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Source: ENI

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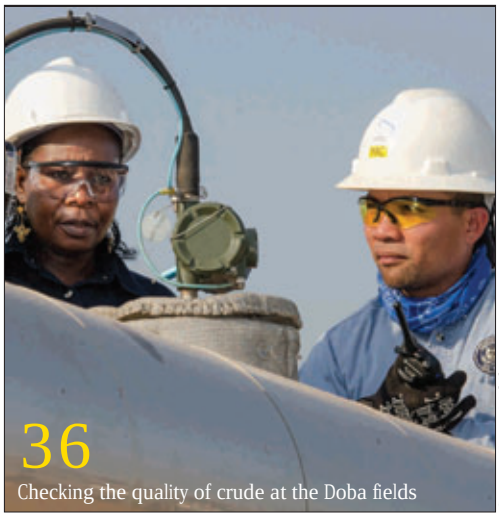
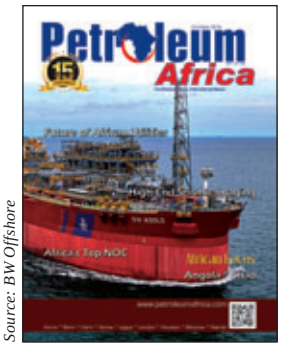


Source: ExxonMobil

DEPARTMENTS

ON THE COVER



Source: BW Offshore

Gabon's Tortue Field produces first oil through the BW Adolo FPSO

Pirates Kidnap 12 in Nigeria

Pirates kidnapped 12 crew members from a Swiss-owned bulk carrier offshore Nigeria. Geneva-based Massoel Shipping company said that the *MV Glarus* bulk carrier was attacked by pirates off Nigeria's coast and 12 of its 19 crew members were kidnapped, AP reported.

The carrier was attacked as it sailed from Lagos to Port Harcourt with a load of wheat. The pirates boarded the ship using long ladders and cut razor wire on the deck to make their way to the bridge, according to media reports out of the West African nation.

The Nigerian Maritime Administration and Safety Agency (NIMASA) told Reuters recently that seven of the 12 crew members kidnapped were Filipinos. Other crew members kidnapped included one citizen each from Slovenia, Ukraine, Romania, Croatia, and Bosnia.

Egypt Sentences 75 to Death by Hanging

On September 8, 75 Egyptians were sentenced to death by hanging by Judge Hassan Farid for their part in a 2013 organized sit-in which turned violent at Rabaa square. Hundreds of protestors were killed by security forces, over 800 according to Amnesty International, while authorities claim over 40 security personnel were killed in the same incident.

The sit-in occurred a few weeks after Abdel El Sisi, the current president, took power in a military coup from Muslim Brotherhood president Mohammed Morsi.

Among those sentenced to death are senior Muslim Brotherhood leaders Essam al-Erian, Mohamed Beltagi, and Islamist preacher Safwat Higazi.

Since El Sisi officially took power in 2014, hundreds of alleged dissenters and political opponents have been sentenced to death for crimes ranging from belonging to an illegal organization to planning terrorist attacks, in Egypt's effort to crack down on extremism.

The crackdown has recently extended beyond Islamist figures. Last month, the Egyptian prosecutor general ordered the detention of Masoum Marzouk, a former diplomat and war veteran, for 15 days pending an investigation into his call for a referendum on Sisi's government.

Recently, the president ratified a law regulating social media accounts, officially to crack down on misinformation, and providing for the punishment of journalists who spread false information. The law places social media accounts with more than 5,000 followers under the supervision of the top media authority, which can block them. Critics say the law intends to silence the news media and opposition groups.

First VP of South Sudan Addresses UN Assembly

Taban Deng Gai, the First Vice-President of South Sudan, addressed world leaders at the United Nations General Assembly, highlighting his country's efforts to pursue peace. "As brothers and sisters, we have hurt each other," said Gai. His country, gripped by conflict for nearly five years, is seeking "national healing" he said, through an inclusive, nationwide dialogue process.

Source: Jill Craig, VOA

Taban Deng Gai

A multi-layered approach has been launched in South Sudan to repair its "social fabric," he added, and its "grassroots component" is working with local communities to identify causes of division while also searching for solutions on how to heal them.

"The process allowed for those who didn't have an opportunity to have their voices heard to begin putting across their various viewpoints," said Gai, noting that such information will be vital as the country moves forward in its peace process. The South Sudan leader also highlighted the recent agreement between President Salva Kiir and his former Vice-President Riek Machar on ending violence that has claimed tens of thousands of lives and displaced millions across the world's youngest nation.

He added that the Government of South Sudan welcomes the guarantors of the agreement to monitor its implementation and that it encourages the Intergovernmental Authority on Development (IGAD, an eight country trade block in Africa) and the African Union to work with the UN Security Council on the support that can be provided by the UN-mandated Regional Protection Force in the country to ensure that peace holds in his country.

EU and the ACP Group of States Negotiate New Partnership Pact

The EU and 79 countries in Africa, the Caribbean and the Pacific (ACP) group will begin negotiations on the future of their cooperation after 2020. The ambition is to transform today's partnership into a modern political framework geared to deliver on the Sustainable Development Goals.

The countries in the EU and the ACP represent more than half of all UN member countries and unite over 1.5 billion people. The current partnership, governed by the Cotonou agreement, is one of the longest-standing and most comprehensive frameworks for cooperation between the EU and developing countries. The current agreement expires in 2020.

The partnership seeks closer political cooperation on the world stage to tackle major global challenges, aiming to be a shining example of multilateralism as the cornerstone of a rule-based world order. In concrete terms, this will notably mean working jointly towards the Sustainable Development Goals. It will also guide the partnership countries' joint efforts to address pressing challenges such as climate change, migration and peace and security. To have the intended impact, the future partnership will adapt to the new realities in the European Union, Africa, the Caribbean and the Pacific, taking into account geographical specificities. The future partnership will aim at facilitating strong alliance-building in global forums and address key issues from which current and future generations alike can benefit.

Gambia Ratifies UN Convention on Investor-State Arbitration Treaty

On September 28 Gambia ratified the United Nations Convention on Transparency in Treaty-based Investor-State Arbitration (the Mauritius Convention on Transparency). Gambia is the fifth State after Canada, Cameroon, Mauritius and Switzerland to ratify the Convention. The Convention entered into force on October 18, 2017. In Gambia, the Convention will enter into force on March 28, 2019.

Since the signing ceremony at Port Louis, Mauritius in March 2015, the following States also signed the Convention: Australia, Belgium, Benin, Bolivia, Congo, Finland, France, Gabon, Germany, Iraq, Italy, Luxembourg, Madagascar, the Netherlands, Sweden, Syria, the UK and the USA.

The Mauritius Convention on Transparency aims to provide States and regional economic integration organizations with an efficient mechanism that extends the scope of the UNCITRAL Rules on Transparency in Treaty-based Investor-State Arbitration (Rules on Transparency). The Rules on Transparency

provide procedural rules that ensure transparency and public accessibility to treaty-based investor-State arbitration, the proceedings of which have traditionally been conducted behind closed doors.

Political Influence and Patronage in the 'New Angola'

The new government in Angola has made transparency and economic reform its much vaunted manifesto, which is buying it good will among international investors and is boosting its popularity at home. However, central tenets of control over the country's political economy remain firmly entrenched with the same elite that has dominated Angola for generations.

At the center of the new political patronage structure stands former vice president Manuel Vicente, who has returned to the heart of political power in Angola and who through his family and close associates maintains an extraordinary position of influence over the economy.

Vicente was once part of the all-powerful 'Triumvirate' that dominated Angola's business sphere. Through a network of investments and commercial holdings, Vicente is still one of the wealthiest and most influential powerbrokers in the country. Even though he was politically sidelined towards the end of the previous administration, he retains commercial interests across key sectors such as banking, telecoms, energy, and logistics.

Manuel Vicente

Source: Official White House Photo by Amanda Lucidon

Over the past year, Vicente has regained much control over the state oil company Sonangol, as well as the central bank and finance ministry, where his political allies have been appointed into leadership positions. His family is also creating new commercial ties with the family of the new president, João Lourenço, while his closest business associates are benefitting from recent contract allocations. By bringing Vicente back into a position of political influence and shielding him from various international corruption investigations, President João Lourenço has found a powerful ally in his campaign to consolidate his own authority and to prosecute members of the former president's family.

However, the restoration of Manuel Vicente carries significant political, reputational, and transparency risks that are likely to undermine the government's popular manifesto of probity and economic liberalization. This report identifies a number of recent deals and local source intelligence that highlight the prevalence of such risks. It also attempts to uncover the opaque network of overlapping commercial interests that once again threatens to capture Angola's economy and to concentrate the country's substantial wealth within the hands of a small political and business elite.

Source: Exx Africa

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MESSAGE
FROM THE EDITOR

I have discussed the issue of making regulatory regimes in the continent on this page many times as my regular readers will know. This edition however will take a twist and focus on the positive developments coming out of the African petroleum industry's regulatory front.

Having heard the message loud and clear from a variety of principals around the globe, Africa's lawmakers have taken heed and many are acting accordingly. From Algiers to Luanda, governments are proving they are willing to listen and work on the necessary steps required to bring your petrodollar investments back to their countries.

Over the past several months, Ministry and NOC participation at Africa-specific oil and gas conferences, as well as investment events, has been high, with officials highlighting bid rounds and new terms, hosting roadshows and data rooms, and engaging potential investors from around the world. Africa's policymakers and promoters have traveled to China, the US, EU/UK and beyond to let you know they are willing to deal. And these efforts are paying off with investors demonstrating they are listening. This can be seen at the number of events they are flocking to in order to seal the next "great deal."

Examples can be seen with Algeria, Angola, Egypt, Gabon, Ghana, and Nigeria, and more. You will also see countries who have had exploration activity dwindle or not yet pick up, revamping or instituting new regulations to attract those firms willing to take a chance on them. Countries like Ethiopia, Somalia, Sudan and South Sudan are all looking for that special combination of acreage potential and regulatory attractiveness that will bring in the petro-investment dollars. Officials from each of these countries are making the rounds, promoting either the attractiveness of their acreage or revisions to their investment laws.

Be sure to read more about the efforts Angola is making to attract new investment to its oil and gas industry in our Oil Security feature. Angola is also featured in Africa Focus along with Chad; keep up on the developments out of these two very different oil producers. Finally, our Technology article features one of the newest seismic successes, while New Products & Services takes a look at some of the latest industry innovations. As always, your comments and suggestions are welcome and can be sent to *info@petroleumafrica.com*.

Dianne Sutherland
Chief Editor

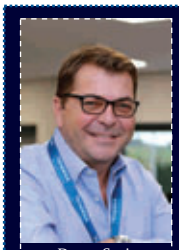
Libya's state-run oil and gas firm **NOC,** its board of directors and employees mourn the deaths of **Abdelaziz Bachir Massoud** and **Wahid Dardour,** who lost their lives during the terrorist attack on NOC's headquarters on September 10. Another 25 people were wounded in the attack, three of those critically.

Saipem reported that **Leone Pattofatto**, a non-executive and non-independent member of the Board and a member of Saipem's Audit and Risk Committee, has resigned. The company also announced that **Stefano Cavacini** will assume the role of CFO with effect from November 15. In the period between **Giulio Bozzini's** leaving and Cavacini's entry, the responsibilities for Administration, Finance and Control functions will be taken by the CEO, **Stefano Cao**.

Odin Estensen

Neptune Energy named **Odin Estensen** as Managing Director of its Norwegian business, based in Stavanger. Estensen joins Neptune Energy from **A/S Norske Shell**, where he is currently the Norway Operated Asset Manager. He has more than 28-years' experience in the industry starting with **Schlumberger** before transitioning to Shell where he held various senior roles across Europe, and also to support operations in the Middle East, Africa and Asia. **Anne Botne**, currently interim country director of Norway, will remain with the company and fully resume her head of legal responsibilities.

Energean Oil & Gas appointed **Iman Hill** as COO. Hill's appointment takes effect November 1. She has over 30 years' global experience in the oil and gas industry. Prior to joining Energean, she was the Technical Director, GM UAE and President Egypt for **Dana Gas PJSC**. Hill also held a variety of positions with **BG**, **BP**, and **Shell** in Egypt and the Middle East.



Davor Saric

Tendeka has appointed **Davor Saric** as its new technology director to help deliver the company's next generation of disruptive technologies. Davor has more than 25 years' experience in the oil and gas sector. Saric has been involved in numerous global field developments and redevelopments as a Production Technology/Petroleum Engineering expert. **Phil Stone**, sub-Saharan business development manager and **Keith Parrott**, area manager – South East Asia, have also recently joined the expanding company. Stone joins Tendeka with 14 years of offshore and operational experience, particularly focused in smart well technologies and completions. Parrot brings over 25 years' service and extensive completions experience within his region.

Gas Innovations Inc appointed **Mike Alexander** as director-executive sales. Alexander most recently worked at a global diversified metals manufacturing company excelling in numerous commercial roles. He has over 41 years of strategic account management experience.

Ayman Amin Sejiny

The Board of Directors of the **Islamic Corporation for the Development of the Private Sector** (ICD) approved appointment of **Ayman Amin Sejiny**, as CEO. Sejiny served as CEO of **Ibdar Bank BSC**, **Bank Alkhair**, **Barclays Capital Saudi Arabia** and as the chairman of **Open-Silicon, Inc** and **Bahrain Financing Company Group**.

Peter Löscher announced his intention to resign as chairman of the **OMV** Supervisory Board at the Annual General Meeting in May 2019.

Elizabeth Paull

Elizabeth Paull was appointed business development manager of **Sonardyne International Ltd.** Paull joins Sonardyne from subsea instrumentation and systems company **Aquatec Group**.

Restrata appointed **Morgan Rees** to the newly created role of Global Head of Monitoring and Response. Rees will bring his extensive experience gained from various senior and advisory roles within the technology, offshore, maritime, and travel risk management industries to the company and its management team.

Markus Rieck

Markus Rieck has taken on the responsibility of sales, marketing and product management of **Voith Hydro Holding GmbH & Co. KG** (CSO). Rieck has many years of experience working with **Alstom** and **Vattenfall**, as well as **GE**. Rieck takes over the position of **Martin Andrae**, who now leads Voith Hydro Ltda. in São Paulo.

Daniel McAteer

RDS, KCA Deutag's global provider of engineering and design solutions to the energy and infrastructure sectors, appointed **Daniel McAteer** as its head of brownfield. McAteer re-joins the firm having worked for the company between 2005 and 2009. During his more than two-decade long career he has held a wide variety of roles, most recently as chief business development officer for **Global Energy Group** and projects and commercial director for **Petrofac Integrated Energy Services**.

To include a corporate personnel announcement in Moving On, write to *info@petroleumafrica.com*. Preference will be given to Africa-specific appointments and to those companies who have interests within the continent; all others will be included on a space available basis.

ENPPI and Wood Group Ink E&P Partnership Deal

Egyptian state company Engineering for Petroleum and Process Industries (ENPPI) and Wood Group signed an agreement on September 22 in the field of subsea development, according to ENPPI. The pair will take on a technical and engineering partnership for natural gas exploration and production through deepwater drilling.

The agreement was signed in the presence of H.E. Eng. Tarek El Molla, the Egyptian Minister of Petroleum & Mineral Resources. The minister commented that the agreement aims to transfer technology and necessary experience between both sides to undergo the needed engineering work for natural gas exploration and drilling in the offshore, as Egypt moves forward with executing mega projects for the development and production of natural gas from the Mediterranean Sea.

Savannah in Gas-for-Oil Swap

Savannah Petroleum signed a gas-for-oil swap agreement with Seven Uquo Gas Ltd and Accugas Ltd. in Nigeria. The company signed a MoU with the two companies to conduct a gas-for-oil swap at the Uquo field in south-east Nigeria.

Seven Uquo's rights to gas production from the field will increase to 100% from 88% and Savannah's ownership of the oil project will be 100%.

In addition to the gas-for-oil swap, Savannah Petroleum has also agreed to acquire the 38% minority shareholders' interest in Universal Energy Resources Ltd, raising its Stubb Creek field interest to 51% from approximately 32%.

"We are extremely pleased to be able to announce that we have reached agreement to increase our interests in two key assets, both through the frontier memorandum of understanding at Uquo and through the buy-out at Stubb Creek," said Savannah Chief Executive Andrew Knott.

Azerbaijan and Algeria NOCs to Expand Cooperation

The state-run firms of Azerbaijan and Algeria, SOCAR and Sonatrach, were the recent topic of conversation between the energy ministers of the two countries. The two men discussed the expansion of cooperation between the two firms. The discussion took place at the 10th meeting of the Joint OPEC-Non-OPEX Ministerial Monitoring Committee (JMMC).

The Azerbaijani Energy Ministry reported that within the framework of this meeting, Azerbaijani Energy Minister Parviz Shahbazov met with Minister of Energy of Algeria Mustapha Guitouni and CEO of Sonatrach Abdelmoumen Ould Kaddour.

At the meeting, they exchanged views on the development of cooperation in the energy sphere between the two countries. Guitouni said that Azerbaijani companies expressed interest in the energy sector of Algeria. According to Minister Shahbazov, a MoU between the relevant ministries is close to completion.

During the meeting cooperation between SOCAR Trading and Sonatrach in the oil sector, as well as cooperation with the "Neftqazelmitedqiqatlayihe" Institute was also discussed.

AGOCO Starts up Abandoned Well

A subsidiary of Libya's NOC, Arabian Gulf Oil Co. (AGOCO) has restored some of its production. According to NOC, the production was added by restoring an old well on the Messla field.

NOC said that its subsidiary restored production at a well that had been abandoned for 16 years. Agoco's General Department of Production used the latest drilling techniques and Schlumberger's Geo-Sphere mapping technology on this project.

A NOC website statement said, "Thanks to the efforts and dedication of the engineers, and implementation of the 'Drilling and Measurements' service at Schlumberger Oilfield Service, well HH86-65 in the Mesla oil field is once again in use." AGOCO is the first company in Africa to use the Schlumberger technology. The HH86-65 is now producing at a rate of 3,000 bpd.

Hit and Miss for TransGlobe

TransGlobe Energy updated its activities in Egypt's Western and Eastern Deserts. The company drilled a well on the North West Sitra concession in the Western Desert targeting a stacked Cretaceous/Jurassic prospect, the NWS 12X. The well was drilled to a total depth of 13,300 ft.

The well encountered the targeted zones however no hydrocarbons were found. The well is being plugged and abandoned. With the drilling of NWS 12X, TransGlobe has met the first phase work commitments.

Prior to January 7, 2019 the company can elect to enter the second and final exploration phase (three years after the extension of phase one). The second exploration phase has a two-well, $6 million work commitment and a mandatory relinquishment of 30% of the original concession area not held by development leases. A final decision on whether the company will elect to relinquish the concession or enter the second exploration phase of the concession will be made following a full evaluation of the data obtained from the wells.

In South Ghazalat (SGZ) the company is preparing the location for SGZ 6X, the second exploration well in the concession. SGZ 6X is located on the eastern portion of the concession offsetting the Raml oil field in the Abu Gharadig Basin. The SGZ 6X prospect is targeting stacked Cretaceous targets similar to the Raml and SW Raml fields. Site construction is under way and it is expected that SGZ 6X will be drilled before year end.

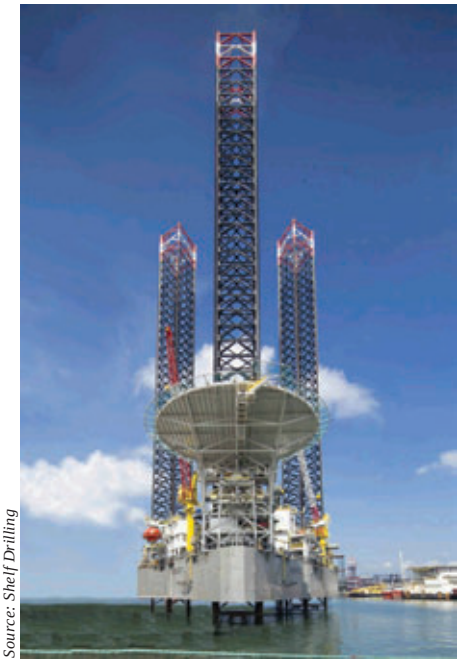

Source: TransGlobe

In the Eastern Desert on the West Bakr, TransGlobe drilled a two-well infill program in the M field resulting in two oil wells during August/September. M-North was drilled to a total depth of 5,113 ft and cased as an oil well. M-North encountered an internally estimated 132 ft of net oil pay. The M-North well is currently producing at around 750 bpd. M-South was drilled to a total depth of 5,077 ft and cased as an oil well. M-South encountered an internally estimated 142 ft of net oil pay. The M-South well was placed on production at an initial rate of about 500 bpd in September. Both of these wells have exceeded internal pre-drill estimates of initial production rates.

