investment and participation in Sasol's green ammonia export-orientated projects, including product offtake as well as financial support from Japan for studies and grants for green ammonia projects in South Africa.

Sasol is advancing numerous green hydrogen projects in South Africa, such as the Boegoebaai in the Northern Cape province. Those projects include green ammonia production at scale for export. Given the excellent wind, solar and precious metal resources available in South Africa, the country is poised to



Sasol is advancing numerous green hydrogen projects in South Africa.

become a global hub for green hydrogen and its derivatives.

Hydrogen and ammonia play an integral role in Japan's Green Growth Strategy, and are positioned as "new resources" with the potential to significantly reduce the reliance the country has on carbon-intensive fossil

fuels, such as coal and oil.

Sasol executive vice president of Energy and Business, Priscillah Mabelane, said, "Sasol is excited about our collaboration with ITOCHU to unlock South Africa's significant potential as a large-scale producer of green hydrogen and ammonia."

## Nigerian PMI indicates modest private sector growth in August

THE NIGERIAN PRIVATE sector has continued to hold momentum in the last month, with the Stanbic IBTC Bank purchasing manager's index (PMI) moderating from 53.2 in July to 52.3 in August 2022. The lower PMI reading is attributed to softer uplifts

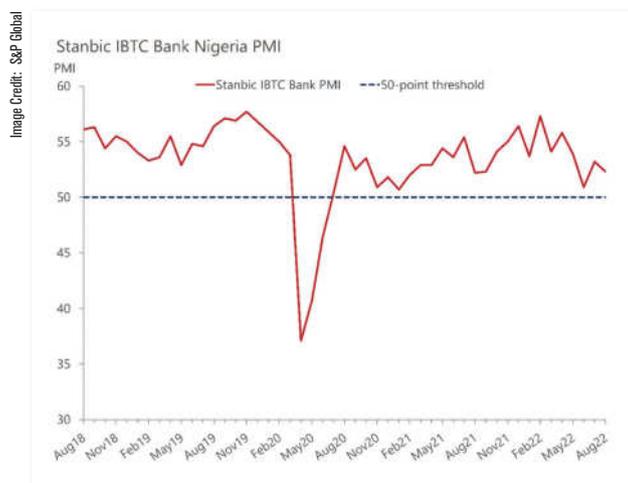
in output, new orders, and purchasing activity, while rising employment bolstered private sector activity.

The latest PMI readings mark 26 consecutive months above the 50-point expansionary threshold, but it was lower than this year's eight-month average of 53.9.

The August figures signal an improvement in business conditions since July, although the latest reading shows that private sector growth was slower than the long-run series average.

Improved business conditions were facilitated by higher new orders and output growth, which were attributed to rebounding domestic demand; however, this growth eased last month due to accelerating inflation.

Output levels increased last month, with the agricultural sector outperforming the wholesale and retail services. The manufacturing sector was the sole exception to this trend and saw output figures decline.



Private sector momentum slowed slightly in August due to rising input inflation.

## Aminex updates on Ruvuma activities

AMINEX HAS ANNOUNCED that seismic and commercial activities on the Ruvuma PSC continue to progress under the direction of the operator, ARA Petroleum Tanzania (APT).

More than half of the seismic data has been acquired over the Ntorya location, with the data required to evaluate the drilling location of the Chikumbi-1 well expected by mid-September 2022. APT anticipates the full seismic acquisition programme to be completed by October 2022.

Negotiations on the gas sales agreement (GSA) between the Ruvuma partners and the Tanzania Petroleum Development Corporation (TPDC) for the sale of gas from the Ntorya gas field to the TPDC are currently ongoing.

Aminex is carried throughout the ongoing work programme to a maximum gross capital expenditure of US\$140mn. The carry is expected to see the company through to the commencement of commercial gas production from the Ntorya gas field, scheduled for the end of 2024.

Charles Santos, executive chairman of Animex, commented, "We are delighted that operational activities continue to progress on seismic acquisition and processing and look forward to proving further updates in due course. We are also very pleased that progress is being made on the commercial aspects of the development, with gas terms on the Ruvuma PSA being agreed and negotiations for the GSA currently ongoing."

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ONE STEP AHEAD.

## TAQA to acquire 100% of Al Mansoori Petroleum Services

INDUSTRIALISATION AND ENERGY Services Company (TAQA) and the shareholders of Al Mansoori Petroleum Services LLC (AMPS) have entered into a definitive agreement for TAQA to acquire 100% of AMPS, expanding TAQA's Well Services business from Saudi Arabia to the wider Middle East and North Africa (MENA) region. The transaction is expected to close in the fourth quarter of 2022, subject to obtaining all relevant approvals and satisfying other conditions to closing.

AMPS brings to TAQA a long-established, well-diversified MENA-based business with a track record of strong performance and longstanding relationships with large oil & gas companies in the region. AMPS adds complementary products

Image Credit: TAQA



AMPS brings to TAQA a long-established, well-diversified MENA-based business.

and services to TAQA's portfolio, including early production facilities, well testing, DST, slickline, marine stimulation vessels, multi-purpose service vessels, inspection services, H<sub>2</sub>S monitoring and logging & perforation. With this transaction, TAQA will expand its geographic footprint into other countries across MENA.

Abdulla Nasser Al Mansoori,

chairman of the board of AMPS, said, "AMPS has a successful track record of 45 years in MENA, which will give TAQA an immediate entry in the region building on AMPS brand and reputation. We are happy to see the brand ownership is with a well-established and reputable firm which will continue to operate in the region and beyond."

## MSGBC Oil, Gas & Power 2023 to take place in Mauritania

SOPHIE GLADIMA, MINISTER of petroleum and energies of the Republic of Senegal has announced that MSGBC Oil, Gas & Power 2023 will take place in Mauritania next year

Image Credit: Energy Capital & Power



Sophie Gladima, minister of petroleum and energies of the Republic of Senegal.

"We will see you next year in Mauritania to continue this grand adventure, taking stock of the multi-billion-dollar projects that will have been launched in time, intervening and planning an ambitious future for local content, transitional power and socioeconomic growth," she stated.

Speaking on the final day of the 2022 event and touching on COP27, the minister noted, "We felt the necessity to be together after COP26 and through this gathering, we have created, or at least started, creating a unified African narrative on the energy transition which we will put before us at COP27."

The minister further noted, "The MSGBC nations share much in common and we will move forward with conviction and solidarity as we look forward to COP27, uniting all the African nations to face up to the challenges of our age."

She further stated that "We just need a bit more bravery, a bit more initiative, to take in hand our future and the futures of the next generations. Let's support our explorers whether or not they're successful in their searches. Let's develop African finance mechanisms to drive the field forward."

## Hiber's data-driven remote well-monitoring solution installed across the Niger Delta region

NIGER DELTA PETROLEUM RESOURCES (NDPR), a Nigerian independent oil and gas company, has selected Hiber's HiberHilo satellite-powered, remote well-monitoring solution to deliver real-time production data from wells scattered across the oil-rich Niger Delta region.

NDPR is a subsidiary of Niger Delta Exploration & Production, a publicly owned company established as an investment vehicle for Nigerians to participate in the country's foremost income generator, the oil and gas sector.

The deal will see NDPR install the HiberHilo solution on several onshore wells. This industry-proven solution digitises well monitoring using low-cost, low-power satellite connectivity to gather and deliver performance and safety data from wells in remote, off-grid locations.

HiberHilo will enable NDPR to take a data-driven, digital-first approach to remote well monitoring, providing insights to optimise well performance, reduce exposure of operations personnel, and lower operational costs.

"We are delighted to partner with Niger Delta Petroleum Resources to bring the latest well-monitoring technology to Nigeria and help improve the efficiency and safety of its field activities," said Hiber's CEO, Roel Jansen.

## Panoro Energy boosts production record

PANORO ENERGY ASA, an independent London-based exploration and production company with assets in Africa, reports that it is on track to exceed production of 12,500 bopd during 2023, and is well positioned to capitalise on the elevated oil price environment.

Working interest production from Panoro's diversified oil portfolio during the first six months of 2022 averaged approximately 7,900 bopd, according to the company, with production expected to increase through to year end. Since 30 June Panoro has lifted 865,200 barrels at an average realised price of US\$107.22 per barrel, bringing year-to-date crude oil sales to approximately US\$110mn, with further large crude oil liftings scheduled in the second half.

John Hamilton, CEO of Panoro, commented, "Our operational performance has remained in line with our expectations, as planned maintenance projects and well workovers to install and replace ESPs were safely completed in Equatorial Guinea and Tunisia. Looking ahead, we expect full year working interest production to be around 8,000 bopd. Our organic growth ambition of exceeding 12,500 bopd net to Panoro during 2023 remains fully on track. In July we completed Panoro's largest ever lifting to date, with proceeds in excess of US\$80mn received from a lifting of approximately 745,000 bbl in Equatorial Guinea. This has been supplemented with an oil lifting in Tunisia. Consequently, the third quarter of 2022 will set a new record in terms of revenue."