Following M-South, the rig was moved to the NW Gharib 38A-7 to drill a potential water injector in the NWG 38A pool. The NWG 38A-7 well is currently drilling as a potential water injector targeting the 38A Red Bed pool in a structurally lower position 0.4 km south of the NWG 38A. The NWG 38A-I well drilled in Q2 encountered oil with an internally estimated 34 ft of net Red Bed oil pay and was placed on production in September at an initial rate of around 110 bpd (following a fracture stimulation). Should the NWG 38A-7 well also encounter an additional oil column, the company has planned another well further south at NWG 38A-8 as a contingency for reservoir pressure support.

Sirius Sources New Jack Up for Ororo Drilling

Sirius Petroleum has decided, by mutual agreement with COSL, to abrogate its agreement with COSL for the supply of a jack-up rig for the drilling program on the Ororo field located in Nigeria's OML 95.



Source: Shelf Drilling

Instead of the COSL rig, the company has sourced and signed an agreement with Shelf Drilling to supply its *Adriatic I* jack-up rig which is scheduled to become available during November. The rig is already in close proximity to the Ororo field.

The proposed rig is fully certified, currently concluding a well campaign with another operator utilizing Schlumberger services and equipment on board the *Adriatic I*, and meets the specifications required for the company's proposed drilling program at Ororo-2 and Ororo-3.

As previously announced, Sirius and its operational partners, Schlumberger and Add Energy intend to spud the Ororo-2 at the earliest possible time during Q4 2018.

Libya Reaches Over 1.2 Million Daily Barrels

Reaching heights not seen in five years, Libya's oil production has hit almost 1.3 million barrels per day (bpd). According to Mustafa Sanalla, NOC chairman, production is now 1.278 million bpd.

Sanalla said this improvement is the result of the decline in clashes around production basins. It is even possible to add thousands of barrels to the current production, given the security level at the moment, he said.

The NOC chief said that the state firm is targeting 2 million bpd by 2022, increasing an earlier stated goal to reach pre-crisis levels of 1.6 million bpd.

Sonatrach and Total Sign Comprehensive Partnership Agreements

Algeria's state-run firm Sonatrach, and French major Total signed agreements as part of the comprehensive agreement partnership formed in 2017. A new concession contract to jointly develop the Erg Issouane gas field on the TFT Sud permit was signed between the state-run firm, Total and Algeria's Alnaft.

The TFT Sud permit is located south of the Tin Fouyé Tabankort (TFT) field, of which Total is a long-standing partner. Sonatrach (51%) and Total (49%) will develop the reserves of Erg Issouane located on the TFT Sud permit estimated at more than 100 million barrels of oil equivalent (boe).

The development, which represents an investment of around $400 million, will be tied back to the existing TFT gas treatment unit by a 22 km-long gas pipeline. First gas is expected late 2021. The partners have also signed a gas marketing agreement. The concession contract will become effective upon approval by the Algerian authorities.

In June 2017, Total signed a new concession contract for a period of 25 years to extend the exploitation of the field, giving Total a 26.4% interest alongside Sonatrach (51%) and Repsol (22.6%). This contract has just received the approval of the Council of Ministers.

In March 2018, Total started up production from the Timimoun gas field in southwestern Algeria. The Group has a 37.75% interest in the field, which has a production capacity of 5 million cubic meters of gas per day (around 30,000 boe/d).

Egypt Signs $1 Billion in Nile Delta Deals

Egypt signed a deep-water oil and gas exploration deal with Shell and Petronas worth around $1 billion for acreage in the West Nile Delta. The companies are expected to drill eight wells, according to Egypt's petroleum ministry.

In addition to the Shell and Petronas deal, the Ministry of Petroleum signed a deal with Rockhopper, Kuwait Energy and Dover Corp. worth $10 million. This deal is for exploration in Egypt's Western Desert.

BP and ENI to Partner in Libyan E&P

Libya's state-run oil and gas firm, NOC, with BP and ENI, signed an agreement which is expected to lead to BP and ENI working together to resume exploration activities on a major E&P contract in the North African country.

The three signed a Letter of Intent (LoI) in London that calls for the parties to work towards ENI acquiring a 42.5% working interest in the BP-operated EPSA in Libya. On completion, ENI would also become operator of the EPSA. BP currently holds an 85% working interest in the EPSA, with the Libyan Investment Authority holding the remaining 15%.

ENI currently holds existing exploration and production activities and infrastructure adjacent to onshore areas of the EPSA. Transferring the operatorship creates the opportunity for the resumption of activity following completion of the transaction and relevant regulatory approvals.

NOC chairman Mustafa Sanalla commented: "This agreement is a clear signal and recognition by the market of the opportunities Libya has to offer and will only serve to strengthen our production outlook. The agreement's social development guarantee is an important sign of our joint commitment to our staff and the communities in which we work. This initiative will hopefully drive further inward investment and facilitate higher production levels."

Bob Dudley said: "This is an important step towards returning to our work in Libya. We believe that working closely together with ENI and with Libya will allow us to bring forward restarting exploration in these promising areas."

Claudio Descalzi said: "This is an important milestone that will help to unlock Libyan exploration potential by resuming EPSA operations that have remained suspended since 2014. It contributes towards creating an attractive investment environment in the country, aimed at restoring Libya's production levels and reserve base by optimizing the use of existing Libyan infrastructure."

The EPSA includes three contract areas, two in the onshore Ghadames Basin and one in the offshore Sirt Basin, covering a total area of around 54,000 sq km. Originally awarded in 2007, work on the EPSA has been suspended since 2014.

As part of the LoI, the signatories also reconfirmed their commitment to promote technical training and other social initiatives in Libya. Also as set

out in the LoI, the companies intend to finalize and complete all agreements by the end of this year, with a target of resuming exploration activities in 2019.

BP Awards Aker Solutions Brownfield Work Offshore Angola

Aker Solutions was awarded a five-year agreement to supply brownfield modifications, maintenance and operations support for BP's Greater Plutonio and PSVM fields offshore Angola.

The scope of work covers the supply of engineering, procurement, and construction services for brownfield projects on the FPSO vessels located at each field. This includes support for upgrades to process, chemical and marine support systems, as well as refurbishment of aging piping and equipment.

Source: BP

Greater Plutonio

"We are delighted to support BP in Angola, an important market for Aker Solutions," commented Luis Araujo, CEO at Aker Solutions. "We have a strong record of successful delivery in Angola, having provided subsea support to key projects such as Dalia and Kaombo. We are now pleased to expand this offering to include topside maintenance, modifications and operations services in West Africa."

According to Aker Solutions, this new contract will benefit from an extensive local training program that it has been driving, developing strong in-country engineering competence for both subsea lifecycle services and topside maintenance, modifications and operations. This ongoing commitment will help secure vital skills for the future of the energy industry in Angola.

Soco Enters Egypt

Soco International reached an agreement that will give it access to acreage in Egypt. The company reached an agreement to acquire Merlon Petroleum El Fayum Co. for a cash consideration of approximately $215 million.

The consideration will be satisfied through the payment of approximately $136 million in cash and the issue of roughly 66 million new SOCO shares, representing 19.75% of SOCO's current issued share capital. SOCO will also arrange for the repayment of Merlon's net debt, which was about $22 million at the end of 2017.

According to the company, the acquisition is a significant step forward in SOCO's stated objective of expanding and diversifying its resource base to create a full-cycle, growth orientated E&P company of scale.

Merlon is a privately-owned oil and gas company with a 100% operated working interest in the onshore El Fayum concession in Egypt. The El Fayum concession is located in the highly prolific Western Desert, in proximity to local energy infrastructure.

The acquisition is expected to add immediate cash generative production and incremental 2P (net) working interest reserves of 24 million barrels and 2C (net) working interest resources of 37 million barrels. Merlon produced 7,859 bpd (net) in 2017, with the potential to increase production levels to a target in excess of 15,000 bpd (net) by 2023 through the recovery of its discovered 2P reserves and 2C resources.

In addition, the El Fayum concession will provide SOCO with nearly 1,570 sq km of exploration acreage with multiple, identified exploration prospects in proven petroleum systems, as well as a large underexplored area in the northern portion of the concession.

Algeria and Morocco Strengthen Natural Gas Relationship

Morocco and Algeria are solidifying their cooperation. Morocco will extend contracts to import gas from Algeria and take full ownership of a gas pipeline linking Algeria to Europe, Algerian Minister of Energy Mustapha Guitouni said to reporters following a meeting with his Moroccan counterpart Aziz Rabbah.

Guitouni said that further meetings will take place to agree on the terms of the contract. "We discussed gas and electricity supply," he told reporters without providing details.

Seven years ago, the two countries signed a 10-year contract that had Morocco importing 640 Mmcm of gas through the Algerian pipeline to Spain. Morocco will take ownership of the pipeline in 2012, Guitouni said.

Good Testing Results for Opuama and Ubima

Eland Oil & Gas, through its JV subsidiary Elcrest Exploration and Production Nigeria has continued testing and production of the two reservoirs penetrated by the Opuama-10 well. The long string producing from the deepest of these reservoirs the D5000, flowed at 3,159 bpd and the short string, producing from the D1000, flowed at 3,739 bpd.

It is expected following completion of testing that stabilized initial production from Opuama-10 will be in excess of 5,500 bpd with aggregate production from the Opuama field expected to average above 29,000 bpd.

The *OES Teamwork Rig* has drilled Opuama-11 to total true vertical depth of 7,914 ft and the final casing string has been run and cemented. The three target zones, D3500, D4000 and D2000 reservoirs recorded aggregated net pay of 185 ft of apparent vertical thickness.

The D3500 and D4000 reservoirs will be perforated at this stage and a Maximum Efficiency Rate Test (MER Test) incrementally testing the well at increasing choke sizes will be performed. Initial production from the test is expected in September. It is expected that initial gross production from Opuama-11 will be between 4,000 and 6,000 bpd.

On its Ubima field, the company said that well testing operations are currently in progress on the D1000 reservoir to gather important information on oil characteristics and reservoir performance. To date, the F7000 reservoir was tested at flow rates of up to 2,500 bpd. Upon completion of the D1000 test, the potential to test the E1000/E2000 will be evaluated and the well will be completed with a dual completion with the KCA Deutag T-57 rig.

Aqualis Offshore Positions Egina FPSO

Aqualis Offshore successfully completed its position keeping role for the Egina FPSO which is now safely moored in Nigerian waters. The Aqualis team of position keeping masters on board the FPSO first oversaw the installation of the first four mooring lines, which took the FPSO to storm safe condition. The team then continued their role for the installation of four further mooring lines. In total, the Egina FPSO is now spread moored on 16 mooring lines (4x4).

Aqualis Offshore delivered the position keeping work as a subcontractor to EPCIC contractor for the FPSO, Samsung Heavy Industries (SHI).

"The entire position keeping job and installation of the first eight mooring lines was completed safely and on schedule," said Phil Lenox, director – Asia Pacific, Aqualis Offshore.

Total is the operator of the Egina field, which is located off the coast of Nigeria at water depths of more than 1,500 meters.

Saltpond Being Decommissioned

Ghana's state-run oil firm, GNPC, has reported that its longest producing field is in the process of being decommissioned. According to GNPC, the actual process will start after the decommissioning plan has been finalized by a consultant and approved by the Minister of Energy.

Source: SOPCL

GNPC General Manager, Geoscience, Benjamin Kwame Asante, in an interview with Ghana Business & Finance Magazine said that although operations had ceased at the field, there was a skeletal staff maintaining it ahead of the decommissioning, on the sidelines of the recently concluded 2018 Ghana Gas Forum.

The field is operated by the Saltpond Offshore Producing Company Limited (SOPCL).

Unique Group Wins High Value Contract

Unique Group's Marine & Subsea division has entered into a high value contract with Southern African Shipyards to provide a turnkey package for Hydrographic Survey vessels and Hydrographic office set up.

The project will include multiple new build vessels – main vessel and support vessels. Unique Group will act as a technology partner to the shipyard and provide the vessel's Dynamic Positioning systems and Navigational equipment package.

As part of the project, Unique Group will also provide complete integration of the Hydrographic equipment package, which will include centralized operations between the main vessel and smaller support vessels.

The Hydrographic office set up onshore will also be updated with new computer hardware and the latest processing software for chart production, data collection, processing, reporting and backup solutions. Unique Group will provide a full package including technical support and relevant operational and maintenance training for the staff.

Harry Gandhi, CEO Unique Group commented, "Unique Group has always been at the forefront of innovation and customer satisfaction. Our team specializes in working with partners to deliver projects on time and with the best available solution. We are pleased to have been chosen for a significant project to provide complete vessel integration for a reputed client like Southern African Shipyards."

CPC to Up Chad's Production Totals

Chad is expected to see an increase in production next year as Taiwanese oil producer, CPC Corp., will begin production. The firm will produce an estimated 9,800 bpd according to Fan Chen-Hui, head of CPC's international exploration and production activities. Production is expected to start prior to the end of 2019 at the latest.

The announcement was made following the granting of a 25-year business license to CPC in the country.

In addition to oil, the company's development project is expected to produce natural gas at a rate of 35,000 cubic metric meters of natural gas per day. This will be the largest production project for the company outside the territory of the East Asian island.

Fifth Consecutive Oil Find for Savannah in Niger PSC Area

Savannah Petroleum has knocked out another discovery in Niger. The company's Zomo-1 exploration well, drilled on the R3 portion of the R3/R4 PSC Area has been deemed an oil discovery.

The discovery of oil marks the company's fifth consecutive discovery in its exploration campaign on the R3 portion of the PSC.

Preliminary results based on the interpretation of the available data set (which includes wireline logs, fluid sampling and pressure data) indicate that the well has encountered a total estimated 5.4 meters of net oil-bearing reservoir sandstones in the E1 reservoir unit within the primary Eocene Sokor Alternances objective. Additional pay is thought to potentially exist in the well but will require further technical evaluation and/or testing to confirm.

Wireline logs indicate the reservoir properties to be good quality and the available data indicates light oil consistent with Savannah's discoveries to date, and in line with offset wells and the depth/API trend observed across the basin. Oil samples have been taken and returned to surface using wireline testing equipment.

The well was drilled by the GW 215 Rig to a total measured depth of 2,499 meters, and encountered the main objective targets at, or near, their prognosed depths. The well took a total of 20 days to reach target depth, and all operations were expected to be completed within 28 days of spud. This compares with a pre-drill expectation of 22 days to reach target depth and 30 - 35 days to complete all drilling operations. No significant geological or drilling hazards were encountered.

In addition, Savannah plans to conduct a well test on its Amdigh-1 well in Niger. It is intended that an electric submersible pump will be installed downhole using a workover rig during the month of December 2018. The workover rig is expected to be hired from Great Wall Drilling Company Niger SARL. Savannah expects to rent the associated surface equipment required for the test.

Senegal Offers Two Blocks

Senegal's state-run oil and gas firm Petrosen, announced that a licensing round for two blocks has been launched. The licensing round covers the Senegal Offshore South and Deep Offshore Senegal blocks.

Oil and gas companies have been invited to send their applications to the Senegalese Ministry of Petroleum of Energy and had until October 31 to submit them. It should be noted that one of these blocks, the Senegal Offshore South block, is the subject of a dispute between the government and African Petroleum.

"In the oil code that we are drafting and which we have adopted, this is what we have will take on as a step forward – and that is to say that the blocks will be assigned by tender," said President Sall, according to a report by *Agence de Presse Sengalese.*

In addition to the invitation to bid on the two blocks, the country plans to offer up a bid round for 10 blocks in Q1 or Q2 2019.

Eco Atlantic Gets the Nod for Namibian Well

Eco (Atlantic) Oil & Gas received necessary approvals from the Namibian Ministry of Environment and Tourism to drill an exploration well on PEL 30 (Cooper Block). The approvals are for the final Environmental Clearance Certificate.

Eco has completed seven years of exploration on the Cooper Block, including regional geological studies, fracture analysis, slick studies, the review and interpretation of 5,000 km of 2D and 1,100 sq km in 3D surveys. In addition to its own ongoing interpretation, Eco has also contracted independent studies from Petroleum Geo-Services, Azinam, Tullow Oil and Gustavson Associates.

Eco and its partners have identified the Osprey prospect for its first well. The Osprey is an 882-million barrel Aptian/Albian target within a sand filled channel and fan system in the Cretaceous sequence. The license partners on the Cooper Block continue to contribute their own independent analysis and to work towards determining an exact location for the drilling of an exploration well on the Osprey prospect.

Gabon's DRNEM-1 Finds Oil

BW Offshore successfully drilled and completed its Ruche North East (DRNEM-1) appraisal well in Gabon. The well, located on the Dussafu License, encountered oil on the Ruche North East structure.

The DRNEM-1 well encountered 40 meters of pay in the Gamba and Dentale formations in the original wellbore. An appraisal side-track was drilled approximately 800 meters north-west of the original wellbore and encountered 34 meters of pay in the Gamba and Dentale formation. The technical and commercial teams will now perform an evaluation of the potential development of these resources.

The company has completed its drilling on the Dussafu for 2018 and subsequently has released the rig used during its drilling program.

In addition, BW Offshore is evaluating the Tortue Phase 2 development project with final investment decision scheduled for Q4 2018. The internal estimate of 2P gross reserves for the Tortue field Phase 1 (two wells) and Phase 2 (four wells) are between 30 to 40 million barrels, excluding contingent reserves.

Madagascar to Launch Licensing Round

OMNIS, in partnership with TGS and BGP, announced a licensing round in Madagascar, to be launched at Africa Oil Week in early November.

Exploration in Madagascar began in the early 20th century with the discovery of heavy oil-rich sedimentary basins in the west, however this frontier region remains relatively under explored. The island shares a maritime boundary with Mozambique and the same oil province where large quantities of natural gas have been discovered.

Studies conducted in collaboration with TGS and BGP have resulted in new data that suggest there is significant potential for future discoveries both on and offshore.

Sierra Leone Suspends Licensing Round

The Director General of the Sierra Leone Petroleum Directorate, Timothy Kabba, revealed that the country's latest licensing round has been temporarily suspended. Kabba, who was recently appointed to his position, has decided to expand the dialogue and enter into a period of industry consultation.

This consultation process is expected to last for up to six months and requires the temporary suspension of the ongoing Fourth Licensing Round.

Kabba commented, "The Republic of Sierra Leone is committed to attracting long-term investment through the development of its natural resources. The Petroleum Directorate's mission is to deliver this investment through a process that creates maximum value for both the investor and the country's people. I look forward to meeting with the industry during this important consultation process."

Jonathan Copus, CEO of the Getech Group commented, "The offshore waters of Sierra Leone contain proven petroleum systems and the country's Fourth Licensing Round has generated significant levels of interest. This has led to a busy and wide-ranging dialogue with a variety of high-quality international oil and gas companies. Through a process of consultation, the staff of the Petroleum Directorate and Getech will work in partnership to narrow and focus the License Round conversation – the shared goal being the successful conclusion of that Round."

Tower Sees Thali Extension

The government of Cameroon has granted Tower Resources a one-year extension on its Thali License. The extension is contingent on the company's rig contract for the upcoming well plan being finalized and executed within three months.

The company has not yet received formal notification by letter from MINMIDT but has been told to expect such a letter shortly. There is also some further documentation to be completed and the company will make a further announcement when this is done.

In the meantime, work on the Reserve Report and selection of rig and service contractors for the upcoming well is continuing. Tower's internal G&G work is now substantially complete and is being reviewed by Oilfield International (OIL), the independent consultants preparing the Reserve Report. The company has retained Bedrock Drilling Limited to provide well management and supervision services for the Njonji well and is presently negotiating terms for both rig and services.

Another Namibian Spud Imminent

The *Ocean Rig Poseidon*, the sixth generation deepwater drillship that has been contracted to drill for Chariot Oil & Gas offshore Namibia, has been mobilized to the southern African country. The drillship will be used to drill a well on Chariot's Central Blocks license. The well, targeting Prospect S, will take around 40 days to drill.

Source: Ocean Rig

Chariot is the operator of the license and is partnered with Azinam, Namcor, and Ignitus.

Tlou Updates Lesedi Progress

Tlou Energy's Lesedi CBM project in Botswana saw site preparation work commence for its first pilot production well. The company said that all well locations have been agreed to, scouted, and inspected. The company is currently waiting on the final pieces of equipment to arrive onsite prior to spudding the first well.

Tlou said that if its wells are successful it will form part of its initial gas-to-power project which will include installation of transmission lines and grid connection.

Preparations are currently underway with pre-mobilization activities to ensure adequate site clearing and construction of well-site facilities, as well as ensuring a nearby core-hole that has been drilled is adequately plugged and abandoned prior to spudding of the first well.

To maximize efficiencies, the vertical production wells and top-hole sections of lateral wells will initially be drilled, once the last of the long lead items for this stage of the program are onsite. Up to three production pods (comprising three wells per pod) are currently planned.

The wells will be drilled as dual lateral pods, comprising of a single vertical production well, intersected by two lateral wells. The lateral wells will be drilled through the gassy coal seam with gas extracted from this coal produced through the vertical production well where it can be gathered and used for power generation.

Tortue Field Produces First Oil

BW Offshore has achieved first oil from the Dussafu license offshore Gabon on the Tortue field through the *BW Adolo FPSO*. First oil was achieved just 18 months after the initial investment was made.

"We have achieved first oil from the Dussafu license within budget and on schedule," said Carl K. Arnet, the CEO of BW Offshore. "The execution of the Dussafu project confirms the attractiveness of our model by combining proven resources, a resourceful organization and access to production assets to achieve short time-to-oil."

Source: BW Offshore

The *BW Adolo* arrived in Gabon in late July and hook up of mooring systems and installation of risers and umbilicals were completed in September. The *BW Adolo* is a converted VLCC with a production capacity of 40,000 bpd. The vessel has undergone an increased life extension scope enabling an extended production profile on the back of positive reserve developments.

Petrel Optimistic on Tano 2A Resolution

Petrel Resources believes it has resolved the outstanding issue with GNPC regarding the contract for the development of the Tano 2A block offshore Ghana. As such, all legal proceedings have been withdrawn and the company looks forward to making further announcements regarding the petroleum agreement in due course.

David Horgan, Director, commented, "We are delighted to report that all outstanding issues have now been resolved with GNPC regarding our Tano 2A Block. All legal proceedings have been withdrawn so, after normal consultations, the next stage is for the Petroleum Agreement to be sent to Cabinet for review. I look forward to providing further announcements as appropriate."

The Tano 2A Block was originally awarded in 2008 to Ghanaian company Pan Andean Resources, which is owned by Clontarf Energy 60%, Petrel Resources 30%, with Ghanaian interests held by Abbey Oil & Gas Ltd. 10%.

TGS' MSGBC SeaSeep Project Booked

The North West Africa Atlantic Margin is about to see a SeaSeep Project by TGS. The project is the first regional offshore MSGBC SeaSeep Project undertaken.

The program will cover an area of approximately 113,500 sq km and will incorporate around 230 cores from the seabed, located based on multibeam backscatter anomalies. Acquisition of the multibeam will commence in Q4 2018 with the coring and geochemistry stage to follow.

"The data generated from the SeaSeep technology is proving to be a complementary and valuable addition to our multi-client library. The multibeam, coring and geochemical analysis provides our customers with further insight and understanding of regional prospectivity. Following its successful implementation in the Gulf of Mexico and Brazil, we are pleased to expand the use of this technology into the emerging MSGBC basin," commented Kristian Johansen, CEO of TGS.

This project is supported by industry funding and final results will be available in Q2 2019.

Global Gains Acreage in Namibia

Namibia has awarded Global Petroleum new acreage offshore the country. The company signed a petroleum agreement with the Namibian authorities for Block 2011A in the northern Walvis Basin. Global will hold an 85% interest in the new block as operator. State oil company Namcor, and local private company, Aloe, will have carried interests of 10% and 5% respectively.

The new block is located immediately to the east of the company's current license, PEL 0029, which is made up of Block 1910B and 2010A. The combination of the two licenses gives Global an aggregate of 11,608 sq km offshore northern Namibia and makes it one of the largest net acreage holders in the region.

Global believes that Block 2011A contains the same plays as those detailed in the Competent Person's Report for PEL 0029, which was published in January 2018, and is available on the company's website.

Under the Block 2011A work program, in the first two years of the Initial Exploration Period, Global will carry out various studies and will reprocess all existing seismic in the license area, which includes a 3D seismic data survey shot in the western section. The studies and reprocessing will enable the reservoirs in the Welwitschia structure and elsewhere in the acreage to be mapped with more confidence, and the leads to be identified more accurately.

At the end of two years, Global has the option either to shoot a new 2,000 sq km 3D seismic data survey in the eastern part of Block 2011A, or alternatively to relinquish the license.

HBP Wins Ethiopian Job

China Oil HBP Group was awarded a $313 million contract to commission Poly-GCL's natural gas fields in Ethiopia. The gas fields will utilize the planned Ethiopia-Djibouti pipeline for export.

HBP will take charge of surface construction at the Calub and Hilala gas fields in southern Ethiopia's Ogaden Basin under the two-year contract and build long-distance gas pipelines to support the project.

The facility will form part of the Ethiopia-Djibouti oil and gas project, which is being developed by Poly-GCL. HBP will collect and process natural gas at the Ogaden Basin before pumping it to a plant in Djibouti for liquefaction, after which it will be exported to China and other countries.

Tower Seeks South African Farm Down

Tower Resources updated its farm out of its Algoa-Gamtoos license in South Africa. The company holds a 50% interest through its wholly owned subsidiary, Rift Petroleum, partnered with operator New Age Energy Algoa.

New Age have appointed Envoi to conduct a farm-out process on behalf of both New Age and Rift to seek a partner for a material share of the license working interest in return for funding a further 3D seismic survey over a portion of the license area.

The new 3D seismic survey would focus on the Gamtoos Basin and/or the South Outeniqua Basin, the latter being part of the slope margin play being targeted by Total, Exxon and Equinor in adjacent acreage. Any prospects identified and high-graded during the processing and interpretation of the new 3D dataset could ultimately lead to a well being drilled in the third Renewal Period, presently due to end in December 2023.

Cormorant-1 Leaves Namibian Prospectivity a Mystery

Preliminary results for Tullow Oil's Cormorant-1 exploration well drilled offshore Namibia on PEL-37 are in. According to Tullow, the well encountered hydrocarbons, however they were non-commercial and as a result the Cormorant-1 was plugged and abandoned.

The well was drilled to a total depth of 3,855 meters and penetrated the objectives of the Cormorant prospect. Sandstones were encountered in the primary objective of the well but these proved to be water bearing. Wet gas signatures, indicative of oil, were encountered in the overlying shale section.

A statement issued by operator Tullow said that important geological data was gained and in combination with high quality 3D seismic data, will provide valuable insights into the prospectivity of the group's Namibian acreage in PEL-37 and PEL-30.

The Cormorant-1 well was drilled safely and efficiently by the *Ocean Rig Poseidon* drillship in a water depth of 548 meters. Following a farm-out in 2017, Tullow's net expenditure on this well is expected to be approximately $5 million.

Tullow operates the PEL-37 license with 35% equity and is partnered by ONGC Videsh Ltd (30%), Pancontinental Oil & Gas (30%) and Paragon (5%).

SAOGA Calling for Service Providers

As drilling programs off the coast of South Africa move closer to launch dates, oil companies are looking for support services for their respective drilling campaigns. One of these companies has approached the South Africa Oil & Gas Alliance (SAOGA) for help in securing drilling support services. SAOGA said that the services will be needed in 2019/2020 and cover a vast spectrum. Some of the services required include a drilling rig, helicopter services, coring, cementing, and casing services, as well as wireline logging and drill testing services.

The oil company is hoping that SAOGA can help identify potential local service providers who can provide the required services in South Africa. SAOGA said that the intension is to create a database and subsequently a contract strategy for their operations in South Africa.

A prequalification process which is part of the due diligence process in accordance with the company's standards will be conducted. On the basis of the due diligence process, service providers will then be invited to participate in the "Request for Information" for specific services. Further, a full scope of work will be issued to shortlisted candidates who meet their compliance and technical standards.

Sonatrach and Total Team Up on Petchem

Sonatrach and Total signed a shareholder agreement to create a JV known as STEP, or 'Sonatrach Total Entreprise Polymeres'. STEP will be responsible for carrying out a joint petrochemical project in Arzew. The project includes a propane dehydrogenation (PDH) unit and a polypropylene production unit with an output capacity of 550,000 tons per year.

The two partners are planning to start FEED from November. This project will allow the valorization of propane, produced in large quantities locally, by transforming it into polypropylene, a plastic for which demand is growing strongly.

Morocco Plans Tender for LNG Terminal

The Ministry of Energy, Mines and Sustainable Development in Morocco is in the process of preparing to launch an international tender for the construction of a large LNG terminal in the port of Jorf Lasfar.

The $4.5 billion terminal will include an import platform with a capacity of 7 billion cubic meters by 2025, a jetty, a pipeline system, one or more thermal generating stations and possibly a regasification unit.

This is in line with an announcement made by the government in February 2017, that it would release $685 million of the $4.5 billion to be injected into the project. At the time, a public announcement had indicated that this investment will ensure the import of gas from Russia and Qatar, among others.

Novatek to Deliver Yamal LNG to South Africa

Russian firm Novatek aims to have its Yamal LNG delivered to South Africa, marking the fifth continent that is on the receiving end of production from the project. The information was given by Yuri Senturine, the secretary-general of the Forum of Gas Exporting Countries, according to statements reported by Sputnik.

Source: Total

"Less than a year has passed since the launch of the Yamal LNG project and today, Novatek already supplies its products on four continents. In the near future, we plan to supply products to the fifth continent, including South Africa," said Senturine.

Equa G Calls on Russia and Qatar for LNG

Gabriel Obiang Lima, Equatorial Guinea's Minister of Petroleum, while attending Russian Energy Week in Moscow asked Russia and Qatar for help in building new terminals for the importation and processing of LNG.

Moreover, the Qatari government is already aiming to sell its production in main African markets in the coming years, by building regasification terminals. According to reports, the government of Qatar believes that these are the most affordable solutions for African countries to promote access to energy for all.

As for Russia, Lima suggested support for African countries in the construction of infrastructure and especially regasification terminals.

"We need LNG and it is clear that LNG is the best resource because it is environmentally friendly and cheaper. The main problem we have is the infrastructure to receive, store and redistribute LNG. If these smaller-scale terminals are built around Africa, this can clearly make us a very big market for Europe. We will of course encourage Russia and we are discussing with our friends in Qatar to contribute to the development of all these terminals in Africa," he said.

Metragaz Awards RWG a Contract for Morocco

Metragaz S.A has awarded RWG a long-term contract to provide advance exchange, overhaul, installation and recommissioning services to maintain their fleet of Siemens SGT-A35 (Industrial RB211) aero-derivative gas generators. Metragaz operates from two locations in Morocco, providing essential gas compression services for the Maghreb-Europe Gas Pipeline transporting gas from Algeria via Morocco onto Spain and Portugal.

This new contract has an initial term of three years, requiring RWG to build, configure and ship exchange gas generators to Metragaz in advance of each scheduled overhaul, resulting in drastically reduced operational downtime for the customer. In addition, RWG will provide field service support to install and recommission each unit, returning time expired equipment to RWG's OEM authorized SGT-A35 service center in Aberdeen, Scotland for major overhaul.

Kamal Daoudi, Director of Maintenance for Metragaz said, "the reliable operation of these Siemens SGT-A35 units is extremely important for our business. We operate continuously, therefore need to have confidence that our equipment is available at all times. It has also been challenging to build major maintenance events into our schedule due to the downtime we experience on site, therefore the solution provided by RWG is very beneficial. For this reason, along with our knowledge of their service quality and capability, we chose RWG as our maintenance partner."

Commenting on this recent award, Russell Grant, RWG's Siemens SGT-A35 Business Manager said, "We are delighted to continue our support for Metragaz and their critical gas compression operation in Morocco. Beyond repair and overhaul services, RWG applies expertise from all aspects of our business to deliver a comprehensive maintenance solution, including logistics management, customer support and field service."

In response to this contract award, RWG's Industrial & Marine Business Director, Mark Forsyth stated, "our customer facing team worked closely with Metragaz to better understand their maintenance requirements and determine the most effective way to assure fleet integrity, with minimal disruption to business operations. RWG's advance exchange concept is a proven mechanism for efficient service delivery and is complemented by our field service expertise."

Togo Turns to Equa G for Gas Supplies

Togo, in an attempt todiversify its sources of gas supply and reduce its dependence on land pipelines, is discussing with Equatorial Guinea the possibility of housing storage and regasification infrastructures for LNG. In this regard, it is also examining the possibility of concluding an LNG Terminal Agreement, the rank of a "Sale and Purchase Agreement."

According to Marc Dedèriwè Ably-Bidamon, Minister of Mines and Energy of Togo, this project is part of a government initiative to provide gas in abundance to serve the population. Visiting Equatorial Guinean installations at the end of August 2018, he said that "the realization of this project would be a significant asset."

Togo and Equatorial Guinea, through their respective ministers, signed a MoU in April of this year for the supply of LNG.

At the time of the signing of the MoU, Equatorial Guinea's Minister of Mines and Energy, Gabriel Mbaga Obiang Lima, said, "It is imperative that African countries monetize their gas, and that energy users benefit from this cheaper, cleaner and locally produced resource. Equatorial Guinea is committed to working with its neighbors in the region to find solutions that benefit everyone. We hope for a strong partnership with Togo."

BENGHAZI

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Coastal Gaslink Moving Forward

TransCanada is proceeding with the construction of the Coastal Gaslink pipeline project after a decision to sanction the LNG Canada natural gas liquefaction facility near Kitimat, British Columbia (B.C.) was reached by the JV participants of LNG Canada.

Bonatti, through its subsidiary Pacific Atlantic Pipeline Construction, was selected as the contractor to perform the construction and testing of two out of eight sections of the 670 km long 48" pipeline in a climate-challenging region. The contract to Bonatti is worth an estimated CAD$500 million.

Source: Coastal Gaslink

TransCanada Coastal GasLink Route Map

Pacific Atlantic Pipeline Construction will be directly responsible for hiring a projected 700 workers over the project construction period, with special emphasis placed on hiring locally first, giving priority to qualified local and Indigenous businesses in Northern B.C.

Once constructed, Coastal Gas Link will become a critical component of Canada's natural gas pipeline infrastructure, connecting the Canadian abundant, low-cost natural gas resources to global markets.

Shell Takes FID on LNG Canada

Shell Canada Energy has taken the FID on LNG Canada. With LNG Canada's JV participants also having taken FID, construction will start immediately with first LNG expected before the middle of the next decade.

Shell's 40% share of the project's capital cost is within the company's current overall capital investment guidance of $25-$30 billion per year.

LNG Canada is a long life asset that will initially export LNG from two processing units or "trains" totaling 14 mpta, with the potential to expand to four trains in the future. It is advantaged by access to abundant, low-cost natural gas from British Columbia's vast resources and the relatively short shipping distance to North Asia, which is about 50% shorter than from the US Gulf of Mexico and avoids the Panama Canal. The LNG export facility will be constructed using proven industry technology on a large, partially developed industrial site with an existing deep-water port, roads, rail and power supplies.

The project was planned and designed by working closely with local communities, and governments to ensure sustainable development was considered in every aspect of the project. For example, the project has been designed to achieve the lowest carbon intensity of any LNG project in operation today, aided by the partial use of hydropower.

Egypt and Cyprus to Sign Gas Agreement

Egypt and Cyprus are expected to sign an agreement that will see the island nation exporting natural gas production to the North African country for processing.

Under the terms of the agreement, gas offshore Cyprus could also be used for Egypt's domestic needs, according to Tarek el-Molla, Egypt's petroleum minister, following his meeting with the president of Cyprus, Nicos Anastasiades

"So it is really a way to have … good, win-win positions for not only Cyprus and Egypt, but also for Europe," El Molla told reporters.

The Cypriot minister said the agreement concerns building a pipeline from the Aphrodite discovery area to Egypt. But it can apply to other gas fields that may be discovered off the island in the future. The Aphrodite field is estimated to contain about 4.5 Tcf of natural gas.

Sonatrach Looking to Boost Medgaz Exports

Sonatrach is looking to boost natural gas exports through its Medgaz export pipeline. The Algerian state-run firm's CEO, Abdelmoumen Ould Kaddour said that it wants to expand its 8 Bcm/year capacity pipeline while also maintaining supplies through the GME link via Morocco.

The feedstock for the boost in exports will come from a number of new gas projects that will be brought onstream in the coming years.

Sonatrach has begun construction work on a new 200-km pipeline that can divert gas away from the GME pipeline into Medgaz, but Ould Kaddour said this did not necessarily mean transit via Morocco would cease – rather that it would give the company more flexibility and optionality in its exports to Spain.

The new pipeline will run from El-Aricha on the border between Algeria and Morocco to Beni-Saf, the starting point of the Medgaz pipeline, creating a new "loop" between the export lines. In order to be able to move gas in that direction, however, the capacity of Medgaz will also need to be expanded.

"One of our objectives is to continue to produce more gas and to transport more gas to Europe and in particular to Spain," the CEO said speaking after the launch ceremony of the new El Aricha-Beni Saf pipeline. "We are currently transporting 8 Bcm/year through Medgaz and we are putting in place a turbo-compressor to increase it to 10 Bcm/year," he said.

According to a Sonatrach engineering source, with the addition of more turbo-compressors, the Medgaz capacity could then be further expanded to 16 Bcm/year by 2020.The new link is expected to be completed by September 2020.

Aqualis Completes Floatover Installation in Bahrain

Aqualis Offshore completed the floatover installation of the REGAS topside offshore Bahrain as part of the Bahrain LNG Import Terminal. The company was contracted by GS E&C to provide engineering and supervision services related to the loadout, transport and floatover of the topside.

Source: Aqualis Offshore

The 7,000 tons topside was successfully mated with the 1,800 tons steel jacket in 17 meters water depth, 4 km offshore Bahrain with operation by APMC.

The topside was fabricated in Thailand and loaded out onto the *Giant 5* barge prior to loading the barge onto the *Zhenhua 15* semi-submersible vessel for 'piggyback' transport to Bahrain. The topside installation was completed following the barge offload in Bahrain.

"The loadout, piggyback transport and floatover went exactly as planned and to project schedule. Having first managed the jacket loadout in South Korea, transport to Bahrain and installation, and now the topside loadout, transport and floatover operations, it has been great to be involved in the entire project," said Phil Lenox, director – Asia Pacific, Aqualis Offshore.

Noble's Solution for Israeli Gas Exports to Egypt

Noble Energy executed multiple agreements to support delivery of natural gas from the Leviathan and Tamar fields, offshore Israel, into Egypt. The closing of all transactions is expected in early 2019.

The company and certain partners are acquiring an effective 39% equity interest in Eastern Mediterranean Gas Company, which owns the EMG Pipeline. The EMG Pipeline is an approximately 90-km pipeline located primarily offshore, connecting the Israel pipeline network from Ashkelon to the Egyptian pipeline network near El Arish.

Noble will own an effective, indirect interest in the pipeline of around 10%. In addition, and upon closing of the transaction, Noble Energy and partners will enter into an agreement to operate the pipeline, securing access to the pipeline's full capacity. Technical evaluation and flow reversal planning work on the EMG Pipeline is ongoing.

Keith Elliott, Noble Energy's senior VP, Offshore said that the announcement marked a significant step forward in "supplying natural gas from the world-class Tamar and Leviathan fields to regional customers through existing infrastructure." He added the deal also represents "another major milestone toward Egypt's goal to become a regional energy hub, providing access to both growing domestic markets and existing LNG export facilities. With these agreements, we are securing the capacity to deliver on our firm gas sales agreement with Dolphinus for Leviathan while also allowing for interruptible sales from Tamar into Egypt…"

Initial gas delivery through the EMG Pipeline is expected to occur from the Tamar field to Dolphinus Holdings in Egypt, under Noble's existing interruptible natural gas sales agreement. At startup of the Leviathan field by the end of 2019, it anticipates selling at least 350 Mmcf/d, gross, to contracted customers in Egypt.

Noble also secured an option for an additional route and capacity to transport natural gas within Egypt by entering into a definitive transportation agreement with the owner and operator of the Aqaba El Arish Pipeline. This agreement will support the transportation of additional quantities of natural gas to Egypt over and above the amounts through the EMG Pipeline.

Uganda Could Increase Refinery Stake

Uganda's planned refinery could cost more than originally estimated. The increase for the project isn't in the construction cost but in the fact that Uganda could acquire more than its planned 8% stake in the project. The 60,000 bpd refinery had an initial price tag of around $2 billion.

The consortium made up of Saipem, Yaatra Ventures America and Intra-continent Asset Holdings holds 60% of the planned project. Uganda, Kenya, Tanzania, Rwanda and Burundi were expected to take 8% each to complete the remaining 40%. However, Irene Muloni, Ugandan Oil Minister, said that to date only Tanzania has taken its full share of 8%. Kenya took 2.5%. Rwanda and Burundi have so far not taken any of their shares. As a result, Kampala plans to acquire the remaining shares.

According to *The East African*, Ugandans are likely to dig deeper into their pockets to finance the construction of the refinery even though taking just the 8% would put the country heavily into debt.

Brega Reports on Depot Damage

Brega Oil Marketing Company of Libya reported on the damage that recent clashes in and around its depot on Airport Road have caused. In a report, the company said that since the eruption of the clashes its diesel tank has been hit. The tank supplies feedstock to the Al Sawani power plant.

In addition, five liquefied gas tanks and tanks of aviation kerosene and gasoline fuel have been damaged.

The company added that the damage also included gas-rotary pipes and a diesel fuel line, as well as the maintenance workshop for firefighting equipment, maintenance of gas cylinders, and the buildings of the General Directorate of Safety and General Administration of Sales.