## Polaris to purchase node system from STRYDE for Africa exploration

STRYDE, A SEISMIC technology provider, has signed a new seven-figure contract with Polaris Natural Resources, which will see Polaris purchasing a 13,000-node system from STRYDE to acquire high-density subsurface data for cost-effective oil and gas exploration in Africa.

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



Bill Mooney, chief executive officer, Polaris with Mike Popham, CEO of STRYDE.

Bill Mooney, chief executive officer at Polaris, said, "As a direct result of using STRYDE nodes, we were able to reduce the size of the survey crew and decrease the number of vehicles and logistics required, and therefore the project timeline and associated costs and risk."

Due to the miniature size and agility of the STRYDE nodes, Polaris was able to deploy and retrieve thousands of nodes per day, minimising the need for line clearing and land disruption, resulting in being able to shoot the survey in the most efficient way possible.

## Equatorial Guinea Minister launches Central African Pipeline System

H.E. GABRIEL MBAGA Obiang Lima, Minister of Mines and Hydrocarbons of Equatorial Guinea, launched the Central African Pipeline System (CAPS) at MSGBC Oil, Gas & Power 2022, held



H.E. Gabriel Mbaga Obiang Lima, Minister of Mines and Hydrocarbons of Equatorial Guinea, speaking at the conference.

from 1-2 September in Dakar. Aimed at establishing a regional market for energy commodities based on the creation of hubs and pipeline systems across Central Africa, the CAPS marks a significant milestone for African producing and non-producing countries, serving as a launch pad for the creation of a sustainable and interconnected African market.

"This isn't a dream; it is what Europe is doing. In Africa, you see trucks because the pipeline system has not been developed. You need to do a pipeline for gas, oil, chemicals and for many different things. The countries who need those resources the most are the landlocked countries," said the Minister.

As a number of large-scale oil and gas projects come online in the upcoming years, the CAPS will be instrumental in ensuring the African continent benefits from its own resources. With a focus on eradicating energy poverty, the system is expected to accelerate energy access, industrialisation and multi-sector growth, while at the same time setting Africa on its own pathway towards a clean energy future.

# SOUTHERN AFRICAN OIL AND GAS IN THE SPOTLIGHT

With the near launch of LNG exports out of Mozambique, and recent discoveries offshore South Africa and Namibia, it is an exciting time for operators right across southern Africa. Martin Clark reports.

**A**FTER ENVIOSLY WATCHING the evolution of West Africa's energy sector, and the flurry of big natural gas finds offshore eastern Africa in recent years – including Mozambique – it may finally be southern Africa's time in the sun.

Major discoveries off South Africa and Namibia have brought with them a fresh dynamism to the region's oil and gas industry, building on developments in Mozambique, where huge gas export plans are already taking shape.

A first cargo loading of liquefied natural gas (LNG) is expected in Mozambique very soon. But the region is also gaining a reputation as a new frontier exploration hotspot too.

The excitement commenced in 2019 with the Brulpadda discovery offshore South Africa, in Block 11B/12B in the Outeniqua Basin, which was followed by the Luiperd find. It has sparked interest and much-needed energy supplies.

For Africa's most industrialised nation, these are huge developments, given the country's long dependency on imported fuels.

Across the border, momentum is also building in Namibia after other notable finds were announced this year, including Shell's Graff-1 and La Rona-1 wells in April and TotalEnergies' Venus-1 well



Image Credit: Adobe Stock

*The first cargo loading of LNG is expected in Mozambique very soon.*

announced in February.

Still, the region does have plenty of hydrocarbon history behind it too, from Mozambique's existing pipeline gas supplies into

**“ For Africa's most industrialised nation, these are huge developments, given the country's long dependency on imported fuels.”**

South Africa, to Namibia's own Kudu gas field, discovered back in the 1970s, which has proven commercially challenging to exploit.

### Exploration activity

Moving into the latter part of 2022, these are exciting times for southern Africa as more explorers – which include heavyweights such as Qatar Energy and Chevron – gear up for the next round of drilling work. The list also includes junior explorers, such as Eco (Atlantic) Oil and Gas Limited, which is targeting the Gazania -1

prospect, which could hold resource potential of 300mn barrels of light oil.

The Island Innovator rig is expected to arrive on site by the end of September for the drilling work, located in Block 2B is South Africa's Orange Basin. The Block 2B consortium also includes African Energy Corporation, Panoro 2B Limited and Crown Energy AB.

Across the border in Namibia, Eco (Atlantic) recently signed joint operating agreements with Namcor, the National Petroleum Corporation of Namibia, for four operated

offshore licenses.

The company also recently completed the acquisition of Azinam Group, taking its entire offshore asset portfolio in the Orange Basin in South Africa and Namibia, in return for a 16.25% equity stake in the enlarged group.

The deal making reflects growing enthusiasm all round for the southern Africa oil and gas opportunity.

In Shell's PEL 0039 block, where Graff-1 and La Rona-1 discoveries were made earlier this year, further exploratory drilling is also anticipated towards the end of 2022. Any further success here is certain to intensify interest in the whole sub-region.

### Development work

Development plans are also taking shape to monetise existing finds. TotalEnergies is in talks with Petroleum Agency SA to submit a production plan for work on Block 11B/12B, approximately 175 km off the southern coast of South Africa, in the wake of the Brulpadda and Luiiperd gas finds. This project also includes Qatar Energy and Canada's CNR International.

Potentially, first production could commence by 2026, according to Petroleum Agency SA's chief executive Phindile Masangane, speaking in an interview with Bloomberg recently. The output from the block could be routed to PetroSA's Mossel Bay gas-to-liquids (GTL) plant, which has run out of feedstock.

Natural gas is being seen by officials as a way to transition away from coal, which has been the mainstay of the power sector in South Africa historically. It remains a balancing act, however, with vocal opposition to the development of new oil and gas deposits, locally and globally.

Longer-term prospects in South Africa could also include revisiting the shale gas potential



Image Credit: Adobe Stock

*Heavyweight explorers Qatar Energy and Chevron are gearing up for the next round of drilling.*

of the semi-desert Karoo region onshore, which Shell and other companies had planned to drill before being thwarted by environmental opposition.

There are plans to initiate seismic work this year with a view to demarcating blocks, while the government seeks public comment once more on hydraulic fracking.

In Namibia, junior Canadian explorer, Reconnaissance Energy (ReCon Africa), has already proved a working conventional petroleum system in the onshore Kavango Basin just to the north.

### LNG exports

Meanwhile in Mozambique – which now boasts the third largest gas reserves in Africa – Italian energy giant Eni is preparing to ship its first long-awaited cargo of LNG from Area 4 of the Rovuma Basin.

All of the output for the next 20 years has been bought by bp, a reflection of its confidence in the project, Mozambique's vast resource base, and the broader commercial market for gas worldwide.

Eni is also looking to expand the 3.4mtpa Coral South project – which includes ExxonMobil

and China National Petroleum Corporation (CNPC) – with a second floating LNG (FLNG) platform.

Higher gas prices and the squeeze on supplies into Europe from Russia have given developers added incentives to expedite new production and development.

A second mega export project, the US\$23bn Mozambique LNG scheme, headed by TotalEnergies and utilising gas from Area 1 of the Rovuma Basin, has been held back amid militant attacks

**“ Higher gas prices and the squeeze on supplies into Europe from Russia have given developers added incentives to expedite new production and development.”**

onshore in Cabo Delgado close to where the facility is to be built.

The EU is reportedly looking to step up its support to a military mission in Mozambique to help counter Islamist attacks threatening strategic gas projects meant to reduce the EU's reliance on Russian energy.

A final investment decision is yet to be taken on a third Mozambique export venture, the US\$27bn Rovuma LNG project, headed by ExxonMobil, which will also draw gas from Area 4 of the prolific Rovuma Basin.

Looking to the future, Namibia might also one day aspire to join the ranks of Africa's LNG exporters.

The country now sits on reserves estimated at around 2.2tcf of gas. Historically, the Kudu field, 170 km north-west from the town of Oranjemund, was previously considered as a potential FLNG project, among other development scenarios. Now that the country is amassing more offshore reserves – and with the possibility of additional resources to be added soon – some of the old plans might need to be dusted off once more as operators seek to finally monetise Namibia's gas wealth. ♦



Image Credit: Adobe Stock

*West Africa, with its abundant and accessible offshore energy reserves, is ideally positioned to support Europe's energy demands.*

# FAST-TRACKING ENERGY PRODUCTION WITH LEAN ENGINEERING

As Europe faces an energy crisis, regions such as West Africa could step into the breach with the help of smart offshore engineering, says Stewart Maxwell, technical director at Aquaterra Energy.

**U**K AND EU pledges to phase out Russian oil and gas products and a spiralling energy price crisis across the West have sparked a dash for new oil and gas, as other countries race to fill the vacuum. With Moscow currently supplying 40% of the EU's natural gas and 27% of its oil, there is an urgent imperative to fast-track production of energy supplies from alternative providers. There is now a major opportunity to boost Europe's energy security, reduce energy prices and accelerate economic growth by looking further afield to new energy-rich regions.