By Ricardo Silva and Sara Frazão
Miranda Law Firm

Angola's Petroleum Reform A Change for the Better

Angola has been for many years a province whose importance as an oil producer cannot be overlooked, frequently fighting with Nigeria for first place as the top sub-Saharan African crude oil producer. As with many other oil provinces, Angola has also been deeply affected by the sharp drop in oil prices in the international market, which has led local authorities to search for ways of successfully increasing the petroleum sector's efficiency, attracting investment and diversifying the economy. With these goals in mind, petroleum sector reform has been one of the main necessary changes claimed by both the government and investors, and which is perceived as a catalyst for solving the country's (financial) difficulties.

A first attempt to review the key aspects of the petroleum sector regulation arose back in 2015-2016, with the approval *inter alia* of the Model for Readjustment of the Petroleum Sector's Organization (Reorganization Model) and the amendment of Sonangol's by-laws, as well as an intention to review upstream terms and conditions, including the rules on exploration activities carried out inside existing development areas and in marginal fields. However, the new rules apparently did not get the expected support of the industry and some sectors held that the reform should go further.

Since the election of Angola's new President in September 2017, and the subsequent change of seats at the national concessionaire, Sonangol, E.P., a new momentum started building up. The Angolan Executive recently approved a legislative package consisting of five statutes of crucial importance to encourage further investment in the Angolan oil sector, and which apply to different segments of upstream activities, being the result of an open dialogue between the governmental authorities and the industry players.

The first statute is Presidential Decree No. 86/18, of 2 April 2018, which approved new rules and procedures applicable to public tenders for (i) the selection of associates of Sonangol EP (i.e., the oil companies that will enter into petroleum contracts), and (ii) the procurement of goods and services for petroleum operations, thus revising the prior rules on this matter. In respect of the selection of the associates of Sonangol EP, the new rules aim at facilitating the process for access to acreage so as to incentivize new prospecting and exploration for oil and gas in the country. Additionally, in order to address the industry's long-lasting concerns regarding excessive bureaucracy in the approval of oilfield goods and services contracts (mainly surrounding contract approval thresholds that were seen as too low, and Sonangol's delays in responding in contract approval matters) that were hindering petroleum operations, new rules on the procurement of oilfield goods and services were approved. These rules include the introduction of specific deadlines for approvals and an increase of the thresholds for contract approval by the national concessionaire. Under the new rules, oil operators are only required to launch public tenders for contracts exceeding $1,000,000 (whereas the prior threshold was $250,000) and, as a rule, only the award of contracts exceeding $5,000,000 will be subject to prior authorization from Sonangol, E.P.

> **"Under the new rules, oil operators are only required to launch public tenders for contracts exceeding $1,000,000 (whereas the prior threshold was $250,000) and, as a rule, only the award of contracts exceeding $5,000,000 will be subject to prior authorization from Sonangol, E.P."**

The second statute is Presidential Decree No. 91/18, of 10 April 2018, which approved the rules on abandonment of wells and decommissioning of facilities in respect of upstream operations, located both onshore and offshore. The new statute sets forth a detailed framework of obligations and requirements to be complied with by operators, adding clarity to a critical area of operations considering that some of Angola's oldest fields are now reaching depletion. In addition to the obligation to prepare provisional and definitive abandonment plans, and the requirements applicable to the drafting and approval thereof, the new statute also covers financial matters relating to the provision of abandonment funds, as well as extensive technical specifications.

The third statute is Presidential Legislative Decree No. 5/18, of 18 May 2018, which sets forth the legal framework on additional exploration activities within existing development areas. This statute introduces a special regime applicable to additional exploration activities to be conducted within existing development areas thus allowing for the exploration for and production of additional resources (notably in new geological horizons not previously tested). Aimed at maximizing the geological potential of existing development areas and as a result, an increase in production (including by optimizing costs through the use of existing infrastructure), this statute also addresses aspects pertaining to cost recovery and deduction, production sharing and applicable procedures.

The fourth statute is Presidential Legislative Decree No. 6/18, of 18 May 2018, which establishes

incentives and the procedure for adaptation of the contractual and fiscal terms applicable to Qualified Marginal Zones. These new rules are applicable to petroleum concessions with marginal discoveries, as defined in the statute, and also cover tax incentives, namely on petroleum production tax, petroleum transaction tax, petroleum income tax, production premium, investment premium, amortization of expenditures and cost oil.

The fifth and final statute is Presidential Legislative Decree No. 7/18, of 18 May 2018, which approved the legal and fiscal regime on natural gas. This statute, which has long been on the industry's wishlist applies to the prospecting, exploration, appraisal, development, production and sale of natural gas, and includes rules on rights over natural gas, contractual regime, concession periods and terms, tax charges, deductible costs and tax benefits. This can indeed be a game-changer, considering Angola's previously highly restrictive rules on commercial use and development of both associated and non-associated gas by IOCs.

> **"It is also planned that the transfer of powers from Sonangol to the ANPG will be conducted in a phased manner, which should be concluded by December 2020, and will entail subsequent amendments to the existing statutes …"**

Even after the enactment of these five statutes, and the opportunities that they opened up, the industry was still anxious to see whether the reform would stop there or if additional steps would also be taken. In line with the voices who argued that the reform should go further, and following an intense public debate – including in the media –, the Executive approved, by means of Presidential Order No. 112/18, of 24 August 2018, the appointment of a Steering Committee for the National Oil and Gas Agency (ANPG), one of the new bodies initially included in the plan for the reform of the oil sector.

The Steering Committee shall be responsible for, *inter alia*, leading the process for creating the ANPG and setting up the framework for the transfer of the national concessionaire role and related assets from Sonangol to ANPG. The idea of creating the ANPG was already foreseen in the Reorganization Model back in 2016, but no substantial progress had been made in this respect. If one assesses the creation of the steering group within the scope of the 2016 Reorganization Model, we may anticipate that this change will also trigger changes to the role of the Ministry of Mineral Resources and Petroleum as oil and gas industry supervisor, and of Sonangol which is expected to hereafter concentrate exclusively in the oil and natural gas core business, leaving its prior regulatory role to the other entities. It is also planned that the transfer of powers from Sonangol to the ANPG will be conducted in a phased manner, which should be concluded by December 2020, and will entail subsequent amendments to the existing statutes (e.g. Petroleum Activities Law, Law on Taxation of Petroleum Activities and Sonangol's by-laws).

Despite all the changes adopted so far and the amendments that will see the light in a near future, the industry is still waiting for full confirmation of the direction the Executive will follow in terms of a future national policy for the country's petroleum sector.

In this respect, the National Development Plan 2018-2022, which contains the Executive's priority actions by economic sector, may shed some light on this matter. At a time when the oil and gas industry in Angola is undergoing a significant phase of transformation, the Executive's priority actions in respect of the oil and gas sector include: (i) preparing a strategic plan / development plan for the petroleum sector, (ii) preparing a natural gas master plan considering the full natural gas value chain, (iii) reviewing and adjusting the terms of reference for tenders for the onshore blocks of the Lower Congo and Kwanza Basins, in order to relaunch the respective bidding round, (iv) preparing strategies for the tender of onshore and offshore blocks, (v) negotiating new petroleum contracts in areas already subject to concessions with improved terms and conditions, (vi) promoting the conducting of detailed studies on the country's pre-salt play, the country's non-conventional oil and gas' potential, and in the country's inland basins, (vii) promoting the commencement of production of non-associated natural gas and developing projects related thereto, and (viii) identifying and implementing the Fast Track gas project within the scope of existing discoveries.

Although it is still early to determine the exact implications of the new statutes, the truth is that some entail changes which have been requested by the industry for a long time, and as such are being well-received by both the major players operating in the country and public opinion. Moreover, the priorities of the Executive for the sector foreseen in the National Development Plan appear to be a good indication that Angola is taking solid steps towards increasing the sector's efficiency and attracting investment. It looks like a change for the better!

About the Authors

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By CGG

High-End Seismic Imaging Solves Shallow Gas Challenges

The latest Q modeling and Q-compensating imaging techniques bring greater clarity to Northern Viking Graben

CGG has recently completed seismic depth imaging of its entire Northern Viking Graben multi-client survey, in the Norwegian North Sea. The latest visco-acoustic ("Q") velocity modeling and seismic imaging technologies have been applied to BroadSeis™ broadband variable-depth streamer field data, acquired between 2014 and 2016. The final output forms a contiguous data volume covering 35,400 sq km.

The Northern Viking Graben, like many other areas around the globe, contains a wide range of localized near-surface geological anomalies, with shallow gas being a particular feature in this area. In fact, some of the shallow gas accumulations are identified gas fields, including Frigg and Peon.

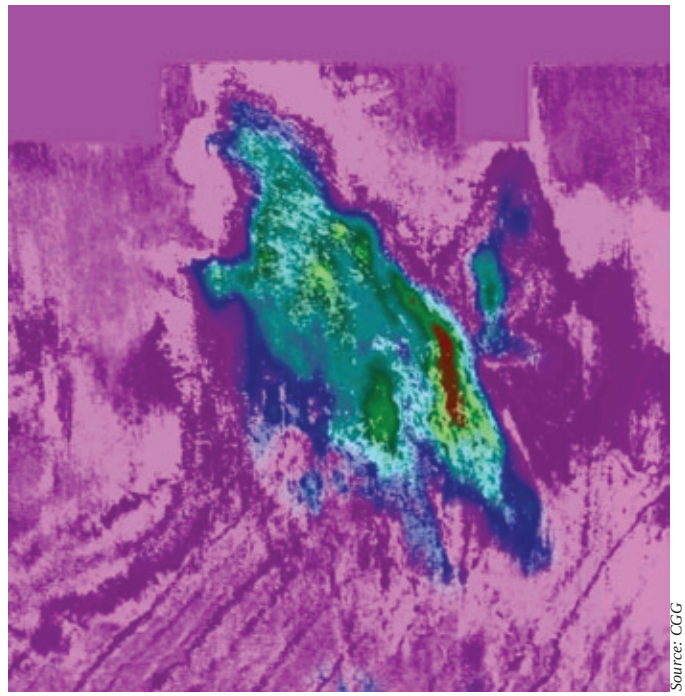
Shallow gas anomalies typically exhibit anomalously high absorption, associated with amplitude attenuation and phase distortion of seismic data. These challenging issues cause unwanted effects during imaging, such as dim zones, uneven image illumination and migration artifacts. Another absorption feature specific to the area is the large body associated with the Norwegian trench, which crosses the entire survey area from north-west to south-east.

Pre-processing for the imaging consisted notably of a noise attenuation flow targeting swell noise, seismic interference and post-critical energy, as well as broadband de-ghosting, short- and long-period free-surface multiple attenuation, common-offset binning and regularization.

The model building phase used both Q tomography and Q full-waveform inversion (FWI) to create a Q model which defined the location and extent of absorption anomalies. Advanced tomographic inversion and both refraction and reflection FWI were used alongside the Q work to derive the velocities and anisotropic parameters. This model building encompassed the full 35,400 sq km area.

Imaging used advanced Q-compensating migration algorithms, which took full advantage of the velocity, anisotropy and Q models to correct for amplitude loss and phase dispersion and thus delivered improved resolution and continuity.

The final reprocessing delivers outstanding results, clearly highlighting near-surface features such as the Peon gas field (illustrated). A better model and understanding of the shallow geology also lead to clearer images of the deeper structures.



Source: CGG

This slice, at a depth of 595 meters through the Q model, clearly highlights the extent of the Peon gas field

The Northern Viking Graben data set is complemented by a well study of 100 reinterpreted wells that have been integrated with the seismic results. A southern extension of 8,000 sq km is currently being acquired, which will be processed through the same sequence and seamlessly merged.

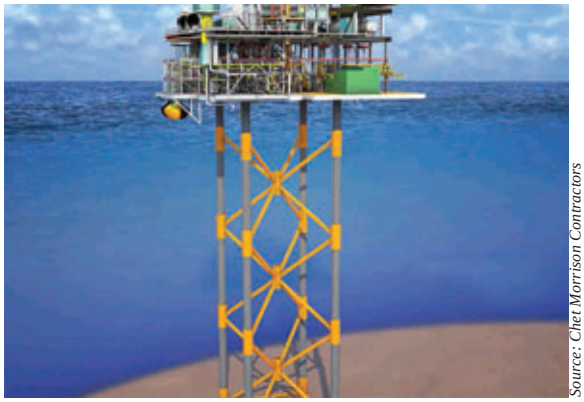
The Q modeling and imaging techniques are widely applicable elsewhere in the world. For example, CGG's 35,000 sq km Cornerstone survey in the Central North Sea is currently being processed through a similar sequence, with impressive high-resolution images of the Forties channels already having been achieved.

Further research is ongoing, testing the benefits of Q least-squares migration algorithms. Least-squares migration inherently favors amplification of signal over noise, thus reducing the risk that the Q-compensation will over-boost noise. This is of practical relevance in areas of low signal-to-noise ratio, such as beneath the kind of shallow gas anomalies discussed earlier.

iSIMS and Morrison Launch iJacket™

Chet Morrison Contractors (Morrison) formed a strategic partnership with iSIMS to launch the iJacket™, a new optimized method in jacket and foundation design. The patented iJacket is more structurally optimized than the conventional true X-braced jacket design, supporting the same deck load, conductor/riser count, drilling deck, wind turbine or other payload as its conventional counterpart.

The iJacket is engineered to provide significant cost savings and reduce material and labor requirements over traditional foundations and jackets by up to 30%. Modern 3D engineering design and analytical tools allow engineers to design and arrange bracing in a configuration that offers further structural optimization, while still meeting or exceeding the industry design requirements for strength and fatigue performance.


Source: Chet Morrison Contractors

Greg Detiveaux, VP business development, Morrison, said, "We are excited to partner with iSIMS to bring such an improved design method to market. The modular nature of the iJacket dramatically reduces time and energy spent fabricating and makes available a wider choice of fabrication locations. Its lower weight and reduced footprint makes transport and offshore assembly quicker and more economical than ever before, with its shape and design allowing for more optimized cargo arrangement and less barge transportation cost. Furthermore, a more open design ensures the iJacket is 100% ROV and AUV accessible, which eliminates the need for divers to carry out inspections."

DNV GL has awarded iSIMS with an Approved in Principle (AiP) for the iJacket design method and Morrison is the exclusive fabricator for North America, Mexico, the Caribbean and the north coast of South America.

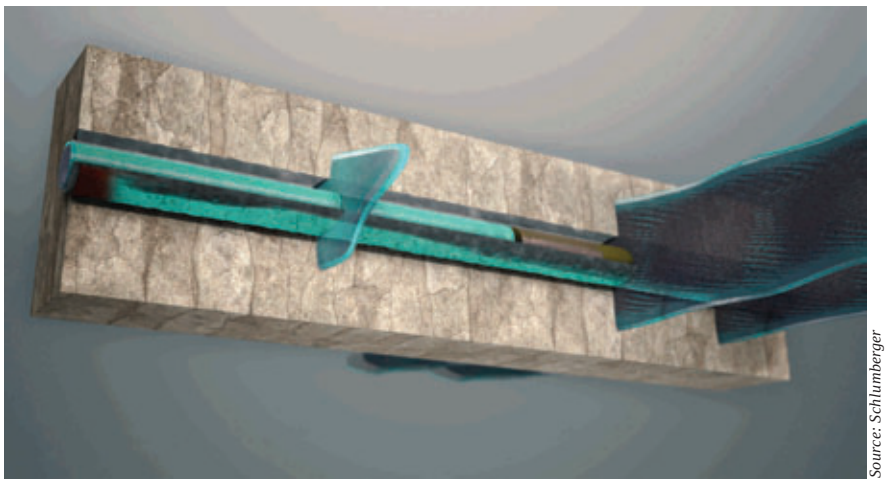
Schlumberger Launches New Zonal Isolation Technology

Schlumberger launched the CemFIT Shield* mud-sealing cement system at the Society of Petroleum Engineers Annual Technical Conference and Exhibition (SPE ATCE). The CemFIT Shield system provides the industry's first zonal isolation technology specifically designed to improve isolation between hydraulic fracturing stages in long horizontal wells.

Long horizontal wells with multistage completions face drilling fluid removal challenges due to limited centralization and casing movement that increase the risk of zonal isolation due to drilling fluid channeling. The CemFIT Shield system interacts with residual non-aqueous drilling fluids to limit the detrimental effects of channeling and reduce fluid mobility, which lowers the risk of fracturing fluid migration from zone to zone behind the casing.

Given the increasing trends in longer horizontal well sections with reduced spacing between stages, conventional well integrity methods are reaching their technical limits.

"Measurements taken in horizontal wells indicate that up to 30% of hydraulic fracturing stages communicate with neighboring stages during fracturing treatments, which means that some stages are over stimulated and others may not be stimulated at all," said James R. McDonald, president, Well Services, Schlumberger. "The CemFIT Shield system delivers more complete zonal isolation, leading to improved well stimulation through better control of the fracture initiation point."


Source: Schlumberger

Extensive laboratory and field testing demonstrated that the CemFIT Shield system is compatible with common oilfield cementing additives, blending processes, equipment, and design considerations, making it easy to use in the field.

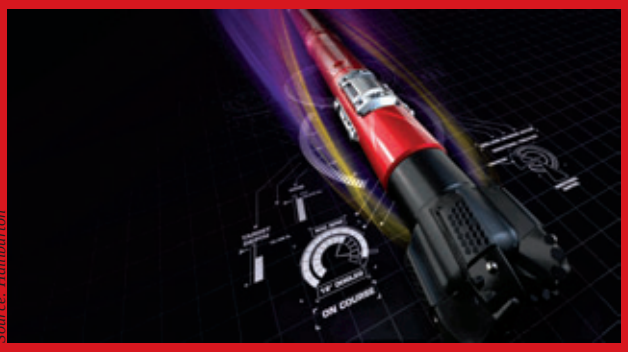
In the Permian Basin, the CemFIT Shield system helped an operator improve cement bonding and limit channeling in four long horizontal wells with 10,000-ft laterals. After the cementing operations, cement bond logs for all four wells recorded, on average, a 55% improvement in the bond index, confirming superior zonal isolation compared with offset wells cemented with conventional methods. In addition, preliminary evaluation of microseismic data from subsequent fracture stimulation treatments indicates that fracture lengths in one well cemented with the CemFIT Shield system were as much as 44% longer compared with fracture lengths in a neighboring well cemented with conventional cement. The CemFIT Shield system improves zonal isolation in long horizontal wells to ensure efficient hydraulic fracturing, avoiding the need for additional investment to mitigate drilling fluid channeling.

iCruise Intelligent Rotary Steerable System Debuts

Halliburton Company released the iCruise™ Intelligent Rotary Steerable System (RSS), a breakthrough technology that delivers faster drilling, accurate steering and longer laterals.

Today operators need to efficiently and reliably drill longer laterals faster which requires a drilling system that can steer accurately through high-angle wellbores in one run and achieve target depth on time and on budget. The iCruise system provides the highest mechanical specifications available with 400 RPM and up to 18 degrees/100 feet dogleg capabilities to drill fast and with greater accuracy.

The iCruise modular design can be configured to drill a long lateral or to increase accuracy in formations where well trajectory changes rapidly. Steerability and cutting efficiency can be further improved by matching the new Halliburton GeoTech® (GTi) drill bit with the iCruise system.



Source: Halliburton

"Halliburton has engineered a rotary steerable system that incorporates advanced sensors and electronics, sophisticated algorithms and high-speed processors to help operators place wells more accurately, reduce well time and maximize asset value," said Lamar Duhon, vice president of Sperry Drilling. "The system can also guide decisions around drilling parameters, vibration mitigation and maintenance to improve reliability."

Operators have deployed the iCruise system in multiple basins around the world including in North America and the Middle East. In North America, iCruise helped an operator drill more than one mile in a complex reservoir while geosteering through a 30-foot productive zone. The system maintained the wellbore 100 percent in the reservoir reducing time and maximizing recovery.

New Corrosion Monitoring Solution Enhances Integrity Management for Remote Pipelines

Emerson introduced the Roxar FSM Log 48 Area Corrosion Monitor, a new pipeline integrity management system that provides remote, continuous online corrosion and erosion monitoring, enabling operators to track localized corrosion and ensure cost-effective pipeline health even in challenging environments.

The Roxar FSM Log 48 – with 48 referring to the number of pins in the sensing pin matrix – is a large-area, real-time remote pipeline monitoring solution capable of distinguishing between localized and generalized corrosion, a feature that helps reduce the need for pigging and other costlier inspection methods. The Roxar FSM Log 48 has a total cost of ownership of just one typical smart PIG run of up to 10 kms (although this can vary according to the PIG technology).

"Localized corrosion, when undetected, can cause pipeline failures that lead to reduced transportation availability and fines or penalties--not to mention repair costs," said Chuck Miller, Director, Global Midstream at Emerson Automation Solutions. "The Roxar FSM Log 48 reduces these risks while delivering accurate corrosion detection in remote and hard-to-reach places, making it possible to monitor a larger area of pipeline and increasing capacity."