Yet weaning Europe off Russian oil and gas within tight timelines will require new projects to be brought online at unprecedented speed. And many

countries will lack the infrastructure and resources to meet the new demand in a fast and cost-effective fashion. The complexity of some offshore platforms may exceed the local manufacturing, logistics and installation capabilities of even resource-rich regions, such as West Africa. Innovative and intelligent offshore engineering will be needed to plug Europe's imminent energy gap, curb energy costs and help new countries scale up production with their own resources.

Russia's recent halting of gas exports to Germany and Europe through the Nord Stream pipeline has added fresh impetus to Europe's search for different energy sources. The recent REPowerEU plan calls for radical behavioural changes to reduce demand while

collectively diversifying and de-risking supply and switching from fossil fuel to renewable energy. These changes will take significant time, and meanwhile, there is an urgent need for a short-term solution that can help to meet the demand and smooth the transition over to renewables.

This represents an opportunity to turbocharge social and economic development across markets with abundant oil and gas resources, from West Africa to South America. For example, historical energy trading relations and existing pipeline infrastructure between Europe and Africa mean the continent is ideally positioned to support with current demand. The EU is already in advanced discussions to boost LNG imports from African countries,

including Egypt and Algeria. And there are also moves to unfreeze Venezuela's long-suspended oil flows to Europe.

Finding different energy sources within the required timescale will require an unprecedented race to reach first production across new fields, especially in countries where production capacity, training and infrastructure are less developed. Some of these countries may lack the large construction yards, ports and in-country installation equipment needed to construct, carry and assemble conventional offshore oil and gas platforms. It can also be costly and time-consuming to use large, over-engineered platform designs for the many smaller fields that could rapidly fulfil Europe's short-term energy needs.

### Fast-tracking production

We need a revolution in lean engineering that fast-tracks energy production and maximises the use of existing and in-country resources. This would boost local economies, while quickly boosting the global energy supply.

Cost-efficient, quickly assembled infrastructure from mobile offshore production units (MOPUs) to minimum facility offshore platforms can significantly improve the project economics of field developments, especially for smaller fields. New minimalist, modular designs can be scaled from monopiles for small fields with one or two wells to conductor or jacket-supported platforms for extra capacity. These lightweight, modular platforms can be rapidly manufactured, transported and

assembled with small yards and minimal facilities.

Pioneering projects to increase gas production in West Africa illustrate how smart offshore platform designs can help rapidly ramp up production in the region, utilising local resources, and generating local content. We worked with a local operator in Nigeria who harnessed lightweight, low-cost and locally-fabricated platforms to increase its oil and gas production in the Niger Delta. Using the intelligently engineered modular Sea Swift as a Conductor Supported Platform design enabled a phased installation, allowing production to commence during construction and accelerated time to first oil by six months. The platform was entirely

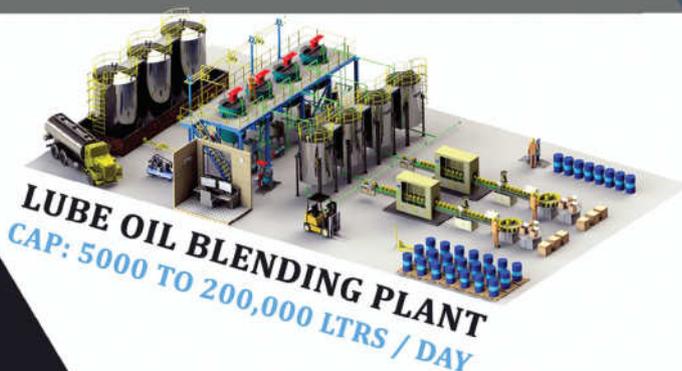
manufactured using existing facilities in-country, assembled in a local quayside, and installed using local, already in-country assets. The design was optimised to use less steel, enabling cost-effective development and deployment. It will ultimately deliver around 185mn bbl of oil and 637bn cubic feet of gas reserves for Nigeria, and these innovations could be extended to many marginal fields set for development across the country.

Angola is another country with huge opportunity to further tap into its abundant offshore energy resources. We are supporting a supermajor to develop multiple platforms that will support the production of around 5,000 bpd per well, with a 20-year production life. The platforms use existing in-country

resources in the Cabinda Province, Angola. A knowledge transfer partnership will also help to increase the proportion of Angolan engineers on the design team, boosting local skills.

In smaller fields where a fixed platform is not economically viable, wellbay modules can be installed on the hulls of MOPUs, thus removing the need for any platform. These can provide a fast track to first production across fields with just a few wells, or can be used while awaiting construction of bigger permanent platforms. These solutions are ideal for regions with multiple smaller fields in shallow water depths. They also offer a template for small independent operators to accelerate energy production with local assets that might otherwise not be used. ♦

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# 'CHARTING A NEW ENERGY COURSE FOR AFRICA'

Africa Oil Week 2022 (AOW 2022) will feature some of the biggest names in the continent's oil and gas sector, while exploring its emerging role in the international energy landscape.

**W**ITH THE RUSSIA-UKRAINE conflict pointing towards a change in the world order, Africa is increasingly finding itself in the limelight as a potential major oil-producing region.

In the wake of current events, Africa Oil Week 2022 (AOW) is preparing to welcome governments, national and international oil companies, independents, investors, the O&G community and service providers who will have the opportunity to engage in lively discussions on the continent's emerging role in the international energy landscape.

As the former Nigerian President Olusegun Obasanjo recently commented, "The discussions at AOW will be pivotal in charting a new energy course for Africa. We will decide what is best for us."

Running from 3-7 October 2022 the event will be held in Cape Town, South Africa. This year, AOW will be exploring the theme 'Sustainable Growth in a Low Carbon World' as the organisers will also simultaneously deliver

**“ AOW 2022 will be running from 3-7 October in Cape Town, South Africa.”**



Image Credit: Adobe Stock

*The event will discuss Africa's increasingly prominent role on the international energy scene.*

AOW's sister event, Green Energy Africa Summit. Since COP26, held in 2021, South Africa has become a notable player in the energy sector as it closed long-term climate deals at the conference with France, Germany, the UK, the US and the European Union (EU) through the Just Energy Transition Partnership (JETP) to advance its goal of a net-zero carbon economy in 2050, especially in renewables, hydrogen and nuclear sectors.

Visitors to AOW can expect exposure to world-class industry speakers across all content sessions including the plenary, national showcases and breakout sessions, and get an opportunity

to meet key oil and gas companies and services.

Some of the exhibitors this year include EnerMech, Airbus, Dug Technology, Aveon Offshore, Enverus, ENH, Oando, Schlumberger, Sulzer and CGG, among others.

In July, the Nigerian National Petroleum Corporation, a wholly state-run entity, was officially declared as a largely commercial enterprise – NNPC Limited. "NNPC Limited now will operate as a commercial oil company with over 200mn shareholders with integrity and excellence," said Nigeria's President Muhammadu Buhari during its unveiling.

It is a huge development considering that Nigeria is the leading oil producer of Africa. But to what extent will NNPC Limited be able to operate independently? How clearly defined are the roles of the government and the private stakeholders in the new company?

Participants at AOW will try to seek answers to such burning questions, and as Paul Sinclair, AOW vice-president of energy and director of government relations, said, "The global oil industry is clamouring for the chance to gain further clarity on the new laws. We look forward to

doing just that, at Africa Oil Week.”

Former Nigerian Minister of State for Petroleum Resources, Emmanuel Ibe Kachikwu; Industry, Trade and Energy Minister of Cape Verde, Alexandre Dias Monteiro; Minister of Petroleum, Mines and Energy of Mauritania, Abdesselam Ould Mohamed Saleh, and the Minister of Mineral Resources, Sierra Leone,

**“ Ministers from Nigeria, Cape Verde, Mauritania and Sierra Leone, among others, will be joining this year.”**

Timothy Kabba, are some of the prominent guests who will be joining this year’s conference.

Leading upstream organisations have been confirmed this year, including TotalEnergies, Chevron, ExxonMobil, BP, Equinor, ENI and Shell.

Other participating organisations include Niger Delta Exploration & Production (NDEP), PGS, ND Western and Sasol to name a few. “We are so excited for this year’s Africa Oil Week. This line-up of companies is our best yet,” said Sinclair.

Last year, AOW was held in the UAE, where Suhail Al Mazrouei, Minister of Energy and Infrastructure for the country, expressed his support for Africa in his keynote speech, stating, “As a close partner of Africa, we hope



Image Credit: Hype Group

Speakers discussing the African Upstream from the plenary stage at AOW 2019.

to facilitate capital flow that will result in socio-economic development for Africa and the Middle East.”

Find out more information including details on participation here: <https://africa-oilweek.com/Home>

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# SETTING OFF THE ALARM BELLS BEFORE IT IS TOO LATE

Fire safety in the oil and gas sector must be taken seriously to avoid major explosions and uncalled-for accidents. Madhurima Sengupta reports.

**INCIDENTS OF OIL** rig explosions may be rare, but when they happen, they are nothing short of an apocalypse. However, rig owners can avoid such catastrophes if only they take the right safety protocols.