The Roxar FSM Log 48 continuously monitors corrosion in remote areas using WLAN and cellular data transfer protocols and built-in solar power options that reduce maintenance and personnel requirements. Armed with comprehensive, real-time pipeline health information, operators can make better decisions about when and where to conduct pig runs, integrity digs and hydrostatic pressure tests, which helps to increase pipeline availability and transportation capacity.

The system is specifically designed to work for both uncovered and buried pipelines and is easily installed on bottom pipe sections where water collection is most likely. It can be retrofitted to existing uncovered or buried pipelines and several units can be located over a pipeline, minimizing the need for pigging to assess pipeline integrity and increasing transportation capacity.

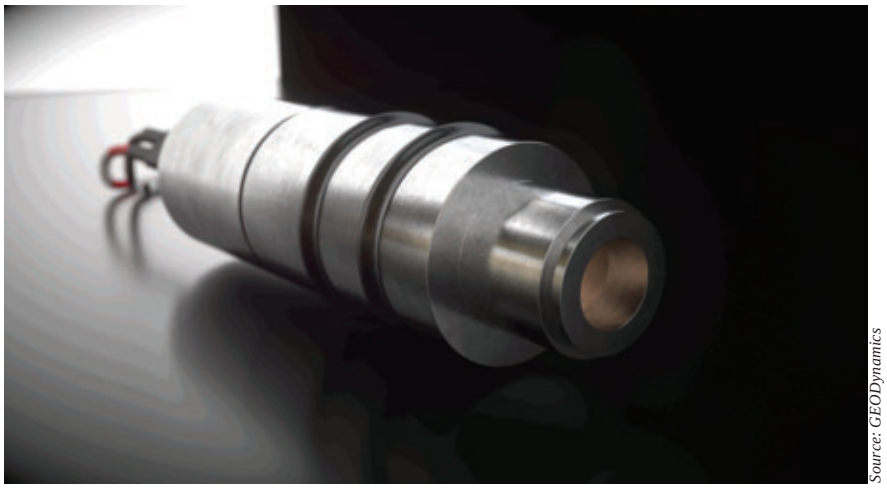
The Roxar FSM Log 48 uses the non-intrusive field signature method, in which an electric current is fed through the monitored length of pipeline to generate an electric field. The initial measurement sequence measures the voltage drop between pairs of sensing pins installed on the external pipe wall. Later measurements are compared to the field signature, where a uniform increase in voltage drops between all pin pairs indicates generalized corrosion, and a local increase in the values indicates localized corrosion. Typical detection sensitivity for generalized corrosion is 0.1 percent of wall thickness for outer pipeline diameters between six and 48 inches.


Source: Emerson

Ignitor System Eliminates #1Cause of Zonal Isolation Failures in Pump-Down Operations

GEODynamics introduced a new power charge ignitor system, the S1™ Ignitor and Crossover, to address the leading cause of failure to ignite power charges in zonal isolation perforating operations. The ignitor provides the thermal escalation required to initiate the pyrotechnic compound of a power charge. Conventional power charge ignitors have high failure rates due to reliance on spring contacts for the positive connection and friction contact with the firing head for the ground connection. The ignitor is installed into the switch sub in the space usually occupied by an electronic switch.

This new technology completes the circuit by hardwiring the positive and ground wires back to the wireline shooting panel, using the same wiring as the switches and perforating gun detonators. This ensures that connection is not lost during conveyance and mitigates loss of ground due to galvanic reactions. In addition to the fail-safe hardwiring feature, the new S1 Ignitor allows for the removal of several problem-related elements of the tool string, such as quick-change subs, and ultimately shortens the overall length of the tool string.



Source: GEODynamics

By using a crossover to connect the switch sub with the setting tool, the new ignitor is compatible with existing setting tools currently used in the market.

This patented technology is safer, more reliable and more cost effective than traditional methods.

"As plug-and-perf operations become more and more efficient, manufacturers and service companies are always looking at the next most frequent cause of failure and ways to eliminate them," stated Product Line Manager, Robert Davis. This is another example where GEODynamics has challenged the status quo to deliver more effective and safer completion operations that ultimately deliver better wells.

New Study Questions African Utilities' Future

A brand-new study into the future of African power utilities and the challenges they face has highlighted four possible scenarios of what the continent's energy sector will look like by the year 2030.

A brand new study into the future of African power utilities and the challenges they face has highlighted four possible scenarios of what the continent's energy sector will look like by the year 2030. In the whitepaper, titled: 'The Future of Energy and Power Utilities in Africa,' utilities are envisioned to either become "The Lions of Africa," "Hungry Hyenas," "An Elephant Herd" or "White Elephants," with each scenario having different consequences for both the African energy industry at large as well as the consumer.

The research project was conducted by the Gordon Institute of Business Science (GIBS) at the University of Pretoria, in collaboration with Clarion Energy, organizers of flagship energy events such as African Utility Week, Future Energy East Africa, Future Energy Nigeria and the Utility CEO Forum series – meetings and events that share ideas, encourage networking and facilitate business partnerships across the continent.

Can utilities remain relevant?

"The future of power and energy in Africa is at a significant junction," says Natalie Bacon, program director at African Utility Week, "and African states and the power stakeholders operating within this sector realize that the impact of providing universal access to affordable energy will not only lead to accelerated economic development but significant social improvements. Yet, to achieve universal access executives have many strategic decisions ahead of them."

She explains: "hitherto business as usual for utilities has meant bulk energy production and distribution through coal-fired power plans, centralized grids and public sector monopolies. However, this is quickly coming under threat from new models of energy production and distribution. The four scenarios outlined by the study will help utilities and the wider industry visualize what African utilities could look like in 2030 and try to answer the important question of how utilities can remain relevant, effective and lead the African energy revolution."

Honest reflection of sector in flux

Natalie Bacon adds: "We are very pleased with the completed GIBS Scenario Whitepaper which, even for a lay person, is easy to read and contains a treasure trove of background information, telling figures and statistics and country profiles. It provides an honest reflection of a sector in flux, detailing its current challenges and opportunities. 'The Future of Energy and Power Utilities in Africa' will no doubt contribute to the on-going dialogue, knowledge sharing, challenging of the status quo and peer-to-peer interaction in the energy sector that we are continually striving to facilitate at our events."

Four scenarios of future of utilities

Short summaries of each of the four scenarios identified in the study are:

Scenario 1: The Lions of Africa

In 2030 African utilities have become a pride of agile lions, hunting for new opportunities in collaboration with business and community partners.

Scenario 2: Hungry Hyenas

In 2030 African utilities have become a pack of hungry hyenas, scavenging for short-term returns and manipulating the interests of their business and community stakeholders.

Scenario 3: Elephant Herd

In 2030 African utilities have become a herd of African elephants, dominating the energy landscape in Africa with bold investments funded

from abroad. Businesses and communities have little choice but to pay a premium to cover the rising cost of sovereign debt that accompanied the rapid expansion of bulk energy infrastructure between 2020 and 2040.

Scenario 4: White Elephants

In 2030 African utilities have become a herd of white elephants, struggling for survival and relevance on a vibrant African continent.

Major uncertainties in sector

The research revealed that there are four major uncertainties that form the backdrop for the alternative future scenarios for African utilities and will determine their trajectory in a changing energy landscape:

Fiscal stability and viability of alternative models:
Will the precarious fiscal position of utilities be resolved in ways that produce long term sustainability and will viable alternative funding models be created in this process?

Governance and regulatory readiness:
Will the low quality of governance in the sector be improved and will this coincide with an appropriate regulatory response that is enabling and facilitating of new opportunities in the sector?

Partnership and collaboration across social partners:
Will the private sector and social actors such as communities consider partnership with utilities as an attractive prospect or will they seek to take advantage of new avenues for energy provision in isolation?

Climate change:
A wildcard / shock scenario: Will climate change and the effects thereof, such as extreme weather, persist, desist or accelerate, and what will be the effects?

The Scenarios Whitepaper:
"The Future of Energy and Power Utilities in Africa" is free to download from the African Utility Week website – *www.african-utility-week.com*.

Engen Helps Tackle Unemployment Through Learnership Program

In response to increasing unemployment rates in South Africa, Engen are running various campaigns to recruit candidates for learnerships, which are based on business and industry needs. To date, Engen has trained over 500 artisans and professional drivers, who are now licensed to trade in various fields.

South Africa has an unemployment rate of approximately 27%, yet at the same time, the country has a shortage of suitably qualified people. In an effort to help address thisanomaly, Engen offers a variety of learnerships in technical fields to help educate and upskill school leavers and unemployed youth.

A learnership is a work-based learning program where classroom studies at a college or training center are combined with practical on-the-job experience. Research shows that we learn far better, when we practice what we have been taught in the classroom in a real workplace environment.

Engen aligns its learnership recruitment to its business needs. Those who complete their learnerships are often employed by the company or within the broader petroleum industry.

"In this way, the introduction of learnerships is making a good contribution towards solving the skills shortage in the industry," says Skills Development Facilitator at Engen Mmalenyalo Galane.

"By physically performing tasks in the workplace that are learned in the classroom, you can put into action what you have learned and also what you did not understand. This allows you to ask the trainer to explain that part of the lesson again until you fully understand it."

Galane says the learnerships offered by Engen form part of a nationally recognized qualification and are directly linked to an occupation.

"A learnership does not only teach skills for a particular job when you complete your training, it also forms part of a higher qualification towards which you can study by undertaking other learnerships or short courses."

Adds Galane: "Each learnership has a specific level of qualification. For example, if you want to become an artisan, you must complete four separate learnerships (levels 1, 2, 3 & 4). There is no set period to do this, as each level counts towards the full qualification."

Source: Engen

Sibonelo Mlumbi, Mechanical Fitter apprentice

Engen offers learnerships in Chemical Operations, Professional Driving, and Production Technology, as well as various trade occupation apprenticeships such as diesel mechanic, fitter and turner, instruments and electrical.

The 12-month learnerships offered by Engen pays a monthly stipend to successful candidates.

Engen is also passionate about the development of people with disabilities, says Engen's head of Human Resources, Chwayita Mareka, and has partnered with an N.P.O. in Cape Town for learnerships specifically designed for people with disabilities.

In addition to the learnership program, Engen also funds bursaries for students studying Engineering and Finance-related degrees, with the aim of creating a pipeline of talent for the Engen Graduate Development Program.

"In all these ways, Engen is surely doing its part in helping reduce the country's high unemployment rate by developing the unemployed Youth and further upskilling them on the job," says Mareka.

Engen invites interested people to email their CV's to Learnerships@engenoil.com and to check for available learnership opportunities on the company website (www.engen.co.za).

National oil companies are increasingly becoming more sophisticated; here Petroleum Africa names the continent's elite for 2018.

Each year *Petroleum Africa* evaluates the performance of the continent's national oil companies (NOCs) for its annual survey and awards. These companies range in size depending on the strength of their respective petroleum industries, and the activities they undertake obviously vary in scale, but ultimately the difficulty and challenges of each are similar based on available financial, technical and human resources. After examining the activities of our finalists for activities from October 2017 through September 2018, our judging committee felt confident in naming this year's winner, with honorable mentions for the finalists.

FINALISTS

Country	Company
Libya	National Oil Corp of Libya (NOC)
Ghana	Ghana National Petroleum Corp. (GNPC)
Senegal	Societe Des Petroles Du Senegal (Petrosen)
Angola	Sociedade Nacional de Combustíveis de Angola (Sonangol)

Runner-Up

Our four finalists are very different in size, nature, and proficiencies, but all performed admirably over the period, and in addition to our winner, one has been named runner-up. The **National Oil Corp of Libya** (**NOC**) has had its hands full for years since the fall of Qaddafi and the operating arena remains as challenging as it can get with the added security situation and various factions constantly trying to sabotage its efforts.

Despite the additional challenges, NOC has managed to make a few new deals, repair/restore fields and facilities, and ultimately boost production levels all the way up to almost 1.3 million barrels per day (bpd) as of late September, up from August 2015 levels of only 350,000 bpd. Mustafa Sanalla, NOC chairman, says that the state firm is targeting 2 million bpd by 2022. With the ongoing effort it has shown thus far in the face of an ongoing crisis, combined with deal-making skills, putting out fires and bringing some fields back online, NOC is highly deserving of being named Runner-Up in *Petroleum Africa's* 2018 survey and we expect to see them in next year's edition. Congratulations NOC!

Large, well established National Oil Companies (NOCs) have a myriad of responsibilities, often with various subsidiaries to monitor and promote. As the winner of *Petroleum Africa's* NOC of the Year you would expect the company to make the news on a regular basis for its achievements and not its fallible activities. Despite Sonangol, our winner, receiving some negative press this year, we felt the firm was not receiving its fair share of positive press, with media focusing on the difficulties the company was facing rather than on its many achievements. Despite this, *Petroleum Africa* is confident in its choice of Sonangol as the continent's top NOC.

As the firm in charge of the second largest oil production in sub-Saharan Africa, Angola's Sonangol has a lot on its plate. Over the past year, even with the distractions of a new chief executive and a corruption investigation, the company turned in a stellar performance; participating in the start-up of new developments, buying out an international oil firm's stake in two blocks, forming new joint ventures, and adding to Angola's local content base.

Year in Review

Operationally, in July Sonangol and its associates, including Total as operator, started production at Kaombo, currently the biggest deep offshore development in Angola, located on Block 32, 260 km off the coast of Luanda. *Kaombo Norte*, the first Floating Production Storage and Offloading (FPSO) unit, was successfully brought on stream and will produce an estimated 115,000 barrels of oil per day (bopd), while the second, *Kaombo Sul*, is expected to start up next year. The overall production will reach an estimated 230,000 bopd at peak and the associated gas will be exported to the Angola LNG plant. A total of 59 wells will be connected to the two FPSOs, both of which are converted very large crude carriers (VLCCs), through one of the world's largest subsea networks. Together, they will develop the resources of six different fields (Gengibre, Gindungo, Caril, Canela, Mostarda and Louro) over an area of 800 sq km in the central and southern part of the block.

Sonangol is one of the most active African NOCs participating in the exploration and production activities of its country, as well as working to upgrade its downstream prospects. Looking to the future, the company signed several agreements covering both upstream and downstream activities with French major Total. The agreements included the Zinia Phase 2 project development. Total and Sonangol agreed on the contractual conditions for the development of Zinia Phase 2, enabling a commitment to the FID. Located in Block 17, Zinia 2 will add 40,000 bpd to the country's production totals. Also signed was an agreement that has the two companies jointly exploring Block 48. This agreement contributes to restarting deep offshore exploration in Angola. The first phase of this program will last for two years with the drilling of one exploration well on the block. In addition, the two firms signed a MoU to jointly develop a retail network in the country including logistics and the supply of oil products.

In May Sonangol solidified those deals, signing agreements that included a risk service agreement for Block 48, and a framework agreement for the future JV for the network of service stations in Angola. In July Sonangol turned away from traditional oil marketers and awarded its fuel oil import deal to Total. On the local content end, Sonangol made sure Total included it in its program. The NOC signed a MoU that will have 50 new scholarships given to young Angolans to study at French universities by end-2019.

Source: Total

Kaombe Norte FPSO

The NOC also awarded new acreage to ENI, adding to the Italian major's already extensive position in the continent. The agreement gives ENI a 48% stake and operatorship of the Cabinda North block. ENI previously controlled a 15% stake in the block that is located onshore in a little explored oil basin in the north of the country.

In addition to the signing of the agreement for the Cabinda North, the two companies signed a MoU to define joint projects throughout the whole value chain of the energy sector. The MoU provides for the assessment of associated and non-associated gas resources in Angola's offshore, to be traded on both domestic and international markets, and the optimization of exploration activities and identification of new opportunities for joint exploration.

Sonangol and Cobalt International Energy (CIE) ended a stalemate over two offshore blocks. The agreement resolved all disputes and transitions Cobalt's interests in Blocks 20 and 21 offshore to Sonangol for $500 million. The firm is selling off the two blocks, hosting road shows in both Luanda and Houston for the acreage.

Working to bolster its position and build on local content goals, Sonangol and Tidewater Marine partnered to create a company that will invest in servicing maritime tankers in Angola. The company, which will be named Sonatide Marine Angola, will also be involved in drilling, exploration, and production operations in Angola. Sonatide, which will require a starting investment of $1.3 million, will be 49% controlled by Tidewater Marine and 51% controlled by Sonangol Holdings.

A Job Well Done

The above activities are a small sampling of the work the company undertakes on a day-to-day basis. Over the past year, they represent a fraction of its actual activity all the while coping with the changes of new government and new management without skipping a beat. Its poise under pressure make Sonangol more than deserving of the NOC of the Year award. Congratulations to the Sonangol team for another superb performance and becoming *Petroleum Africa's* NOC of the Year!

By Jennifer Nickle, Deputy Editor

Joao Lourenco

Angola

President: Joao Lourenco (since September 2017)
Independence: April 1961 (from UK)
Population: 29,310,273 (July 2017 est.)
GDP (purchasing power parity):
$190.3 billion (2017 est.)
GDP - real growth rate: 0.7% (2017 est.)
GDP - per capita (PPP): $6,800 (2017 est.)
Minister of Petroleum: Diamantino Azevedo
Oil - production:1.489 million bpd (September 2018)
Oil - consumption:142,000 bpd (2015 est.)
Oil - proved reserves: 8.7 billion barrels (2017)
Natural gas - production:
773 million cubic meters/day (2015)
Natural gas –consumption:
773 million cubic meters/d (2015)
Natural gas - proved reserves:
308 billion cubic meters (2017)

Sources: CIA FactBook, OPEC

History & Politics

What is today's Angola started off as the Kongo Kingdom up until the arrival of the Portuguese on its shores in the late-1400s. The European country made Angola a major trading arena for slaves in the 17th and 18th centuries with more than a million slaves being shipped to Brazil between 1580 and 1680. The slave trade was officially abolished by the Portuguese government in the mid-1800s and over the next several decades Portugal consolidated its colonial control over the African nation despite local resistance. In 1951 Angola's status changed from colony to an overseas province.

While Angola was no longer a "colony" it was still under the control of the Portuguese which led to the beginnings of the socialist guerrilla independence movement, the People's Movement for the Liberation of Angola (MPLA). This socialist movement resulted in a guerrilla war for independence though it was not until Portugal experienced its own revolution that Angola achieved independence. The MPLA came out on the top of the heap with Agostinho Neto as its leader. Neto died in 1979 and Jose Eduardo dos Santos took over as president, setting the stage for his decades-long rule of this African nation and one of the continent's longest running civil wars.

Fighting between the MPLA, led by dos Santos, and the National Union for the Total Independence of Angola (UNITA), led by Jonas Savimbi, followed independence from Portugal. There were several attempts at bringing peace, but a resumption in fighting always ensued. Up to 1.5 million lives are estimated to have been lost and four million people displaced due to Angola's civil war. Fighting came to an end in 2002 upon the death of Savimbi. The MPLA, through President dos Santos, ruled the country until 2017 when dos Santos stepped down as the leader of the MPLA after almost four decades in office.

The retirement of dos Santos paved the way for another MPLA member to take the reins of the country, Joao Lourenco. In September 2017 Lourenco became the country's first new president in 38 years. He was the chosen candidate of dos Santos, who was still expected to retain a strong influence over the running of the country. However, this has not been the case. Since taking office Lourenco has established himself as anything but a lackey of the dos Santos regime. He moved quickly and surprised many by firing several security chiefs close to his predecessor. Lourenço let no grass grow under his feet when it came to establishing his regime and ousting dos Santos' key allies out of

prime government positions. His moves have eliminated much of the the skepticism as to whether he would be a puppet of the dos Santos family, though not completely (*see African Politics page 4*).

Some dos Santos loyalists who are now out of the administration are former Vice President Manuel Vicente and Minister of State Manuel "Kopelipa" Hélder Vieira Dias Jr, although Vicente and Lorenco are seemingly forging a bond, raising suspicions in some circles as to the president's commitment to complete anti-graft reform. While dos Santos' daughter Isabel dos Santos was in charge of the state-run oil and gas firm Sonangol, Lourenco appointed Carlos Saturnino, who was had been previously sacked by dos Santos as Secretary of State for Oil, a technically more senior role than that of dos Santos. While Lourenco kept the president's daughter on at Sonangol, her position at the state-run firm did not last long as she was fired by the president in November 2017, who slid Saturnino into the Sonangol spot.

Lourenco's moves so far have significantly widened the distinction between government and party, a space that was missing during the dos Santos regime where basically the MPLA was the government. The president solidified his position in the eyes of the international community when he arrested Jose Filomeno dos Santos, the son of the former president. The younger dos Santos had served as the chair of Angola's sovereign wealth fund until January, when he was fired following reports regarding payments made to the fund's asset manager; criminal charges quickly followed. The criminal charges stem from allegations of an illicit transfer of half-a-billion dollars from Angola's central bank to an account in the UK. This arrest and several others suggest that Lourenco is committed to a public break from the previous regime.