For that, it is important to take the issue of fire safety seriously. Johnson Controls says that the primary fire hazards in oil and gas facilities are typically fuel in-depth fires involving hydrocarbons and/or polar solvent products, with another red flag being pressurised gas leak fires. At-risk functional assets include refineries, fuel tank farms, loading areas, offshore platforms, jetties and shipping berth platforms. Fire hazards also include the potential ancillary risk of explosions and dispersion of hazardous gases and substances.

Suppression of flammable liquid and pressurised gas fires requires high-performing foam concentrates and dry chemicals, says Johnson Controls.

“Our extensive portfolio of non-fluorinated foam concentrates, AR-AFFFs and dry chemicals – coupled with reliable equipment to properly proportion and apply these suppression products – provides effective fire protection solutions for most oil, gas and petrochemical hazards,” said Isaac Hawari, business development leader – global products, Johnson Controls.

Naturally occurring gases (benzene, methane, hydrogen sulphide), mineral spirits,

**“ Primary fire hazards are typically fuel in-depth fires involving hydrocarbons and/or polar solvent products.”**

compressors and heater treaters also pose risks, says FS, a cable maintenance company. They claim specialisation in providing fire protection to electrical cables, which is “a very sensitive part of an operation, offshore or onshore.”

“By protecting vital cables, you will reduce the chance of down time of the facility and at the same time significantly extend the life of electrical cables,” they say.

Johnson Controls is also addressing the untapped Lithium-Ion battery monitoring market by launching Lithium-Ion risk prevention systems. Another innovation is its Sapphire Plus gaseous suppression system, which enables flexible clean agent fire protection systems. It provides ideal fire protection for sensitive, high value equipment.

As the pressure to reach net zero emissions mounts, the oil and gas sector is increasingly shifting towards hydrogen fuel from coal/gas. But since flame is almost invisible when hydrogen burns, it is necessary to keep special early-warning gas detectors handy. With a wide range of flammable concentrations in air and lower ignition energy than gasoline or natural gas, hydrogen can ignite more easily.

“When hydrogen is detected, our VESDA ECO system can automatically activate a ventilation system to help prevent a buildup of explosive levels of hydrogen gas. If hydrogen levels continue to increase, an alarm can notify staff,” said Hawari.

A few such precautions are all it takes to prevent another Piper Alpha or Deepwater Horizon. ♦

*Fire and explosions can have catastrophic consequences in the oil and gas industry.*



# A CALL FOR CLEAN ENERGY INVESTMENT

According to IEA's Africa Energy Outlook 2022, the global energy crisis is highlighting the urgency of accelerating investment in cheaper and cleaner energy in the continent.

**T**HE IEA'S REPORT stated that the unstable situation in Europe has increased strains on African economies as the prices of food, energy and other commodities soared. For a continent already reeling from the impact of the pandemic, many positive trends have reversed and more than 4% more people are living without electricity in 2021 than in 2019. Utilities have struggled under the mounting financial difficulties which have increased the risk of blackouts and rationing.

In addition, although Africa contributes less than 3% of the world's energy-related carbon dioxide emissions, the continent is disproportionately affected by climate change which is worsening water stress, reducing food production, and increasing extreme weather events.

Despite these challenges, the IEA report found that the global clean energy transition holds new promise for Africa. Fatih Birol, IEA's executive director, commented, "The new global energy economy that is emerging offers a more hopeful future for Africa, with huge potential for solar and other renewables to power its development – and new industrial opportunities in critical minerals and green hydrogen.

"The immediate priority for Africa and the international community is to bring modern and affordable energy to all



Image Credit: Adobe Stock

According to the IEA, the global clean energy transition holds new promise for Africa's economic and social development.

Africans – and our new report shows this can be achieved by the end of this decade through annual investment of US\$25bn."

The Africa Energy Outlook 2022 explored a sustainable scenario in which all African-related development goals are achieved on time and in full, including access to modern energy services by 2030.

At the top of the list for achieving this is to ensure affordable energy through increasing energy efficiency.

The IEA also indicated that expanded and improved electricity grids will provide the backbone of Africa's new energy systems, and renewables can be central to this. With Africa home to 60% of the best solar resources worldwide and it representing the cheapest source of power in many parts of Africa, solar is set to out-complete all other source continent-wide by 2030.

While renewables will account for more than 80% of new power generation capacity added by 2030 the continent's industrialisation will rely, in part, on expanding natural gas use, which could be vital for Africa's domestic fertiliser, steel, cement and water desalination industries.

The report also touched upon hydrogen, where the continent's rich renewable resources are presenting a future of immense potential. A number of low-carbon hydrogen projects are underway or under discussion in Egypt, Mauritania, Morocco, Namibia and South Africa and are primarily focused on producing ammonia for fertiliser – which will strengthen Africa's food security. Global declines in the cost of hydrogen production could allow Africa to deliver renewables-produced hydrogen to northern Europe at internationally competitive price points by 2030.

To achieve Africa's energy and climate goals, the IEA reported, there is a need to more than double energy investment this decade to over US\$190bn each year from 2026 to 2030.

"Multilateral development banks must take urgent action to increase financial flows to Africa for both developing its energy sector and adapting to climate change," remarked Birol. "The continent's energy future requires stronger efforts on the ground that are backed by global support. The COP27 Climate Change Conference in Egypt in late 2022 provides a crucial platform for African leaders to set the agenda for the coming years. This decade is critical not only for global climate action but also for the foundational investments that will allow Africa – home to the world's youngest population – to flourish in the decades to come." ♦

# Explore South Africa!

**Petroleum Agency SA** encourages investment in the oil and gas sector by assessing South Africa's oil and gas resources, and presenting these opportunities for exploration to oil and gas exploration and production companies.

Compliance with all applicable legislation in place to protect the environment is very important, and rights cannot be granted without an approved Environmental Management Plan.

Explorers must prove financial and technical ability to meet their commitments in safe-guarding and rehabilitation of the environment.

Preparation of Environmental Management Plans requires public consultation and a clear demonstration that valid concerns will be addressed.

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# WORKPLACE GAS SAFETY – A CONNECTED FUTURE

David Head, senior marketing manager at Dräger Safety, discusses the future of gas safety and the role of digital technologies in protecting workers.



Image Credit: Dräger Safety

**INDUSTRY 4.0, AND** the ongoing automation of traditional industrial practices using modern smart technology, have played a prominent role in the evolution of workplace safety in the past decade, and recent developments in digitalisation and connectivity are further transforming the way we work, making workplaces smarter and safer.

**“ There have been some major advances in innovation, particularly in connectivity, of portable gas detectors.”**

The ideas and technologies promised as part of a fourth industrial revolution have brought far-reaching benefits – spanning big data and cloud computing, to predictive maintenance – which have had a positive impact on many industry sectors.

When it comes to gas safety the potential benefits are significant, and there have been

some major advances in innovation, particularly in connectivity, of portable gas detectors over recent months.

Sectors where gas is a risk, such as the oil and gas or utilities industries, are now able to use real-time monitoring of hazardous environments linked to inter-connecting portable systems which communicate and respond to one another to safeguard personnel, and the system has capacity for wider application, including fixed gas systems, going forward.

A connected smart safety system can now be created to link portable gas detectors which might be used in confined spaces.

This offers a number of key benefits, including live monitoring, whereby key information is displayed in real time via an online user interface. This interface is available to anyone who has the appropriate permissions, meaning that workers on site, or managers in a central location, can pinpoint the position of their colleagues and the status of their gas safety at any given moment. If an alarm is activated by any individual device, colleagues and managers would be immediately alerted to the risk, and receive the key information displayed on the management dashboard.

Furthermore, emergency services can be granted access to the data, which allows them to manage an emergency situation, if needed, and the data is also logged for later analysis.

This means that hazards can be identified more quickly, countermeasures can be initiated faster, and correlations and anomalies can be analysed more easily to identify root causes. This is important in improving outcomes, not only in post-event analysis, but in real-time through live monitoring.

Another key benefit of this type of digitisation is that it offers opportunities for more efficient asset management, simplifying a range of processes that were previously more complex, and centralising management, while decentralising execution.

This makes device management and compliance far more straightforward, as data in relation to operational status, testing and calibration results can be collected and accessed from anywhere, with the ability for analysis to be performed directly. Device updates can also be distributed centrally with ease, notifications can be sent to users, and a complete documentation history for each gas detection device is automatically stored on the connected system.

Increased transparency, easier management and reduced potential for human error are key outcomes of the smart system, leading to significantly improved safety to life, and cost savings at the same time.

Of course, it is vital that good training and a thorough



Image Credit: Dätger Safety

Integrating 4IR technology into gas safety measures helps protect owners and operators.

understanding of such technologies is well-embedded as part of any new roll-out. Without this, there is a real risk that the full benefits may not be realised.

With demand growing to generate better safety insight and information to better inform safety policies and approaches, there is an increased requirement for safety data. And while this may feel challenging, advances in

safety technologies are making this increasingly possible, and straightforward.

As connected and digital safety is starting to be better understood and harnessed across multiple industry sectors, alongside the range of operational benefits, this technology heralds new potential to safeguard those exposed to gas safety risks in the workplace. ♦

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# AFRICA'S REFINING LANDSCAPE REDEFINED

A raft of new projects coming on stream in the next few years will massively upgrade Africa's downstream refineries sector, says Martin Clark.

**A**FRICA'S REFINERIES SECTOR is getting a facelift, as new projects mature across the continent, and upgrades and maintenance work at existing plants lift overall capacity. It marks the continent out as a new and important source of work for engineering and technical firms working across the sector. The new slate of work also marks a leap forward in terms of modernisation, raising Africa's refining credentials and putting the industry on the global map.

A couple of flagship projects are expected to enter service by the end of this year, notably the 650,000 barrels per day (bpd) Dangote refinery in Nigeria, and potentially Angola's smaller 60,000 bpd Cabinda refinery. The grandest of them all by some distance is the US\$19bn Dangote project, being built at Lekki in Lagos, which is set to become Africa's biggest oil refinery upon launch, anticipated during the final quarter of 2022. It will boast the largest pipeline infrastructure anywhere in the world, with a sprawling 1,100-km-long network to handle 3bn standard cubic feet of gas per day.

The facility is expected to meet all of the country's refined products demand, with a surplus available for export – a triumph for a nation that has long suffered the ignominy of being Africa's top crude oil producer yet short of fuel. Millions of Nigerians will hope that it also spells the end of



*Africa's refining sector is seeing a high level of activity.*

Image Credit: Adobe Stock

long queues at gas stations.

In Angola, while much smaller in scale, the Cabinda refinery is also regarded as a national priority project to boost local value addition to oil exports and create jobs. In common with Nigeria, it imports nearly all of its domestic fuel needs, despite being a major crude exporter.

The Africa Finance Corporation (AFC) recently approved US\$100mn in financing for the construction of the plant, which is being developed in phases by a grouping of state oil giant Sonangol and Gemcorp Capital, a private investment firm.

There is a raft of additional projects that could further reshape Africa's refining landscape in the next few years.

In West Africa, this includes Congo's Pointe Noire refinery project headed by Atlantic Petrochemical Refinery and tipped to start in 2023. In North Africa, Sonatrach has plans to develop a bunch of refinery projects at key Algerian oil and gas sites such as Hassi Messaoud and Tiaret.

A shortage of refining capacity generally, coupled with the crisis in Ukraine, has left some African countries desperately short of fuel, prompting more urgent action. A number of upgrades and maintenance projects have also been completed recently to keep supplies flowing.

Angola inaugurated an extension unit on its Luanda

refinery in July this year, in a project led by Italian energy major Eni in partnership with state-owned Sonangol. The expansion and modernisation project aimed at increasing production capacity to 450,000 tons per year. At the inauguration, Eni executive Guido Brusco hinted at more expansion and modernisation efforts at the site to come later on.

In South Africa, Sasol restarted production from its 108,000 bpd Natref refinery in August, giving a much-needed boost for local fuels supply. Glencore has also restarted operations at its Cape Town refinery after an explosion in 2020, which closed the facility. 🔥

# COUNTERING RISK IN AFRICA'S ENERGY SECTOR

There is no shortage of risks facing oil and gas companies working in Africa, and mitigating this multitude of threats calls for a collaborative approach, from the board room to the high seas.

**R**ISK MANAGEMENT IN the oil and gas industry can encompass a wide range of threats, including economic, environmental and operational, that spread across all strands of the business – from upstream health and safety to political risk in volatile countries.

Africa is a testing ground for all of these and other scenarios, including a plethora of new and emerging digital threats, from cyber warfare to ransomware attacks. Insurance firms and risk specialists have long played a supporting role in helping to unlock Africa's oil and gas wealth, providing comfort and cover where necessary to explorers and developers, as well as shippers, contractors and equipment suppliers.

Given all the uncertainties in energy markets right now, it is a niche that is thriving.

As well as global insurance giants such as Allianz, Axa and Zurich, there is a supporting cast of local providers and industry specialists working right across all the disparate strands of Africa's energy sector.

Africa Specialty Risks (ASR) provides comprehensive, bespoke risk mitigation solutions to local and global customers across the



*Shipping is subject to a number of threats, from piracy to cyber attack.*

continent and is seeing its energy business thrive. The pan-African focused reinsurance group reported in April that its energy division's capacity increased to US\$38mn, provided through an ongoing relationship with GIC Re and Peak Re. It follows 12 months of profitable underwriting results across 20 African countries for ASR's energy portfolio, which provides coverage across the upstream, downstream, power, utilities and renewables segments.

ASR also recently announced a collaboration with Mauritius-based Neema Insurance Managing Agency in the field of

political violence and terrorism insurance for small and medium sized enterprises in Africa. These are all areas that are among some of the more dramatic threats faced by Africa's energy industry.

In Nigeria, the government recently teamed up with a coalition of shipping industry stakeholders to launch a new strategy to fight back against piracy, armed robbery, and kidnapping in the Gulf of Guinea – a threat that has long plagued the industry.

It includes key groups like the International Chamber of Shipping, BIMCO, Intertanko, Intercargo, Oil Companies International Marine Forum (OCIMF), and representatives of the Nigerian Navy and Nigerian Maritime Safety Agency (NIMASA).

It is a huge challenge: in May, the UN Security Council stated

that the Gulf of Guinea was now the world's top piracy hotspot. In 2020, some 40% of piracy attacks and 95% of crew kidnappings occurred in the region – although numbers dropped dramatically in 2021 following another big anti-piracy initiative, known as Deep Blue.

Every day, more than 1,000 ships crisscross the Gulf of Guinea, with piracy estimated to cost the coastal states of the region around US\$2bn every year.

But the collaborative approach can be an effective way to tackle a seemingly intractable problem. The waters of Somalia in the Indian Ocean were taken off the shipping industry's list of high-risk areas in August after sustained and concerted counter-piracy efforts by regional and international stakeholders. ♦

**“ The collaborative approach can be an effective way to tackle a seemingly intractable problem.”**

# LOWERING RISK AND COSTS WITH ADVANCED SCALE MONITORING

The threat of scaling has long been an issue in the oil and gas industry. The consequences of scale deposition can include well plugging, corrosion of assets, and increased risk of safety hazards. Samuel Ezewu, senior technical manager at ChampionX Oilfield Solutions in Nigeria, explains how their proprietary DepCon technology has successfully mitigated risk and improved performance for operators.



*With volumes of produced water increasing, a proactive approach toward testing and monitoring for scale formation is essential to maintain flow assurance and integrity of the production system.*

Image Credit: ChampionX

## **What is the impact on flow assurance, asset integrity and production caused by the formation of scale?**

The potential for scale problems exists whenever the fluid produced from a reservoir contains water. As the well matures and more hydrocarbon is extracted from the reservoir, the water table in the reservoir rises, water begins to be produced, and the potential for scale deposition increases.

With increasing volumes of produced or effluent water during oil and gas operations, a proactive approach is essential to control the formation of scale and maintain flow assurance and integrity of the production system.

Once applied, it is essential to monitor and

adjust scale inhibitor rates to ensure they are cost-effective and efficient at mitigating scale as production fluid ratios change.

**“ It is essential to monitor and adjust scale inhibitor rates to ensure they are cost-effective and efficient at mitigating scale as production fluid ratios change.”**

## **How has scale formation traditionally been identified and monitored?**

For decades, chemical inhibition has been used to mitigate potential scaling threats posed by significant concentrations of barium, strontium and calcium in produced water.

The conventional method of monitoring scale is via the use of scale coupons and spools. Coupons are inserted in the system through a valve or bull plug and left for a given period to collect scale. Perforations in the rectangular metal coupon create turbulent areas of flow, which induces scale precipitation. Localised pressure drops can stimulate loss of carbon dioxide and create carbonate scale formation. The weight of scale

is determined by subtraction of the original weight of the coupon from its dried weight after removal.

The limitations of this approach lie in determining if the scale was formed earlier – as dislodged scale trapped by the impact on the coupon surface – or was due to active scale growth. Likewise, it is not possible to determine when actual scaling occurred between the period of the coupon's installation and retrieval, or from the last visual inspection of the vessel or flowline.

While visual inspection for inorganic scale deposits is the most definitive method of identifying the need or effectiveness of a scale programme, this means deposits are often discovered once a system upset has occurred, resulting in the impairment of production equipment or, in the worst case, loss of production. Therefore, equipment should be inspected whenever it is offline or the opportunity presents itself.

Scale inhibitor residuals measurement can be used to determine the amount of inhibitor in the process brine. However, this only measures how much inhibitor is present in the system, and not if the system is protected.

### How does ChampionX's DepCon technology work, and what are its advantages?

DepCon offers an advancement in monitoring scale deposition. A portable device, it uses quartz crystal microbalance (QCM) technology to provide real-time optimisation



A portable DepCon device, which uses quartz crystal microbalance (QCM) technology to provide real-time optimisation of scale monitoring programmes.



Samuel Ezewu, senior technical manager, ChampionX Oilfield Solutions Nigeria.