Economy

Angola's economy has been heavily dependent on its petroleum sector for decades, providing more than 70% of the government's revenue. It was also the only revenue generator that continued to prosper during the civil war. Unfortunately, it is subject to the vagaries of market prices and thus the country's budget is subject to the same. Subsistence agriculture provides the main livelihood for most of the people. The agricultural region in Angola's central interior was at one point the most densely populated area of Angola, and the agricultural wealth of the central highlands made the colony a net exporter of food. Unfortunately the country is a net importer of foodstuffs today.

The global recession that started in 2008 stalled Angola's economic growth. Lower prices for oil and diamonds also resulted in GDP falling to -0.8% in 2016. In late 2016, Angola lost the last of its correspondent relationships with foreign banks, further exacerbating hard currency problems. Since 2013 the central bank has consistently spent down reserves to defend the kwanza, gradually allowing a 40% depreciation since late 2014. The country's GDP was pegged at 0.7% for 2017, an increase from 2016 but still far below the GDP of its petroleum heyday. According to the International Monetary Fund the country's real GDP is expected to shrink by 0.1% in 2018. The Central Bank is equally pessimistic, expecting virtually no economic growth in 2018, despite higher oil prices, because of an 8% decline in petroleum production. On a slightly more positive note, the non-oil economy is predicted to grow by 1%.

Corruption, especially in the extractive sectors, is a major long-term challenge that poses an additional threat to the economy. Lourenco is initiating reforms and his public sweep of officials out of the government and into jail cells marks his battle against corruption in the country. Recently the president was in New York at the UN National Assembly, promoting a "new Angola." Speaking to the assembly, Lourenco reiterated that the MPLA needed to lead the battle against rampant corruption, "even if the first to fall are militants or even senior officials of the party that have committed crimes." The president is hoping that his anti-graft campaign will introduce a better business environment for foreign investors and encourage the Angolan elite to repatriate funds from abroad and turn around Angola's fragile economy.

The country saw legislation approved in May that mandates the return of illicitly exported capital of over $100,000, with the government offering amnesty on this until December. According to the Central Bank, some $30 billion of Angolan money is held outside the country, around half in personal accounts. While the president's anti-graft campaign is seen laudable by some, others are a bit skeptical on whether it will go any further than the dos Santos clan. According to some, targeting the dos Santos family and their friends is like picking low-hanging fruit and any comprehensive or deep structural change will require hard work and some serious compromises.

The Petroleum Industry

Angola's oil and gas production hit an all-time high of 2.03 million barrels per day (bpd) in 2010, but has steadily fallen over recent years with its high only reaching 1.562 million bpd this year, and currently hovering at about 1.489 million bpd. It is expected to continue its decline. According to the Ministry of Finance, the country's oil production is predicted to fall by 36% over the next five years. The country needs to slow this decline and President Lourenco needs to assure international oil companies that there is a future for Angola's petroleum sector and a place for them and their investments in it. The president has promised to introduce a series of reforms and new incentives for the sector to increase international participation. On paper, there have been a lot of oil-sector reforms but moving these reforms off the paper and putting them into practical use has been a bit slow.

Most recently, news of the creation of a new agency to replace Sonangol's role as regulator was announced. Lourenço established a new national agency to undertake the management and sales of petroleum concessions in the country. The agency was created and made official by means of Presidential Order No. 112/18, of August 24, 2018. The president has appointed a Steering Committee for the National Oil and Gas Agency (ANPG).According to the new statute, the Steering Committee shall be responsible for, *inter alia*, leading the process for creating the ANPG and setting up the framework for the transfer of the national concessionaire's role from Sonangol, E.P. to ANPG *(read more on Lourenco's reforms and the creation of ANPG in Oil Security, page 20).*

Angola is the second-largest oil producer in sub-Saharan Africa and sometimes, depending on what is going on in Nigeria, sub-Saharan Africa's number one producer. Currently, oil production in Angola comes almost entirely from offshore fields off the coast of Cabinda and deepwater fields in the Lower Congo Basin. Some small-scale oil

production occurs from onshore fields, but conflicts have limited onshore exploration and production in the past. On the natural gas end, the Organization of Petroleum Exporting Countries (OPEC), of which it is a member, tags Angola's "marketed production" at almost 110 billion cubic feet per day (Bcf/d).

Sonangol

While the country's petroleum sector does not make the news with the frequency it did a decade ago, it does still manage to make the headlines with discoveries, developments, and new production streams. Sonangol, despite the issues it has faced, still manages to put in quite a bit of work in its own right. Over the past year it signed several exploration agreements, came to terms with an international E&P firm for the purchase of two blocks, formed a joint venture company, and issued a tender. The company did all this while undergoing uncertainties regarding its future and a small purge of its top brass.

The president is also considering privatizing some of Sonangol's many subsidiaries, although the statement from the president was extremely lean on the "when and the how" this would be done. The statement did say however that the process would be fair and transparent. A commission was being set up to evaluate assets that could be considered essential and those that are not. Sonangol submitted a list to the government of subsidiaries it recommended to privatize.

There were 54 subsidiaries in total on the list. These 54 entities, which represent one-third of the companies owned by the group, will be privatized to allow Sonangol to "focus on key activities, such as the construction of the Lobito and Cabinda refineries," said Diamantino Azevedo, the Minister of Petroleum, in an interview reported by Macauhub. The Minister added that it is "a continuous process until a large part of Sonangol's non-strategic activities are eliminated, so that the company becomes a real oil operator." In addition to the selling off of the subsidiaries, the Angolan government is considering partially listing the firm. Azevedo was reported by state newspaper *Jornal de Angolaas* as saying that any partial listing would only occur after June 2019 when a restructuring of the company is complete.

In December Sonangol and Cobalt International Energy (CIE) ended a stalemate over two offshore blocks. The agreement resolved all disputes and transitions Cobalt's interests in Blocks 20 and 21 offshore to Sonangol for $500 million. The state firm is issuing a tender for the sale of the two blocks. Sonangol said in a statement that it was inviting bids for part of its stakes in Blocks 21/09 and 20/11, and that it would share information on those blocks with investors via "data showrooms" in Luanda and Houston.

Sonangol and Tidewater Marine partnered to create a company that will invest in servicing maritime tankers in Angola. This project was approved by the government in H1 and will see the creation of a public limited company under Angolan law that will provide maritime services including cabotage and ship management. The company, which will be named Sonatide Marine Angola, will also be involved in drilling, exploration, and production operations in Angola. Sonatide, which will require a starting investment of $1.3 million, will be 49% controlled by Tidewater Marine and 51% controlled by Sonangol Holdings.

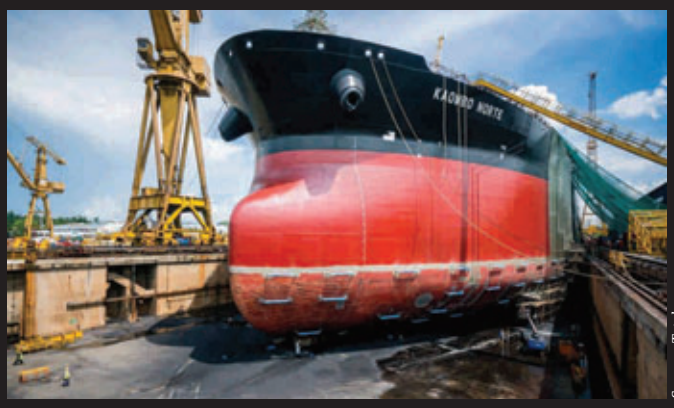
Total

In December 2017, Sonangol signed several agreements covering both upstream and downstream activities with Total. The agreements include the Zinia Phase 2 project development. Total and Sonangol agreed on the contractual conditions for the development of Zinia Phase 2, enabling a commitment to the FID. Located in Block 17 and operated by Total (40%), Zinia 2 will be connected to the *Pazflor FPSO* and will produce 40,000 bpd. Also signed was an agreement that has the two companies jointly exploring Block 48. This agreement contributes to restarting deep offshore exploration in Angola. The first phase of this program will last for two years with the drilling of one exploration well on Block 48.

Further, Sonangol and Total signed a MoU to jointly develop a retail network in the country including logistics and the supply of oil products. In May, the pair solidified the cooperation, signing agreements that included a risk service agreement for Block 48, and a framework agreement for the future JV for the network of service stations in Angola. In July Sonangol awarded its fuel oil import deal to Total, a major contract that was previously held by Trafigura. Fuel oil was the last major Angolan contract Trafigura had, with volumes of 1.1 million tons in 18 cargoes over 2017 worth some $450 million. Total is now expected to market a similar amount for Sonangol in 2019. And on the local content end, a MoU was signed to fund 50 new scholarships for young Angolans to study at French universities by end-2019.

Total and its partners on Block 17 offshore Angola took the FID to launch the previously mentioned Zinia 2 development in May. The Zinia 2 is the first of several possible short-cycle developments on Block 17 that will unlock its full potential by connecting satellite reservoirs to the existing FPSO units. Zinia 2 comprises nine wells in water depths ranging from 600 to 1,200 meters, tied back to the *Pazflor FPSO* with a budget of $1.2 billion. Block 17 has four FPSOs on it – *Girassol, Dalia, Pazflor* and *CLOV*. In 2017, its production averaged 600,000 bpd.

Total also saw the startup of Block 32's Kaombo development. According to the company, the Kaombo is currently the biggest deep offshore development in Angola. *Kaombo Norte*, the first FPSO unit, was successfully brought on stream and will produce an estimated 115,000 bpd of oil, while the second one, *Kaombo Sul*, is expected to start up in 2019. The overall production will reach an estimated 230,000 bpd at peak and the associated gas will be exported to the Angola LNG



Source: Total

Kaombo Norte FPSO in drydock

plant. A total of 59 wells will be connected to the two FPSOs, both of which are converted Very Large Crude Carriers, through one of the world's largest subsea networks. Together, they will develop the resources of six different fields (Gengibre, Gindungo, Caril, Canela, Mostarda and Louro) over an area of 800 sq km in the central and southern part of the block.

ENI

Italian oil major ENI picked up new acreage in Angola, adding to its already extensive position in the continent. An agreement signed with Sonangol gives ENI a 48% stake and operatorship of the Cabinda North block. ENI previously controlled a 15% stake in the block that is located onshore in a little explored oil basin in the north of the country. In addition to the signing of the agreement for the Cabinda North, the two companies signed a MoU to define joint projects throughout the whole value chain of the energy sector. The MoU provides for the assessment of associated and non-associated gas resources in Angola's offshore, to be traded on both domestic and international markets, and the optimization of exploration activities and identification of new opportunities for joint exploration.

Source: ENI

Workers on the West Hub and East Hub projects

ENI also signed a contract regarding the West Hub Development project. The contract incorporates the work orders previously assigned and communicated in 2016 and 2017 and adds the scope of work for the development of the Vandumbu field in Block 15/06. The additional activities will be carried out by Saipem's Offshore E&C division and encompass the engineering, procurement, construction and installation required for the development of the Vandumbu subsea field. Overall the project includes the realization of two production pipelines made of special material, and the laying of umbilicals and service lines of various diameters (subsea, umbilicals, risers & flowlines, or SURF).

Like the previously mentioned Total, ENI also added to its and Angola's production totals with the addition of oil flows from the Ochigufu project on Block 15/06. The field will add 25,000 bpd to the current production levels. This start-up, achieved one and a half years from presentation of the Plan of Development, was the first development to come onstream for ENI in 2018, as well as the first start-up of the year in Angola. It represents a further step in the development of the prolific Block 15/06, where ENI discovered over 3 billion barrels of oil in place. The next start-up in this block in 2018 will be the UM8 reservoir in East Hub and the Subsea Boosting System for Mpungi field, while Vandumbu field, in West Hub is expected to start production in early 2019. These three start-ups will increase overall production by a further 30,000 bpd.

BP

BP is launching brownfield operations on two of its developments off the coast of Angola, the Greater Plutonio on Block 18 and the PSVM on Block 31. In early 2018 the company entered into a contract with Sparrows Group to manage crane operations and maintenance, and deck. The contract covers four cranes utilized on two FPSOs, the *Greater Plutonio* and the *PSVM*. Sparrows has two bases in Angola located in Talatona and Malonga. This latest scope of work, which was won as part of a competitive tender, will see Sparrows deliver crane operators, maintenance, repair and refurbishment, complete deck services, as well as control and certification of fixed and portable lifting equipment. The company will also be responsible for full project management, planning and coordination, technical support and training. Offshore personnel will also support helicopter operations, fire-fighting duties and maintenance of the on-board safety equipment.

In addition to the Sparrows contract BP awarded a five-year contract to Aker Solutions to supply brownfield modifications, maintenance and operations support for BP's Greater Plutonio and PSVM fields. The scope of work covers the supply of engineering, procurement, and construction services for brownfield projects on the FPSO vessels located at each field. This includes support for upgrades to process, chemical and marine support systems, as well as refurbishment of ageing piping and equipment. According to Aker Solutions, this new contract will benefit from an extensive local training program that it has been driving, developing strong in-country engineering competence for both subsea lifecycle services and topside maintenance, modifications and operations. This ongoing commitment will help secure vital skills for the future of the energy industry in Angola.

ALNG

In Q4 2017 Angola LNG Limited (ALNG) executed a few agreements for LNG sales for the delivery of LNG cargoes around the world. The agreements were with Glencore Energy UK Limited, RWE Supply & Trading, and Vitol SA. ALNG did not reveal the quantity of LNG that falls under these sales agreements. Earlier this year ALNG had to cancel a tender to sell a spot cargo. According to market sources in a Reuters report, the tender was canceled due to a production issue affecting the Angolan LNG export facility. A notice was circulated by Angola LNG to the trading community advising them of the production issue. "On behalf of Angola LNG Ltd., ALM formally advises you that Angola LNG Tender Number 0065 for the offer of a single cargo, through competitive tender, has been withdrawn," the notice said. "This tender cancellation is due to a minor problem at the Soyo plant that has impacted production. This problem is now being remedied."

Source: ALNG

LNG vessel carrying Angolan LNG

By Jennifer Nickle, Deputy Editor

CHAD

President: Idriss Deby (since December 1990)
Independence: August 1960 (from France)
Population: 12,075,985 (July 2017 est.)
GDP (purchasing power parity): $28.56 billion (2017 est.)
GDP - real growth rate: -3.1% (2017 est.)
GDP - per capita (PPP): $2,300 (2017 est.)
Minister of Petroleum and Energy: Béchir Madet
Oil - production: 110,200 bpd (2016 est.)
Oil - consumption: 2,000 bpd (2015 est.)
Oil - proved reserves: 1.5 billion barrels (2017)
Natural gas - production: N/A
Natural gas –consumption: N/A
Natural gas - proved reserves: N/A

Source: CIA FactBook

History & Politics

The Central African country of Chad was once a French colony, although it came to the colonial game late with France not claiming it until the early 1900s. The French held onto Chad for almost six decades before the country achieved its independence.

Chad became independent in 1960 with a southern Christian, Francois NgartavTombalbaye, as president. The country's post-independence history was marked by instability and violence. The banning of political parties in 1963 triggered violent opposition in the Muslim north and most of the violence suffered in the country stemmed from tensions between the north and the south. The tensions and fighting led to a revolt by the Chadian National Liberation Front, or Frolinat, which three years later developed into a fully-fledged guerrilla war. A decade later the French returned to Chad to help put down the revolt in the north.

A coup d'etat terminated Tombalbaye's term as president in 1975 and brought General Felix Malloum to power as leader of the new junta. The new military leaders were unable to retain their seats in office as Malloum proved himself unable to cope with the Frolinat and at the end decided his only chance was in co-opting some of the rebels. In 1978 Malloum allied himself with the insurgent leader Hissène Habré, who entered the government as prime minister. Malloum later regretted bringing Habré into the fold as internal dissent within the government led Habré to send his forces against Malloum's national army in the capital in February 1979. Malloum was ousted from the presidency, but the resulting civil war among the 11 emergent factions was so widespread that it rendered the central government largely irrelevant, at which point other African governments decided to intervene.

In an effort to bring all the factions together, a number of international conferences were held under Nigerian auspices and then under the Organization of African Unity (OAU). The first three conferences had little effect but the fourth held in Nigeria resulted in the Lagos Accord being signed. This accord established a transitional government pending national elections. In November 1979, the Transitional Government of National Unity (GUNT) was formed with a mandate that the north and south both hold positions of prominence in government. This proved to be less than a solid foundation to build a government on and fighting once again broke out.

Habré, while not named president, was named defense minister. He activated forces against the north who was led by GUNT president Goukouni Oueddei. Habré's forces committed heinous crimes and

tortured opposition during his rule. For the next 10 or so years Habré battled one foe or another until the entrance of Chad's current president, Idriss Deby, who ousted him in another coup. Habré was later tried in court and sentenced to life in prison for his crimes against humanity.

Deby, once one of Habré's most trusted generals, led troops against him taking control of N'Djamena in December 1990. After three months of provisional government, Déby's Patriotic Salvation Movement (MPS) approved a national charter in February 1991, with Déby as president. During his years in office Deby has faced more than a few coup attempts, but despite that still remains in office today. President Deby ran for his fifth term in office in 2016 and in April of this year Chad's parliament approved a new constitution expanding his powers.

Economy

On the economic front, Chad's landlocked location results in high transportation costs for imported goods and dependence on neighboring countries. Providing 60% of its export earnings is oil production. Chad became an oil-producing nation in 2003, with the completion of a $4-billion pipeline linking its oilfields to terminals on neighboring Cameroon's Atlantic coast. The country's non-oil export revenues consist of cotton, cattle, livestock, and gum arabic.

Although high oil prices and strong local harvests supported the economy in the past, the drop in prices seen over the past several years has put stress on the government's fiscal position and resulted in significant government cutbacks. Chad relies on foreign assistance and foreign capital for most of its public and private sector investment. Investment in Chad is difficult due to its limited infrastructure, lack of trained workers, extensive government bureaucracy, and corruption. Chad obtained a three-year extended credit facility from the IMF in 2014 and was granted debt relief under the Heavily Indebted Poor Countries Initiative in April 2015.

In 2018, economic policy is being driven by the government's efforts to reverse the recession and to repair damage to public finances and exports that started in 2016. The government is implementing an emergency action plan to counterbalance the drop in oil revenue and to diversify the economy. Chad's national development plan (NDP) cost just over $9 billion with a financing gap of $6.7 billion. The NDP emphasized the importance of private sector participation in Chad's development, as well as the need to improve the business environment, particularly in priority sectors such as mining and agriculture.

The government has also used oil-backed loans as a way to fund its endeavors, which rarely turns out well for the nation. In early 2018 Chad reached a deal with Glencore and four other banks on the restructuring of its $1.45 billion oil-backed loan. The new terms include an extension of the maturity to 2030 from 2022, a two-year grace period on principal repayments, and a lower interest rate of the London Inter-bank Offer Rate (Libor) plus 2% – down from Libor plus 7.5%. The original Glencore loan was to be repaid with crude oil assets, however, Chad's crude sales were hit by the downturn in the price of oil.

Multinational partners, such as the African Development Bank, the EU, and the World Bank are likely to continue budget support in 2018, but Chad will remain a high debt risk, given its dependence on oil revenue and pressure to spend on subsidies and security.

Oil and Gas

Chad is the tenth largest reserves holder in Africa and as previously stated joined the ranks of the world's crude oil producers in July 2003, after the construction of a 1,070-km export pipeline from the oil fields in the Doba Basin of southern Chad through Cameroon to a new terminal at Kribi. The development of the fields and the pipeline was handled by a consortium consisting of ExxonMobil (40%), Petronas (35%), and ChevronTexaco (25%).

The country has approximately 1.5 billion barrels of proven reserves. Crude oil production in Chad is estimated at around 110,000 barrels per day (bpd) and almost all of it is exported via the Chad-Cameroon Pipeline.

Source: ExxonMobil

Checking the quality of crude at the Doba fields

The Doba fields are the country's only source of production at this time. As of the end of 2016 ExxonMobil reported that 582 oil wells were online, 62 water injection wells, and 312 well renovations or enhancement procedures were conducted. A pilot project has shown promise in enhancing crude recovery from the project's asset base and potentially extending the project's life expectancy. Mixing specially designed polymers with the reinjected water to improve the recovery of oil may be the answer. The process requires certain well conditions to be effective and the fields in the Doba Basin have the right combination of factors, including reservoir pressure and temperature, to make this a promising technique for extending the life and profitability of the development.

The project has not been all smooth sailing for those involved as the government of Chad has become greedy on occasion and has come after the companies for more money under one guise or another; the latest being royalties and fines. In October 2016 a Chadian court became a little excessive when it ordered ExxonMobil to pay an exorbitant fine. The US supermajor was ordered to pay a record $74 billion; and if that wasn't enough the firm was also ordered to pay $819 million in royalties. The Chadian court made its ruling in response to a complaint from Chad's finance ministry. ExxonMobil, of course, disagreed with the court's ruling. The amount Chad was asking came to about five times its GDP. The two negotiated which ended up with an agreement being reached in June 2017. The agreement ended the tax dispute and led to the extension of the ExxonMobil-led group's operating license in the Doba Basin until 2050.It also called for the use of the previously mentioned polymer injection technology to increase oil extraction.