### “These measurements were used to determine the severity of any deposition, and the system parameters were adjusted accordingly.”

of scale monitoring programmes.

The device vibrates when an electrical potential is applied (piezo-electric effect) with the vibration frequency being linearly proportional to the mass of a deposit on the metal surface of the QCM. Any decrease in frequency indicates deposition.

ChampionX was contracted by an operator in Nigeria to develop a customised scale inhibitor monitoring programme for the surface facilities and seawater flood systems of an FPSO, which was producing 230,000bpd of oil, 40,000bpd of water and using 260,000bpd seawater injection.

DepCon was used to ensure the current scale inhibitor rates were adequately preventing scale deposit build-up through instantaneous and continuous measurements of fluids diverted through the device. These measurements were used to determine the

### “By continuously monitoring for changes in scale formation, the DepCon technology efficiently addressed changing production fluid ratios.”

severity of any deposition, and the system parameters, such as the chemical injection rate, were adjusted accordingly to effectively control the formation of scale.

Recent developments of the technology have produced a revised system that can be used for inline or sidestream operations at temperatures up to 177°C and 3,000 psi. In addition, the unit has a data logging capability so it can be installed and programmed to take measurements periodically. The data can then be downloaded, allowing offshore personnel more direct input into scale control programmes.

### How did the technology mitigate risk and improve performance for the operator?

Tests were conducted at seven locations, including two floatation units, the seawater flood booster pump and four hydrocyclone water units. The amount of deposit (determined from the frequency change of the resonator) varied as the treatment rate of the scale inhibitor was changed across the system.

When the initial treatment rate of 5ppm was applied, there was very little or no scale deposition. However, when the injection rate was reduced to 3ppm, scale formation began to occur. The tests concluded that a protected system would show no increase in deposit with time.

The results of a technical audit recommended the waterflood scale inhibitor should be changed from SCAL16542A to SCAL16082A, a lower cost, best-in-class application to maintain target concentration at 5ppm. This would lower the demands on logistics, and thereby reduce the total cost of operations on the FPSO.

By continuously monitoring for changes in scale formation, the DepCon technology – paired with an effective and economical scale inhibitor treatment programme – efficiently addressed changing production fluid ratios and contributed to steady operations for the producer. ♦

# LOOKING FORWARD TO ADIPEC 2022

Christopher Hudson, president of dmg events, highlights some of the key themes of ADIPEC 2022, taking place from 31 October-3 November in Abu Dhabi.

## HOW IS ADIPEC 2022 shaping up in terms of exhibitor and visitor participation etc.?

Despite the impact of COVID-19 last year, ADIPEC 2021 still exceeded expectations, and this year is shaping up to be even bigger. Exhibition spaces have already sold out and a huge number of visitors are registered to attend, with an expected 150,000 energy professionals from more than 160 countries.

We'll be hosting 2,200 exhibiting companies, and more than 50 national oil companies and country pavilions. More than 1,200 ministers, CEOs, policymakers, and influencers will provide strategic insights across the conferences to 12,000 delegates, 135 of which will be technical sessions on the latest and most innovative forms of energy technology.

The dedicated zones will include offshore and marine, digitalisation in energy, smart manufacturing, and for the first time a decarbonisation zone, reflecting the growing need for decarbonisation strategies in the energy industry.

## What role do you think ADIPEC can play in accelerating the industry's climate commitments and shaping the direction of the global energy transition?

We are at a critical point for energy transition. The energy industry is rapidly evolving and has a long history of successfully adapting to overcome challenges. Today it is committed to proactively identifying and delivering solutions to support net-zero ambitions. Many leading energy companies have made pledges, emission reduction commitments, and are investing in new technologies, but a successful energy transition won't be achieved by entities acting alone – this is where ADIPEC comes in.

At ADIPEC we convene policymakers, industry experts, business leaders and tech



Image Credit: dmg events

Christopher Hudson, president of dmg events.

innovators from across the value chain to debate and deliberate on pathways to translate climate pledges into action. It is the place that not only facilitates strategic dialogues, but also expedites synergies between decision-makers, business leaders, and companies that can implement those solutions.

ADIPEC is far more than a trade event, it is

**“ ADIPEC gives the oil and gas sector the opportunity to showcase its evolving role in a pragmatic and progressive energy transition.”**

a global platform that gives the oil and gas sector the opportunity to showcase its evolving role in a pragmatic and progressive energy transition. Occurring strategically before COP27 and ahead of COP28 in the UAE, ADIPEC will once again have a real impact on shaping the global energy agenda and the industry's effort in the energy transition.

## Are there any other major themes that will be at the top of the agenda at ADIPEC?

Beyond environmental sustainability, the current energy system is trying to balance energy security and energy equity. This is known as the Energy Trilemma, and ADIPEC will be at the centre of finding its solution.

It involves weighing net zero targets against a growing global population, increasing energy requirements and the cost/implementation of reliable energy sources.

The global energy sector needs credible and diverse thought leaders to facilitate the dialogue on these issues and advance an equitable and responsible energy transition. We're putting security and equity in focus on our agenda through our various Leadership Perspectives, Opinion and Live Sessions and Strategic Panel Sessions, providing an opportunity for industry leaders to participate in the path toward a flexible and resilient energy transition.

## You introduced the smart manufacturing zone and conference last year; how does it tie in with the UAE's industrial strategy, and how does it reflect the changing relationship of energy and manufacturing?

In 2021, the UAE launched its industrial strategy, Operation 300bn, which aims to develop the UAE's industrial sector and

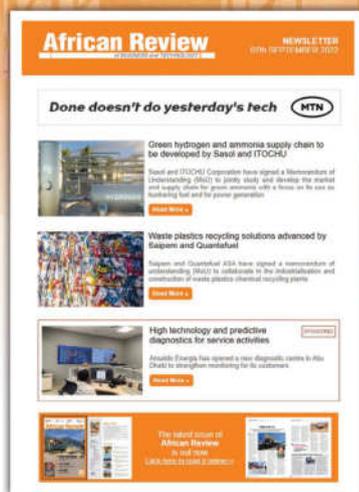
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enhance its role in stimulating the national economy. This strategy not only supports, but actively pushes forward the UAE's commitment to advancing sustainable economic growth, deploying clean energy solutions, driving industrial innovation, and promoting responsible consumption and production. As such, three sectors lie at the heart of this ambition: the energy industry, innovative technologies, and manufacturing.

The purpose of ADIPEC's Smart Manufacturing Exhibition and Conference is to bridge the gap between the energy, manufacturing, and high-tech sectors. These three sectors need to be deeply interconnected to facilitate knowledge sharing and create new cross-sector dynamics to advance a strategy of economic and environmental sustainability. By providing leading local, regional and global manufacturers the opportunity to engage with energy decision makers and vice versa, ADIPEC plays an agenda-setting role for the next successful phase of growth in both the energy and manufacturing industries.

### How do you think ADIPEC will advance the debate and showcase the latest in technology innovation?

Technologies such as augmented and virtual reality, advanced composites, robotics and nanotechnologies have helped the industry move towards more sustainable and resilient smart ecosystems. These technologies, among many others, will be the essence of the Smart Manufacturing Exhibition and Conference.

Highlighting technological advances and innovation remains at the core of ADIPEC's goal to drive change across the industry and provide the sector with a competitive edge by transforming the value chain. As such, the 2022 event will host leading industry experts and high-tech companies and support them in strengthening existing business partnerships and forming new models of cross-sector collaboration. The discussions around innovative technological solutions are the drivers of innovation.

### Are there any other ADIPEC highlights or features that you would like to mention?

The Decarbonisation Zone is an important new addition that reflects the growing need for decarbonisation strategies in the energy industry. The platform will promote ideas, collaboration and showcase the latest innovations as we drive towards cleaner energy and the development of low carbon practices.

The Decarbonisation Theatre will provide an adjacent space for leading industry innovators and solution providers to discuss issues and engage in high-level thought leadership.

The programme includes sessions aimed at providing the latest innovations that will enable all stakeholders to address the growing demand for green solutions, attract strategic partnerships and cross-industry participation, generate funding mechanisms, and convert innovative ideas into a practical solution towards leading a cleaner energy future. ♦

Find more information at [www.adipec.com](http://www.adipec.com)

## Container World expands their product range to include offshore items

WITH GROWING DEMAND from long-term onshore customers, Container World has recently expanded their product range and is now able to offer a wide variety of offshore equipment for the oil and gas industry, such as baskets, skips, reefers and accommodation modules — all certified to DNV 2.7-1 and EN 12079.

Strategically located in Cape Town and with most units available Ex-Stock or Ex-Factory, they are well placed to serve demand from East, West and Central Africa with short lead times and at competitive prices.

Having more than 39 years of experience servicing the African market and with 12 strategically located branches, Container World is ideally positioned and experienced to handle any on or offshore container enquiry.