A number of other companies have held blocks in the country but no movement on the exploration end has been seen by any of them. It

may seem that Chad is willing to just rest on its Doba fields' laurels, collecting revenue from the production, but this is not the case. The government is keen on increasing investments in the sector and over the past couple years has participated in a number of industry events to promote the country's potential. While Chad does indeed have potential, Deby's propensity to milk operators for all he can seems to be a deterrent to new investment.

Source: Delonex

While not much activity has taken place in recent years, Chad's petroleum sector has not been totally stalled. Delonex Energy gained a stake in the country when it acquired the United Hydrocarbon International Corp. subsidiary, United Hydrocarbon Chad Ltd. (UHCL). UHCL holds United's PSC in Chad. Under the terms of the agreement, Delonex will commit to a comprehensive exploration program with a minimum spend of $65 million in the PSC. This will include 2D and 3D seismic programs and three exploration wells which represents a significant increase in activity compared to UHCL's current obligations. Delonex now holds 100% working interests in Blocks H, DOC, DOD and Largeau III through UHCL.

Block H is located in the Termit Basin, immediately south-east of the prolific Agadem Block in Niger. Delonex has commenced work on an extensive exploration program over the block, comprising the acquisition of up to 400 km 2D seismic and up to 1,200 sq km 3D seismic in 2017/18. Drilling of an exploration well was scheduled for H2 2018. Blocks DOC and DOD are located in the Doba Basin in southern Chad, where the majority of current producing fields are located. Blocks DOC and DOD contain four discoveries with certified combined contingent resources of 9.4 million barrels, as well as a number of undrilled exploration prospects and leads.

Chad is expected to see an increase in production next year as Taiwanese oil producer, CPC Corp., will begin production. The firm will produce an estimated 9,800 bpd according to Fan Chen-Hui, head of CPC's international exploration and production activities. Production is expected to start prior to the end of 2019 at the latest. The announcement was made following the granting of a 25-year license to CPC. In addition to oil, the company's development project is expected to produce natural gas at a rate of 35,000 cubic metric meters per day.

Chad officially began work on two energy projects aimed at transforming its economy. The first is a refinery and the second a gas treatment plant. The foundation stone laying ceremony was held last October, with President Déby laying the foundation stone for the twin plants. The two projects, the Sedigui oil refinery and the Rig-Rig gas treatment plant, both of which are to be built in the north-western Kanem region, will help Chad become partly self-sufficient in petrol and gas, a goal of the government for decades. In his speech, Déby said the Sedigui project had been planned since 1973, but the country's political situation has always been too unstable for it to go ahead. The construction cost for Sedigui is expected to be $120 million and Rig-Rig $58 million. Chad will own 40% of Sedigui and 30% of Rig-Rig, with the remainder split between Nigeria's NNPC and China's CNPC.

The country has a problem with safety, quality, and technical standards at some of its retail stations in the capital. Last year the government demolished an estimated 62 petrol stations considered not up to security and technical standards. The demolition was carried out by security personnel under the supervision of the Ministry of Oil. According to reports, authorities stated these stations sold poor quality fuel and their locations were a cause of concern for the safety of nearby communities. The Ministry said that the owners had been warned in the past to comply with regulations, but the warnings went unheeded. The director-general of the régulateur authority for Chad's downstream oil sector (ARSAT), Idriss Abdel-Khalik Idriss, said an audit conducted by his institution revealed that of the 214 gas stations identified in Ndjamena, only 42 had met administrative, legal, technical, security and environmental standards.

Angola Betting on Renewables

The Angolan government is looking to renewable energy technologies to lower the cost of power production and to help speed up the process of electrifying its rural areas. The news was released by Joao Baptista Borges, the country's Minister of Energy.

By using off-grid electrical installations and mini-grids, the country could more easily reach remote rural areas whose connection to the national electricity grid would be long and costly. The country intends to rely on this type of energy to increase its power from the current 3,334 MW to 7,500 MW by 2025.

SA's Medupi Unit 2 Comes Online

GE Power and Eskom announced that Medupi unit 2, the fifth out of the six units at the power station, has now been successfully synchronized to the national grid. With five units already synchronized, Medupi's plant capacity increases to deliver 4,000MW, enough to power nearly three million households, reaffirming its position as the largest power station in South Africa and fourth in the world. The scope of work for GE's Steam Power business at Medupi includes six turbine islands, air cooled condensers and overall project and construction management.

Source: GE Power

Medupi East View (Front)

Abram Masango, Eskom's Group Executive for Group Capital, said: "The achievement of Unit 2 first synchronization, eight months ahead of the June 2019 schedule, marks a key milestone towards full commercial operation of the unit. Lessons learnt on previous units were implemented on Unit 2, leading to the swiftness in delivering first power. This is an amazing achievement, taking us closer to completing the entire Medupi project, as we will be left with one unit."

Medupi and Kusile are using supercritical technology to achieve much higher efficiencies than the South African fleet average. Both plants also implement dry instead of wet cooling. This results in significantly less water consumption.

Upon completion, the power station will produce a total of 4,764 MW to meet the electricity needs of 3.5 million households in the country. In addition, since 2007, GE in partnership with Eskom has invested over R1 billion to empower local businesses and trained over 300 students on technical, artisan and engineering skills. Forty percent of the workforce trained as pipe fitters, welders and electricians were sourced from the province, and 60 percent were youth.

Egypt Tags Siemens to Operate and Maintain World's Largest Combined-Cycle Plants

Siemens was selected by the Egyptian Electricity Holding Company (EEHC) to provide comprehensive operation and maintenance services (O&M) for the Beni Suef, New Capital and Burullus power plants, for the next eight years.

Source: Siemens

The agreement, which is the largest ever for Siemens Power Generation Services in terms of power generated, includes the implementation of the company's Omnivise digital service solutions. Each of the three 4.8-GW power plants is considered to be the largest gas-fired combined-cycle plant ever built and operated. Together the plants represent approximately 40% of Egypt's power capacity, at the time of signing contracts, generating 14.4 GW – enough to supply 40 million Egyptians with electricity.

The multi-year agreement covers all on-site equipment including 24 gas turbines, 12 steam turbines, 36 generators, 24 heat recovery steam generators and three 500 kV gas-insulated switchgear systems.

Siemens will also implement its services portfolio to improve asset visibility, reliability and availability of the three power plants. Data from the plant operation will be collected, analyzed and transformed into actionable insights such as accurate diagnostics, troubleshooting and condition forecasting, improving plant reliability and reducing downtime. Additionally, the data processed can help to balance maintenance costs, optimize inspection intervals and provide valuable insights into operational risks.

Lourenco Inaugurates Belém Thermal Plant

In Angola, President João Lourenço inaugurated a 50-MW thermal power plant in Huambo province. The Belém plant, consisting of two turbines of 25 MW capacity each, has a cost of $325 million, according to Angola Press.

The production of this plant will supply electricity to the 100,000 inhabitants of the cities of Huambo and Caála. It reinforces the power capacity of the province of Huambo that until then had two sources of energy. These are the Ngove hydropower plant and the Benfica thermal power station, which have respective productions of 20 MW and 30 MW.

The entry into service of the Belém plant will enable the province to meet 90% of the needs of the city of Huambo, according to media reports out of the country.

ABB Selected to Help Upgrade Egypt's Grid in Port Said

ABB was selected by Egypt's state-run utility, the Egyptian Electricity Transmission Company (EETC), to help upgrade and digitalize the electrical grid in the Port Said region.

The scope of supply includes an ABB Ability™ Network Manager SCADA (Supervisory Control and Data Acquisition)/Energy Management System (EMS), more than 120 Remote Terminal Units (RTUs) and a fiber-optic communications network to monitor and control the grid more efficiently. ABB Ability™ is the company's cross-industry digital offering.

Source: ABB

The comprehensive initiative is part of the country's efforts to upgrade and modernize its power grid. A reliable supply of electricity plays a critical role in operating the Suez Canal, a major artery for global commerce, through which about 17,000 ships pass annually carrying up to 800 million tons of cargo. Demand for electricity is growing fast in the area as a result of rapid urbanization and economic growth.

In addition, the country has set ambitious targets for the roll-out and expansion of renewable electricity generation as well as transmission infrastructure over the next few years. Commenting on the occasion of contract signing, Egypt's Minister of Electricity and Renewable Energy, Dr. Mohamed Shaker, highlighted the need to strengthen the power grid and address the growing demand for electricity.

The ABB Ability™ Network Manager SCADA/EMS helps monitor and control the network to ensure high system reliability and optimize efficiency. The mission-critical communication network provides a back-bone where real-time data from equipment in the field can be quickly and reliably leveraged in the "control room," maximizing efficient operations. The order is part of a larger project to upgrade the grid in Egypt and will be handled by a consortium composed of ABB and El Sewedy Electric.

GE Power Wins Egypt's El Dabaa Nuclear Gig

GE Power announced it won the contract to deliver the turbine island equipment for El Dabaa nuclear power plant project in Egypt through AAEM, its joint venture with Atomenergomash. GE Power will supply the basic design of four conventional island, supply four nuclear turbine generator sets, including the Arabelle half-speed steam turbines, and provide technical expertise for the on-site installation and commissioning.

"As Egypt works to diversify its energy production and to support its growing economy, the El Dabaa nuclear power plant, equipped with GE Power's Arabelle technology, will help Egypt deliver on their ambitious goals," said Andreas Lusch, CEO of GE's Steam Power. "Today, the Arabelle is helping to deliver more than 20 GW of power around the world and we will leverage this experience and know-how to deliver reliable, dependable and CO2-free energy to the Egyptian grid."

Electricity demand in Egypt has increased rapidly as a result of their growing population and increasing industrial activity. It's estimated that an additional 1.5 GW of new capacity will be needed each year – that's a 6% increase year over year until 2022. To support this increasing demand without blackouts, Egypt has an ambitious energy plan which includes diversifying its installed base. El Dabaa nuclear power plant will help deliver on that plan by stabilizing the Egyptian grid with dependable, CO2-free energy and having a predictable low cost of electricity. Once in operation, El Dabaa will produce 4.8 GW – enough to power up more than four million homes in Egypt.

The Arabelle steam turbine has been in operation for the past 18 years and still holds the world power output record. This unique technology, adaptable to all reactor types, produces 2% more power output than the traditional configurations. The French fleet of Arabelle has a demonstrated reliability rate of 99.96% over more than 400,000 operating hours.

Recently, GE Power completed building and connecting the Badr substation in Egypt to the national grid. The new 500/220 kV Gas-Insulated Substation will dispatch 1.5 GW of electricity and play a strategic role in the upcoming Egypt – Saudi Arabia Interconnection, linking the national grids of both countries with a 1,300-km transmission line.

Mozambique Inaugurates New Power Plant

Mozambican president, Filipe Nyusi, inaugurated a 106-MW combined-cycle gas power plant in Maputo. The plant consists of two 40 MW gas turbines and a 26 MW steam turbine.

The construction of the gas plant cost $180 million, with $167 million being financed by the Japan International Cooperation Agency (JICA). Its production will supply the populations in the south of the country, in the Maputo province, where it should satisfy about 25% of the demand.

"There is no doubt that our ability to achieve sustainable growth depends on people's access to energy. We must therefore solve this problem of energy deficit facing the country," said Nyusi at the inauguration ceremony. Currently, 70% of the population does not have access to electricity.

Akon Lighting Sierra Leone

Akon, Senegalese rapper and founder of Akon Lighting Africa, has pledged to equip Sierra Leone with 5,000 solar street lights and 2,500 traffic lights to accompany the national electrification agenda.

"The commitment of the philanthropic organization of Akon will be of great help for the electrification of our country. It proves the impressive leadership of President Julius Maada Bio who was able to mobilize, in six months, the international good will to improve the daily lives of Sierra Leoneans," said Yusuf Keketoma, spokesman for the presidency.

Akon Lighting Africa aims to support the process of electrification of the continent. It is already involved in several projects in Africa.

Djibouti Betting on Geothermal

Djibouti is investing in energy autonomy in an effort to end its dependence on energy imports from Ethiopia. To achieve this, it aims to produce by 2020, 100% of its energy from renewable energy based on not only solar and wind, but also on geothermal energy.

The country's location, at the junction point of three major rifts, puts it in a prime spot to take advantage of geothermal energy. This energy trapped in the subsoil, particularly around the Abbe and Assal lakes, is a renewable source of energy that is underutilized.

Currently drilling is underway in the Lake Assal region to evaluate the geothermal potential of the site. Following this study, Djibouti Electricity and its partners intend to launch a call for tenders for the installation of 50 to 100 MW of geothermal power plants.

Kinyerezi II Online in October

Tanzania's Kinyerezi II power plant is set to come online in October. The plant will add 240 MW to the East African nation's grid. "We are currently working on the latest technical concerns before finalizing the project. The work plans show that we should finish by next month," Shoji Watababe, the project director said.

The plant, which began construction in 2016, will be the largest combined cycle gas plant in the country. Its implementation cost $432 million, to which the Tanzanian government contributed 15%.

The balance was provided by the Japan International Cooperation Bank and Japan's Sumitomo Mitsui Corporation, which secured the construction of the infrastructure. Once completed, the infrastructure will require 36 Mmcf/d of natural gas to operate.

BP Charters Safe Zephyrus for Clair Ridge Gangway Work

BP chartered the *Safe Zephyrus* to provide gangway connected operations supporting the completion of some post first oil scopes in summer months when the weather is favorable at the Clair Ridge platform West of Shetland in the UK sector of the North Sea. The firm duration of the contract commencing mid-May 2019 is five months with a one-month option and directly follows the completion of the Johan Sverdrup contract.

The *Safe Zephyrus* is one of the world's most advanced and versatile accommodation vessels, complying with stringent rules in both UK and Norway. The contract will be performed using dynamic positioning, affording BP flexibility and high bed capacity throughout operations.

Total value of the contract excluding the option periods is approximately $19 million.

Aker Solutions Wins Subsea Job on Mero 1 Project

Aker Solutions and Petrobras entered a contract for Aker to provide subsea production system and related services for the Brazilian firm's Mero 1 project within the Mero field development. The oil field is one of the largest oil discoveries in Brazil's pre-salt area.

The subsea production system will consist of 12 vertical subsea trees designed for Brazil's pre-salt, four subsea distribution units, three topside master control stations for the FPSO and spare parts. The order also includes installation and commissioning support services.

Aker Solutions' subsea manufacturing facility in São José dos Pinhais and its subsea services base in Rio das Ostras will carry out the work.

The work has already begun and deliveries are scheduled for 2020. Installations are scheduled between 2020 and 2023.

The subsea production system will be hooked up to the first full-scale floating production, storage and offloading (FPSO) vessel for Mero, known as the *Guanabara FPSO*. The FPSO is scheduled to come on stream in 2021 and will have capacity to process up to 180,000 bpd or oil and 12 Mmcm/d of gas.

The ultra-deepwater Mero field is located in the northwestern area of the original Libra block, which is about 180 km south of Rio de Janeiro. First oil was produced in November last year.

Pragma Secures Contract in Saudi Arabia

Pragma Well Technology Ltd. secured a contract with Saudi Aramco worth over $700,000. Saudi Aramco Exploration and Petroleum Engineering Centre – Advanced Research Center (EXPEC ARC) will sponsor a three-year contract to develop an Extreme Expandable Packer for its Thru-tubing Water Shut-off challenge.

"Pragma shall develop a Thru-tubing Expandable Patch (TEP), employing additive manufacturing," said Dan Purkis, Technical Director and inventor. "These printing machines can manufacture parts that would be impossible using traditional reductive techniques, making extreme expansion solutions possible. We are getting very exciting results and see a wide range of future applications."

Jonathan Brown, Senior Petroleum Engineer at Saudi Aramco said: "This collaboration is part of our Fourth Industrial Revolution initiative in the area of Advanced Materials. We strive to sponsor new methods to solve old problems and Pragma has discovered a way to develop designs that were not possible even ten years ago."

The TEP will be deployed via traditional well intervention to further extend the life of wells prior to recompletion or side-tracking.

Brazil Names Pre-Salt Winners

Brazil's latest auction saw a number of major E&P firms awarded access to Brazil's pre-salt potential. Firms like Shell, Chevron, and ExxonMobil all were awarded stakes in acreage offshore the South American country. Shell, partnered with Chevron won a 35-year PSC for the Saturno pre-salt block located off the coast of Brazil in the Santos Basin.

ExxonMobil increased its pre-salt holdings in Brazil with the award of the Titã exploration block with co-venturer Qatar Petroleum. The block awarded added more than 71,500 net acres to the ExxonMobil portfolio, expanding the company's total position in the country to approximately 2.3 million net acres.

Through the remainder of 2018 and into 2019, ExxonMobil will obtain 3D seismic coverage, as well as continue to progress work on regulatory requirements for exploration drilling by 2020.

BP Energy, Ecopetrol and CNOOC won the Pau Brasil field. BP will have 50% of the consortium, CNOOC will have 30% and Ecopetrol will have 20%.

The auction was the fifth that Brazil has held for areas in the pre-salt region off its coast near São Paulo and Rio de Janeiro, where studies show as many as 100 billion barrels of crude are locked under salt layers far beneath the seabed.

Nova PDO Approved

Wintershall Norge AS and its partners Capricorn Norge AS (a fully owned subsidiary of Cairn Energy PLC), Spirit Energy, Edison Norge AS, and DEA Norge have received approval from the Ministry of Petroleum and Energy for the plan for development and operation (PDO) for the Nova development. The development is about 120 km northwest of Bergen, Norway.

Source: Cairn Energy

Wintershall submitted the PDO to the Ministry in mid-May. The approved development solution for the Nova field involves two subsea templates located on the ocean floor tied back to the nearby Gjøa platform, operated by Neptune Energy.

The Nova field will be developed as a subsea tie-back connecting two templates to the Gjøa platform for processing and export. Gjøa will also provide lift gas to the field and water injection for pressure support. Power for the Nova field comes via the Gjøa platform from shore. This sustainable development solution is a win-win situation as instead of building a new installation, the connection to the nearby platform will save costs for Wintershall and extend the economic life-time of the existing infrastructure.

A significant number of contracts have already been awarded for the Nova project, notably the subsea production system to Aker Solutions, the contract for pipeline and subsea construction to Subsea 7, and the rig contract to Seadrill.

Upland Resources Secures Ensco-72 Jack-up

Upland Resources signed a contract with UK-based drilling contractor Ensco U.K. Ltd for the provision of the Ensco-72 jack-up rig to drill the Wick well. The rig site survey has been completed and Corallian Energy expects drilling of the Wick well to take place in Q4, following receipt of the outstanding necessary regulatory approvals and consents.

Steve Staley, CEO of Upland Resources Limited, said: "We are pleased to announce the signing of

the contract with Ensco which represents another important step towards drilling the potentially transformative Wick well. We look forward to the receipt in due course of the necessary regulatory approvals to enable the well to spud in Q4 of this year.

"We are also looking forward to working closely with Ensco when drilling commences and will continue to update the market on further developments."

The company estimates that the Wick structure, which lies principally in the licensed area of License P2235, could hold in-place P50 resources of around 250 million barrels. The Wick well targets reservoir sequences within the Wick structure.

Umm Lulu and SARB Production to Increase

OMV reported that production at the Umm Lulu and SARB (Satah Al Razboot) fields in Abu Dhabi shows an initial capacity of 50,000 bpd, which will increase to 129,000 bpd by the end of 2018and 215,000 bpd by 2023.

In April OMV signed an agreement for the award of a 20% stake in the offshore concession Abu Dhabi – SARB (with the satellite fields Bin Nasher and Al Bateel) and Umm Lulu as well as the associated infrastructure. The agreed participation fee amounted to $1.5 billion and the duration of the contract is 40 years.

The SARB field, 120 km away from Abu Dhabi, and the Umm Lulu field, about 30 km away from Abu Dhabi, are both located offshore in shallow waters. The early production from Umm Lulu started in Q4 2016.

OMV's share of the reserves, for the period of the concession agreement, would amount to approximately 450 million barrels of oil for the two main fields, with upside potentials from the satellite fields Bin Nasher and Al Bateel.

OMV's capital expenditures over the contract term are estimated to amount to approximately $2 billion, thereof approximately $150 million will be spent per annum during the first five years.

Equinor and Aker Solutions Sign Collaboration Agreement

Aker Solutions signed a strategic, global collaboration agreement with Equinor (formerly Statoil) to ensure mutual and continuous improvement on current and future subsea projects within the domains of safety, quality, technology, execution and cost.

"Aker Solutions and Equinor's ongoing collaboration has consistently generated mutually beneficial technology developments, working process simplifications and standardizations," says Luis Araujo, CEO at Aker Solutions. "This agreement formalizes the companies' joint ambitions of achieving efficiency and improvement goals."