Their diverse range of products include offshore containers, which are reputed to meet international standards with recognition from certifying bodies like Det Norske Veritas (DNV) and Lloyd's Register (LD); oil rig supply ship containers such as mini containers and dry goods storage containers, which are quite popular in the oil and gas industry for transporting small items like equipment, tools, food and waste on supply ships to and from oil rig platforms; offshore accommodation containers that are designed particularly for offshore oil rigs; equipment and tooling containers, which come with special features like internal tie-down points, cargo net securing points and blocking mechanisms, and food storage containers that can resist rough conditions.

Container World has been providing specialised container



Container World offers a wide variety of offshore equipment for the oil and gas industry.

conversions into the African and sub-Saharan African onshore market since 1983.

Visit the website for a full range of products.

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# COMPRESSOR SOLUTIONS FOR THE HYDROGEN MOBILITY MARKET

Ariel Corporation and HOERBIGER are collaborating to provide non-lube compressor solutions for the future hydrogen mobility market.

**A**RIEL CORPORATION, THE world's largest manufacturer of separable reciprocating gas compressors and HOERBIGER, a global leader in reciprocating gas compressor components technology, have announced their agreement to provide non-lube compressor solutions capable of fulfilling the hydrogen compression requirements of the future hydrogen mobility market, such as public transportation, large fleet vehicles, private trucking companies, trains, boats/ships and other high volume, high pressure, vehicle-fuelling applications.

Ariel and HOERBIGER have worked together over the past year; leveraging the combined research, development, design, material science, manufacturing, and assembly capabilities to provide compressor solutions required by many of the high volume/high pressure vehicle fuelling projects in planning or realisation stages around the world.

HOERBIGER will be enabled to provide packaged compressor solutions as a component to high volume/high pressure fuelling facilities utilising any source of hydrogen.

Ariel Corporation is the largest manufacturer of reciprocating gas compressors in the world, setting the standard in quality, reliability, and customer support. Since 1966, Ariel has shipped more than 65,000



Image Credit: Adobe Stock

*The non-lube compressor solutions will address the hydrogen compression requirements of the future hydrogen mobility market.*

compressors with installations in more than 100 countries. Ariel compressors are utilised in a vast number of applications serving global energy markets, industrial gas markets, and compressed gas

**“ Ariel compressors are utilised in a vast number of applications.”**

transportation, storage, and delivery. As a world-class manufacturer, Ariel sets the industry standard through expert design and manufacturing, industry-leading research and development, and unmatched customer support.

HOERBIGER is active throughout the world in the energy sector, the process industry, the automotive industry, the mechanical engineering sector, in safety engineering, and in the electrical industry. In 2021, its 5,862

employees achieved sales of 1.119bn euros in 131 locations across 46 countries. Our products and services are used in reciprocating compressors, gas flow control units, vehicle drives, rotating unions, explosion protection, gas-powered engines, and in automobile hydraulics. ♦

*For more information contact:  
Ariel Corporation Application  
Engineering Support:  
appeng@arielcorp.com  
HOERBIGER:  
reinhard.dorner@hoerbiger.com*

# AFRICAN RIG COUNT

COUNTRY	July 2021	August 2021	July 2022	August 2022
ALGERIA	21	24	33	33
ANGOLA	4	4	6	6
CAMEROON	2	2	3	3
CHAD	3	3	4	4
CONGO	0	0	1	1
CÔTE D'IVOIRE	1	2	2	2
ETHIOPIA	2	2	2	2
EQUATORIAL GUINEA	0	0	1	1
GHANA	2	1	1	1
KENYA	5	5	4	4
LIBYA	14	13	2	2
MAURITANIA	0	0	1	1
MOZAMBIQUE	1	1	0	0
NIGERIA	7	11	11	10
SENEGAL	0	1	1	2
TUNISIA	1	1	2	2

Source: Baker Hughes

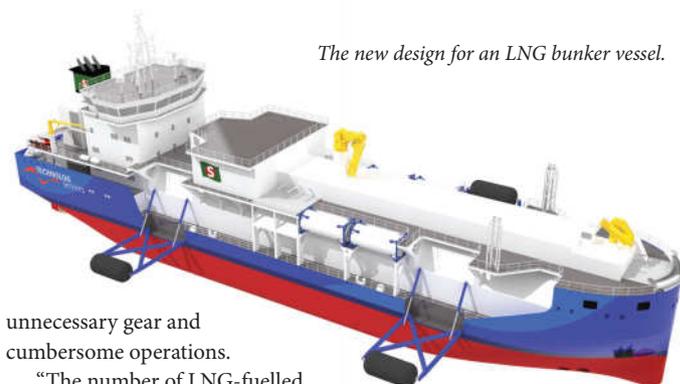
## Schulte Group presents new design for LNG bunker vessel

SCHULTE GROUP HAS presented its next generation design for an LNG bunker vessel (LBV) at the Gastech show in Milan.

The unique vessel design does away with the need for fenders and spacer pontoons, which take time and manpower to manually deploy, replacing them with an integrated outriggering system that is compatible with any vessel type and can be operational in five minutes with the push of a button. Likewise the telescopic crane, which extends more than 40 metres over the water and can be adjusted to any required reach. The vessel fits with all known and soon-to-come LNG-fuelled vessels.

It also features warming-up, gas freeing and aeration equipment to prepare LNG-fuelled vessels for drydock, and flexible design options so that the LBV can be tailored to specific requirements. The bunker vessel can be operated by a smaller crew while still ensuring high safety standards.

Johan Lillieskold, Gas Solutions specialist, LNG Competence Centre, at Schulte Group said during his conference presentation at Gastech, “We examined the market’s current requirements and recognised the need for a straightforward LNG fuel vessel that reduces the cost of last-mile delivery for vessel operators. We have gone back to the drawing board and defined the operational specifications of what the ideal LNG bunker vessel should offer, doing away with any additional or



The new design for an LNG bunker vessel.

unnecessary gear and cumbersome operations.

“The number of LNG-fuelled vessels planned to enter into operation in the next few years is significant as operators increasingly turn to LNG to reduce environmentally and climate-harmful emissions. The current arrangements for LNG bunkers, both land based and sea based, will not be sufficient or suitable for the increasing volume of LNG-fuelled tonnage planned for future years. This new flexible vessel design will serve both today’s tonnage and future newbuilds.”

## Zalux showcases new model at Gastech

ZALUX, SPECIALISING IN industrial lighting solutions, launched a new addition to its innovative Strongex range of luminaires at this year's Gastech exhibition.

The Strongex G2 offers exceptional resistance to harsh environmental conditions, is available with options for Ex Zone 1 or Zone 2 installation and is an ideal solution for applications across the oil & gas, chemical, petrochemical and energy sectors.

It is designed to promote sustainability with low energy consumption, extended lifecycle, low maintenance overheads, and a recyclable PMMA profile. Even though the luminaire offers a 100,000-hour lifetime, internal components can be replaced to further extend life and promote a circular economy.

A high-quality plastic housing protects the luminaire from extreme weather conditions, including corrosive salty environments, and provides high resistance to chemicals that may be present. The unit has no external aluminium parts. Its profile incorporates a heatsink with fins that helps improve heat dissipation within the luminaire and ensures excellent performance.

The model is available in lengths from 300 to 1,500mm. Optics can also be fitted to adapt to the specific needs of each space. The luminaire offers four cable entries, two on each side of the unit, to enable through wiring on the same or opposite sides of the fitting. In addition, it incorporates Ex-certified push-wire internal connectors, with up to eight poles.

## Armstrong's new app can provide pump analytics and insights

ARMSTRONG FLUID TECHNOLOGY, an innovator in the design, engineering and manufacturing of intelligent fluid-flow and control solutions, has announced the launch of a new mobile app that brings all of the value and benefits of the Pump Manager subscription service to users of Android and iOS mobile devices.

Pump Manager is a cloud-based subscription service that provides pump analytics and performance insights along with alerts and notifications. The software also provides early diagnostic warnings, trends and analysis, along with automated reports. Active performance

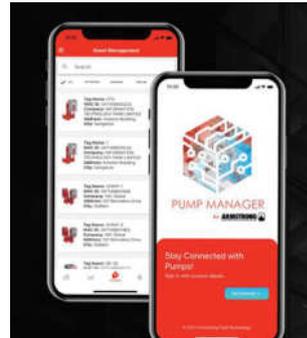


Image Credit: Armstrong Fluid Technology

*Pump Manager also provides early diagnostic warnings and automated reports.*

management learns, predicts and enables optimisation actions to be made based on these learnings to ensure long-term efficiency based on data-driven responses.

The app optimises HVAC performance based on informed decisions and immediate actions, maintaining optimum occupant comfort. It can be optimised in line with data-based learnings to achieve energy savings of up to 30%.

The app is now available for download in the Google Play Store and Apple Store: <https://www.pumpmanager.io/mobileappdownload> and click on either the Google Play button or the Apple Store button, as per your device, to download the app.

*For additional information visit [www.armstrongfluidtechnology.com](http://www.armstrongfluidtechnology.com).*

## Parker Hannifin launches new bent-axis motor series

THE PUMP AND Motor Division Europe (PMDE) of Parker Hannifin has announced the launch of a new variable displacement, bent-axis motor series, V16. It offers unique speed performance and pressure

ratings, resulting in increased productivity and higher safety margins in construction, marine and offshore, oil & gas, and agriculture applications.

The new motors are available in two sizes, V16-220 and V16-

270, and are designed for both open and closed-circuit transmissions with a focus on high-performance machines.

The V16's innovative differential piston control system, along with a three-way valve and best-in-class displacement ratio (5.5:1), offers smooth and precise control.

The patented spherical piston design with laminated piston rings provides a high shaft speed capability, up to 30% higher than competitors. In combination with the high-pressure level, up to 550 bar, the V16 offers enhanced performance and long service life. The spherical piston design also enables high volumetric efficiency of up to 99%. With the ability to downstroke motors to zero-displacement and idle, significant fuel savings can be achieved.



Image Credit: Parker-Hannifin

*The model offers unique speed performance and pressure ratings.*

*Learn more at <https://discover.parker.com/V16>.*

## Intelligent Wellhead Systems joins Corva to advance real-time safety solutions

INTELLIGENT WELLHEAD SYSTEMS (IWS) has joined the Corva Partnership Program to optimise completions operational performance and maximise well productivity in the process.

IWS and Corva are working together to bridge the industry need for improved health, safety and environment (HSE) performance on worksites and enhance capital efficiency throughout pumping.

IWS have leveraged Corva's 'Dev Center', crafting an app that integrates data from IWS sensors into a clear-to-follow format, improving clarity and efficiency.

"With the launch of SIMOPS, digital innovators like IWS are able to build and scale robust industry solutions in a fraction of the time on the Corva App Store, a rapidly expanding ecosystem of Corva and third-party apps that supports 7,000 daily users globally," said Ryan Dawson, founder and CEO of Corva.

"The Corva App Store has become a catalyst for digital oilfield innovation, fast tracking the deployment of new solutions that drive operational performance and wellsite safety to new levels. The



Image Credit: Corva

*The app leverages Corva's existing technology, integrating IWS' sensor tech.*

pairing of IWS with Corva's industry-leading user experience and app delivery platform is a perfect example of what we are achieving through collaboration with many more exciting opportunities for joint innovation on the horizon."

## New Expro technology is estimated to reduce 146 tons of CO<sub>2</sub> from rigs

ENERGY SERVICES PROVIDER Expro is leading industry efforts to meet environmental targets with its new technology, which aids drilling contractors and operators in cutting an estimated 146 tons

of CO<sub>2</sub> emissions annually.

The new innovation offers greater rig floor automation. The iTONG system marks the technological advancement of single-push button tubular make-up solutions, allowing operators

to control, execute, verify and validate every connection make-up via a tablet or control chair. It ensures joints of tubing and casing can be marked to a specific torque, or broken out in an automated sequence, with the single push of a button.

Jeremy Angelle, vice president, Well Construction, said: "iTONG offers seamless integration into existing automated rig operations and marks a key step toward fully autonomous tubular running.

"Digital solutions are increasingly being deployed to enhance operations, improve reliability for well integrity, and reduce personnel on the rig floor, which is resulting in improved safety and efficiency, with lower operational costs across the industry."



Image Credit: Expro

*The system advances current single-push solutions.*

## Enteq Technologies unveils real-time comms solution

ENERGY SERVICE TECHNOLOGY and equipment supplier Enteq Technologies has announced the launch of its latest innovation in downhole drilling technology.

The XXT-Hop series allows drilling contractors to access realtime data during live operations, offering a more efficient solution for operating equipment.

The communications device can be used in conjunction with Enteq's rotary steerable system (RSS), the SABER Tool, or configured to work with other RSS and measurement while drilling (MWD) systems.

XXT-Hop removes the need for physical connectors, dedicated collar lengths and enables logging while drilling to be run below MWD systems, rather than above, ensuring it sits much closer to the bit. This means, through accessing realtime data during downhole activity, contractors can make better and more efficient decisions.

Andrew Law, CEO at Enteq Technologies said, "Enteq's independent status, established engineering expertise and history as a trusted provider of reliable downhole products, stands us in strong stead to continue pioneering innovative products, such as the XXT-Hop series, which identify current inefficiencies in the market and provide solutions to address them.

"Technology has a crucial role to play in the downhole drilling sector, and will be essential to the industry's future, not just in an economic sense, but with environmental impact and emission reduction goals in mind."

# Hiber debuts satellite-powered pipeline monitoring solution

HIBER, THE IOT-AS-A-SERVICE provider that serves the oil and gas sector, has expanded the capabilities of its HiberHilo solution to transform remote pipelines into continuous digital streams of operational data. HiberHilo pipeline monitoring makes it economically feasible to include constant monitoring of even the most remote pipelines to reduce risk, increase uptime and lower operational and maintenance costs.

“Our oil and gas customers have been extremely satisfied with the capabilities of HiberHilo on wellheads, and challenged us to deliver a more comprehensive network view of their extraction and distribution operations – especially those situated in remote areas where it’s economically unfeasible to implement an over-the-air digital connection,” said Hiber CEO Roel Jansen.

Pipelines present potentially enormous environmental and reputational risk to oil and gas operators, but until now, monitoring them has been expensive. For example, the pigging of a pipeline is important for maintenance and to optimise flow, but it is costly. By monitoring the pressure, flow, or temperature of a pipeline and its contents at strategic points, HiberHilo helps optimise the operation of pipelines at a low price. This is especially valuable for pipelines in



Pipelines can present environmental and reputational risk to oil and gas operators.

Image Credit: Adobe Stock

gathering networks or remote parts of transmission networks.

“With HiberHilo’s new, expanded capabilities, we can deliver reliable monitoring services to remote pipelines at a breakthrough price. This means operators gain access to efficient and economical operation of more of their pipelines, enabling higher throughput, improved pipeline integrity and safety across more of their pipeline networks, while meeting risk management and sustainability goals,” added Jansen.

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# USING FLARE GAS TO OPTIMISE EFFICIENCY IN THE ENERGY TRANSITION

Hesham Tawfik Elshamy, country manager for Egypt at Aggreko Africa, discusses how flare gas can be utilised to generate electricity, thereby decreasing wastage, reducing carbon footprint and saving money.

**A**S ORGANISATIONS ACROSS the globe continue their energy transition, it is becoming increasingly important for them to create long-term partnerships to support them in that journey. According to Hesham Tawfik Elshamy, there is an enormous opportunity for oil and gas companies to not only transition to cleaner energy, but to also reduce wastage that results from flare gas.

“There is a global initiative to reduce gas flaring, with the World Bank aiming to eliminate routine flaring associated with oil production by 2030,” he says. “While Egypt as a country has been making great strides in reducing flare gas, the country is still ranked among the top 30 flaring countries in the world, according to the 2022 Global Gas Flaring Report. And with access to electricity being a challenge across Africa, there is significant opportunity to utilise this flare gas to generate electricity for the continent.”

**“There is huge potential in harnessing flare gas as a resource to generate power for the continent.”**



An NOC in Egypt saved around US\$25mn by utilising flare gas instead of diesel.

Image Credit: Aggreko

Aggreko Africa has partnered with a national oil company in Egypt to optimise their total cost of energy and aid them in the energy transition, while enhancing their profitability. “The client has one of the biggest oil production fields in the Western Desert. They used to have scattered diesel generators over every single well, resulting in significant costs to electrify the production field,” says Elshamy. “Aggreko proposed a centralised power station utilising flare gas instead of diesel, to eliminate the waste associated with flare gas, reduce their carbon footprint, and ultimately drive down the cost of energy for the company.”

Using Aggreko’s bespoke solution consisting of their gas generators, transformers, and switchgear, they were able to replace all their diesel generators, connect all the wells through overhead transmission and supply them with around 10 Megawatt of continuous

electricity, while saving around 80,000 litres of diesel per day.

“The total saving for them is around US\$25mn,” Elshamy says. “Not only is that a significant cost-saving, but it helps them reduce their carbon footprint as well.”

Aggreko has been operating in Egypt for several years and is aggressively investing in the Egyptian market, not only through their equipment, but also through local skills development.

“We invest heavily in ensuring that we have the right skills on the ground in the countries we operate in across the African continent,” says Elshamy. “There is huge potential in harnessing flare gas as a resource to generate power for the continent. It helps reduce the energy shortage in Africa, while eliminating waste and reducing emissions.”

The project is also scalable, and the output can be increased to 15 Megawatt, providing the client with the redundancy they need. The bespoke design also

allows for further future expansion, should it be required.

“The project is structured so that it can either be extended, or the client can purchase the entire plant at the end of the project. We have the capabilities to design and engineer extremely complex gas flaring to power solutions to help our customers achieve their target emissions and reduce their cost of energy. In addition to that, we provide them commercial flexibility by removing the need for heavy upfront capital investment,” he concludes.

“This is part of Aggreko’s strategy to build long-term energy solutions partnerships across the African continent. Using flare gas to generate electricity also aligns with our global strategy to reduce our diesel footprint by 2030, by providing clients in the region with a variety of hybrid solutions to help incorporate alternative fuel sources as they seek to transition to cleaner and greener fuel sources.” ♦



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