Several innovative and cost-efficient solutions have materialized from Aker Solutions' and Equinor's history of collaboration. Aker Solutions' newest subsea production system with vertical trees and associated tools were developed in close collaboration with Equinor, designed to be more efficient and reduce life-cycle costs. The subsea equipment is smaller and lighter than previous versions and has now become Equinor's standard solution. As well as adopting this technology on the Johan Castberg field, Equinor will use trees of the same design on its Troll and Askeladd fields offshore Norway and they have also been commissioned by other operators on the Norwegian Shelf, including Aker BP for the Ærfugl development.

"Equinor's Johan Castberg development is an example of what can be achieved when we work in close collaboration with customers," Araujo also offered.

Pennine in Velca Farm-in Discussions

Pennine Petroleum Corp. is currently discussing its Velca Block PSA with a potential "farm-in" partner to progress drilling activities in Albania. "Our current partner Albpetrol (Albania's national oil company) is eagerly anticipating success in the Velca Block, given its status as a favored concession," noted Pennine's CEO N. Desmond Smith."We're pursuing all avenues to develop what we see as a high-impact field extension initiative," adds Mr. Smith, "and we believe the talks we're holding now will create prosperity for our shareholders and the people of Albania."

Pennine's "farm-in" talks with an intermediate-sized European oil conglomerate have been ongoing since early July. Meetings have been held in Albania and the potential partner's home country, with due-diligence work currently taking place in several areas that include geological and geophysical data, taxation, accounting and legal.

"Our discussions have been collegial and very productive, and have involved officials from Albania's National Agency for Natural Resources (AKBN)," noted Smith. "A joint-venture arrangement such as this would play to everyone's strengths and accelerate a timeline for Velca Block drilling and production."

Pennine holds a Production Sharing Agreement (PSA) for the 306-sq km Velca Block with Albpetrol Sh.A. According to Kastriot Bejtaj, renowned Albanian oil executive and current chairman of the Velca Block PSA advisory committee, "The Velca Block is considered by Albpetrol experts as a low-geological-risk asset at the optimal depth."

In May 2017, Pennine released the results of an independent resource estimate that offered a "best-case" recoverable scenario of 26.4 million barrels of light crude for the Velca Block, and a net risked prospective resource for Pennine of 11.2 million barrels of oil, after payout and joint venture interests.

The report compares the potential of the Velca Block's Ramica Anticline structure to established and producing fields along the so-called "String of Pearls" fault line, which runs down the spine of the Balkan republic from northwest to southeast.

Maersk Deliverer to Drill in Timor Sea

Maersk Drilling and ENI JPDA 11-106 BV, operator of the JPDA 11-106 JV, signed a one-well contract for use of Maersk's semi-submersible rig the *Maersk Deliverer* for drilling in the Timor Sea.

Source: Maersk Drilling

The estimated duration of the firm contract is two months, expected to commence in March 2019. The contract contains an option for an additional well with an expected duration of an additional two months.

The *Mærsk Deliverer* is currently warm-stacked in Labuan, Malaysia, after completing a well program in March 2018. The rig, which was built in 2009 and is able to drill at water depths of up to 3,000 meters, is expected to mobilize into the Timor Sea in early 2019.

As part of executing the drilling campaign, Maersk Drilling will be using a quota of local personnel and procuring goods and services from local suppliers, thereby contributing to the local economy.

Rigsite Crew Training Unit from Wild Well

Wild Well Control will now offer well control training to drilling rig crews onsite with its rigsite well control Crew Training Unit. The company intends that its Crew Training Unit will extend its leadership to the rigsite with an innovative way to educate drilling rig crews.

Source: Wild Well

The training will prepare crews to recognize well control issues and understand how to safely shut-in oil and gas wells. The training can be tailored to address specific well control concerns and will also review the indicative signs of well kicks, critical decision-making skills in a collaborative format, proper drilling techniques and proper shut-in procedures.

"Rig crews are the first line of defense to a well control event. They must be trained and alert to well conditions at all times. This training will enhance a crew's confidence and ability to manage well control issues, preparing them to quickly recognize potential pressure control problems and react quickly to safely maintain control of the well," said Kenny Smith, Wild Well's GM of Training.

Wild Well's new onsite rig crew training service will be initially available in the Permian Basin region. The mobile well control Crew Training Unit enhances Wild Well's local efforts to support the ongoing activity in the region by providing localized training, well intervention and emergency response equipment currently staged for quick deployment.

Wild Well's Crew Training Unit, prepares rig crew members to maintain well control when a kick occurs during live drilling operations. Wild Well's other risk management services including emergency response planning, well control equipment surveys, and rigsite assessments can be integrated with rigsite crew training.

Safe Boreas North Sea Stay Extended

Prosafe has agreed with Equinor UK Ltd to extend the *Safe Boreas'* time at the Mariner project in the UK sector of the North Sea by eight months from November 2018 until June 2019. In addition, Equinor has up to six months of options available. Total value of the extension commencing early November 2018 is approximately $45 million.

Jesper Kragh Andresen, CEO of Prosafe says: "This contract extension demonstrates the good performance Prosafe and the *Safe Boreas* has achieved to support the Mariner hook up and commissioning project. The *Safe Boreas* with its large bed capacity and advanced station keeping will continue providing a high level of service throughout the remainder of the contract."

Magseis and BGP Sign LoI

Magseis signed a LoI with BGP Offshore for the sale of 17,000 MASS I ocean bottom seismic nodes and four MASS Modular handling systems. The seismic equipment will be delivered in several batches beginning in Q1 2019 through Q3 2019.

The LoI is conditional to obtaining necessary export licenses and signed Sales Agreement between Magseis and the BGP Offshore appointed company.

Per Christian Grytnes, CEO, commented: "We are delighted to be selected as the seismic node technology provider to BGP Offshore. The selection is yet another confirmation of the attractiveness of the Magseis technology and demonstrates the competitiveness of Magseis nodes in a wide range of seismic markets including shallow water/transition zones. The Sales Agreement for the MASS I ocean bottom seismic nodes add further flexibility and diversification to the Magseis business model which includes full scale operations of seismic node surveys, lease of nodes and sale of nodes. Magseis continues its program to build node capacity for expanded operations in 2019 and 2020."

Magseis maintains its revenue guidance for 2018 at $100 million and issued its revenue guidance range for 2019 of $190 to $210 million.

ONGC Awards Subsea Contract

Baker Hughes (BHGE, a GE company), McDermott International, and L&T Hydrocarbon Engineering (LTHE) were awarded the subsea contract for ONGC's largest deepwater project, the development of Block DWN-98/2 in the Krishna Godavari basin.

The project brings together leading subsea equipment and services from BHGE, McDermott and LTHE to provide ONGC with end-to-end project delivery.

The integrated subsea package includes the supply of all subsea production systems (SPS), including 34 deepwater trees, and the installation of subsea umbilicals, risers and flowlines (SURF) at a water depth of between 984 ft and 10,500 ft.

BHGE will provide all of the subsea hardware as well as pre-commissioning services, and McDermott will bring its specialized fleet of pipelay and construction vessels and engineering, procurement, construction and installation capabilities. By reducing the number of interfaces across the project, the group aims to reduce complexity, drive speed and increase execution efficiency for ONGC.

BHGE's scope will include subsea hardware including trees, manifolds, controls, connection systems, SPS installation tools and services, as well as flexible risers and flowlines, umbilical and topside controls. BHGE will also provide the pre-commissioning services for additional phases of the project. The project will leverage BHGE's existing footprint in Kakinada for ongoing services.

McDermott will be responsible for transportation and installation of SURF and SPS facilities using its engineering and other key resources in Kuala Lumpur, Malaysia and Chennai, India as well as its installation assets Derrick Barge 30, Lay Vessel North Ocean 105 and Lay Vessel 108.

The project is one of the first major deepwater developments in India and a milestone for realizing India's domestic energy potential. The group will offer a comprehensive solution that will also boost local manufacturing, in support of Make in India. Built on an agreement signed in 2016, LTHE and BHGE will fabricate manifolds for the first time in India as part of this project.

The subsea award represents the largest single subsea contract awarded by ONGC. Delivery is scheduled for 2020 for the gas system and 2021 for the oil system.

Independent E&P Companies				
Company	Ticker Symbol	Currency	One-month Percent Change	Price as of October 22
Erin Energy	ERN	USD	133.80%	3.80
Serica Energy	SQZ.L	GBP	60.50%	111.10
Eco Atlantic Oil & Gas	EOG.V	CAD	37.50%	0.77
Chariot Oil & Gas	CHAR.L	GBP	-72.30%	2.95
Pancontinental Oil & Gas	PCI.AX	AUD	-66.60%	0.002
Bowleven plc	BLVN.L	GBP	-33.80%	26.45

Angola Considers Partial Listing for Sonangol

The Angolan government is considering partially listing its oil and gas firm, Sonangol. The news follows recent comments by Diamantino Azevedo, the country's Minister of Mineral Resources and Oil to local media outlets.

Azevedo was reported by state newspaper *Jornal de Angolaas* as saying that any partial listing would only occur after June 2019 when a restructuring of the company is complete.

The Sonangol restructure includes spinning off non-core assets and separating regulatory responsibilities from the company to form a new petroleum agency.

Eco Atlantic Acquires Remaining PAO Namibia Stake

Eco (Atlantic) Oil & Gas, through its wholly owned subsidiary Pan Africa Oil Namibia Holdings (PAON Holdings), acquired the remaining 10% of the shares of Pan Africa Oil Namibia (PAO Namibia) from Amis Oil and Gas. Following completion of the acquisition, PAO Namibia will be a wholly owned subsidiary of the company.

Pursuant to the terms of the acquisition, Eco will issue 300,000 common shares to Amis. Amis has agreed not to dispose of the consideration shares for a period of 181 days following their issuance. The closing of the acquisition is conditional upon TSX regulatory approval and admission of the consideration shares to trading on AIM.

As a result of the acquisition, Eco will hold 100% of the issued share capital of PAO Namibia and in turn an 80% working interest (previously 72%) in the Tamar License (PEL 050). The remaining 20% working interest in the Tamar license is divided equally between NAMCOR (the National Petroleum Corp. of Namibia) and Spectrum Geo.

BoI and CEXIM to Fund Modular Refineries

Nigeria's Bank of Industry (BoI), and the Export-Import Bank of China (CEXIM), signed a MoU to provide a credit line of up to $500 million towards the establishment of modular refineries, and Flare Gas Recovery Programs in the country.

BoI's MD and CEO, Olukayode Pitan, emphasized the job creation potential of this partnership while speaking at the signing ceremony in Beijing. Pitan said the agreement is set to "create over 100,000 jobs in Nigeria's oil and gas sector." The agreement also advances the government's modular refineries and flare gas recovery program.

As part of the MoU between BoI and CEXIM, the facility will be utilized to finance the purchase of equipment and machinery from China by investors and project owners of modular refineries in Nigeria. The aim is to ensure availability of refined petroleum products within the country, monetize gas flare, reduce cost of products in the mid-term, and provide employment for Nigerians.

Vivo and Engen Edge Towards Deal Closure

The acquisition of a network of Engen petrol stations by Vivo Energy is moving closer to closure. The deal, first announced in early-December, is expected to close in Q1 2019.

The deal includes Engen stations in nine African nations, excluding the DRC. According to Vivo, talks were ongoing between the companies and DRC's government and said that any purchase of Engen stations in DRC would be via a separate transaction.

Vivo Energy CEO Christian Chammas said nine countries had come on board, allowing the deal to be fast-tracked. The deal includes Engen's network of filling stations in Zimbabwe, Reunion, Zambia, Gabon, Rwanda, Mozambique, Tanzania, Kenya and Malawi.

Saipem Convicted in Milan Court

The Court of Milan pronounced judgement in the criminal proceedings concerning offenses committed in Algeria. The Court has convicted, among others, some former managers of Saipem for international corruption and has ordered the company to pay the pecuniary sanction of €400,000, as it is held liable for the administrative offence pursuant to Articles 5, 6, 7 and 25 paragraphs 3 and 4 of Legislative Decree 231/2001, with reference to the offense of international corruption.

The Court ordered, as alleged profit of the offense, the confiscation of the total sum of about €197 million for all the individuals sentenced. The Court also ordered, as alleged price of the offense, the confiscation of the total sum of approximately €197 million in respect of Saipem pursuant to Article 19 of Legislative Decree No. 231/2001.

As far as that which emerged during the trial and the requests of the Public Prosecutor, at present, a preventive seizure for a total amount of about €160 million has already been in place against some individuals – other than the company – all condemned with the ruling. The former managers of the company convicted by the Court all left the company between 2008 and 2012.

Saipem reserves the right to appeal the Court's decision on the basis of the reasons underpinning the ruling, which will be filed within 90 days.

Wintershall and DEA to Merge

BASF and LetterOne signed a definitive transaction agreement to merge their respective oil and gas businesses, Wintershall and DEA Deutsche Erdol respectively. The merged firms will become one company, Wintershall DEA.

Crude oil and natural gas production at Wintershall and DEA totaled around 210 million boe in 2017; that corresponds to a daily production volume of around 575,000 boe. Through this merger, BASF and LetterOne are laying the foundation for further profitable growth. The medium-term plan is to list Wintershall DEA through an initial public offering.

Closure of the transaction is expected in H1 2019, subject to the approvals from the merger control and foreign investment authorities, as well as a number of mining authorities and the German Federal Network Agency. Until closing,

Drilling & Service Companies				
Company	Ticker Symbol	Currency	One-month Percent Change	Price as of October 22
Rowan Company	RDC	USD	29.40%	17.95
Helix Energy Solutions	HLX	USD	11.50%	10.26
Transocean	RIG	USD	6.40%	12.19
Petroleum Geo Services	PGS.OL	NOK	-31.00%	25.39
McDermott International	MDR	USD	-26.10%	14.22
ION Geophysical	IO	USD	-21.50%	13.50

Wintershall and DEA will continue to operate as independent companies.

Both have ambitious goals for the new company, striving for oil and gas production of 750,000 to 800,000 boepd between 2021 and 2023.

Atlas Oranto to Construct Two Schools in South Sudan

Oranto Petroleum Ltd. (Oranto) has completed the award of a contract for the construction of two primary schools to be located in Yirol and Rumbek, two communities located in central South Sudan and northwest of Juba, the country's capital.

Estimated at over $800,000, the project for the construction of the schools will be executed by local construction company Dynamic Supplies and Construction Ltd., in line with Oranto's policy to significantly engage local human and material resources in all its activities in the Republic of South Sudan.

The construction of the state-of-the-art schools signals a further boost to value addition to the people of South Sudan from their oil and gas resources as championed by Oranto, against the backdrop of the various peace initiatives being embarked upon by the Government of South Sudan.

Oilserv Forms JV with GEPetrol

Nigerian firm Oilserv Limited entered into a JV agreement with Equatorial Guinea's state-run oil and gas firm GEPetrol. The agreement with GEPetrol will aid Oilserv in expanding its footprint in the industry. The joint venture agreement resulted in the formation of Oilserv Equatorial Guinea.

Chairman /Group CEO of Oilserv Group, Emeka Okwuosa said the JV offers Oilserv a strategic foothold in one of the world's fastest-growing economies and the third largest oil producing country in sub-Saharan Africa.

Director-General/CEO of GEPetrol, Antonio Oburu Ondo said at the signing of the agreement that he welcomed "yet another global brand to GEPetrol." He went on to say that the new partnership was a testament of the government's continuous efforts in encouraging private sector participation with greater economic liberalization policies and the creation of favorable investment climate.

African Petroleum Issues Petrosen Reminder of Pending Arbitration

African Petroleum commented on the recent update issued by Petrosen, Senegal's state-run oil and gas firm, which states that it is seeking tenders for two offshore blocks in Senegal, including the Senegal Offshore Sud Profond (SOSP) block in which African Petroleum holds a 90% operated working interest.

African Petroleum's legal counsel has written to the Senegalese authorities reminding them of African Petroleum's rights under the SOSP production sharing contract (SOSP PSC). The SOSP PSC is currently the subject of an ongoing ICSID arbitration process which has been acknowledged by the Senegalese authorities.

Aminex Increases Stakes Through Bounty Default

Aminex revealed that as a result of payment defaults by Bounty Oil & Gas under the joint operating agreements relating to the Kiliwani North Development License (KNDL) and the Nyuni Area PSA, that Bounty is now deemed to have transferred its interests in such assets to Aminex's wholly-owned subsidiary, Ndovu Resources and the other non-defaulting parties.

Aminex said that the transferred interests include all rights and liabilities except that Bounty will, pursuant to the joint operating agreements, remain liable for its share of any outstanding work commitments and abandonment costs.

Subject to the completion of certain formalities, Aminex's interests in the KNDL (which contains the Kiliwani North field and Kiliwani South prospect) and the offshore Nyuni Area PSA have therefore increased by 6.383% and 6.6667% respectively.

The non-defaulting parties' interests in the assets are now: Kiliwani North Development License – Ndovu Resources 63.8304%; RAK Gas 27.7778%; and Solo Oil 8.3918%. For the Nyuni Area PSA – Ndovu Resources 100%.

South Sudan Committed to Local Content

During a meeting between South Sudan's Minister of Petroleum, Ezekiel Lol Gatkuoth, and Nigeria's President Muhammadu Buhari, Gatkuoth reaffirmed his country's commitment to the implementation of new local content regulations in the oil and gas sector.

The two men discussed South Sudan expanding its oil and gas infrastructure and bringing more wells into production.

Gatkuoth requested technical assistance and cooperation from Nigeria and also requested that Nigeria share its experience in the hydrocarbon industry with South Sudan.

Midwestern Picks up Stakes in San Leon

San Leon Energy reported that it received notification from Midwestern that it has entered into a binding agreement with SunTrust Oil Company Nigeria to acquire SunTrust's equity interest in San Leon.

Pursuant to the agreement, Midwestern will acquire a total of 71,487,179 ordinary shares in San Leon (representing 14.29 % of the issued ordinary shares of the company and SunTrust's entire remaining interest in the company).

The shares, which are currently held directly and/or indirectly by SunTrust are being transferred to Midwestern in exchange for the transfer of interests in certain assets currently owned by Midwestern. San Leon has been informed by Midwestern that 47,243,590 ordinary shares in San Leon (representing 9.44% of issued ordinary shares) have already been transferred to Midwestern, and that the remaining shares will be transferred by SunTrust in the near term.The transaction does not directly involve San Leon or its assets.

Major E&P Companies				
Company	Ticker Symbol	Currency	One-month Percent Change	Price as of October 22
ExxonMobil	XOM	USD	3.10%	81.97
ConocoPhillips	COP	USD	1.60%	72.49
BP	BP.L	GBP	1.10%	558.70
Engie	ENGI.PA	EUR	-10.10%	11.82
Royal Dutch Shell	RDSA.L	GBP	-3.50%	2506.00
Total	FP.PA	EUR	-1.40%	52.68

Midwestern is a partner of San Leon in Midwestern Leon Petroleum Limited (MLPL).

ENI and UNDP Join Forces on SDGs in Africa

ENI and the UNDP are joining forces to improve access to sustainable energy and help achieve the Sustainable Development Goals (SDGs) in Africa. The partnership is the first of its kind between UNDP and a global energy company.

A MoU was signed by ENI CEO, Claudio Descalzi, and UNDP Administrator, Achim Steiner, during an official ceremony hosted by the Permanent Mission of Italy to the UN on the margins of the 73rd General Assembly.

Per the agreement, ENI will develop business ventures to increase access to clean energy in the region and UNDP will use its extensive development network in over 170 countries to foster an enabling environment to implement the partnership and assess its sustainable impact in local communities. Angola, Congo, Côte d'Ivoire, Egypt, Gabon, Ghana, Kenya, Mozambique, Nigeria, and Tanzania are among the first countries slated for the initial roll out of the partnership.

The Italian firm's projects will include electricity production from PV plants (including floating systems), wind farms, off-grid hybrid solutions, reforestation and clean cooking solutions. For its commitment, UNDP will work to raise awareness for clean energy and sustainable business models and provide training and capacity building in recipient communities.

The MoU between ENI and UNDP follows the launch in September 2017 of the Center for Climate and Sustainable Development in Rome under the joint auspices of the Italian Ministry of Environment and the Food and Agricultural Organization (FAO) of the United Nations to facilitate sustainable development in Africa.

African Rig Count

Country	2018			
	June	July	August	September
Algeria	50	45	49	49
Angola	4	4	4	4
Benin	0	0	0	0
Cameroon	1	1	1	1
Chad	1	1	5	7
Congo	3	3	3	4
Congo (DRC)	0	0	0	0
Cote D'Ivoire	1	1	1	1
Djibouti	1	1	1	1
Egypt	27	32	29	23
Equatorial Guinea	0	0	0	0
Ethiopia	2	2	2	2
Gabon	3	4	3	3
Ghana	1	1	0	0
Guinea	0	0	0	0
Kenya	9	9	8	8
Liberia	0	0	0	0
Libya	1	5	8	9
Mauritania	0	0	0	0
Morocco	1	1	1	1
Mozambique	0	0	0	0
Namibia	0	0	0	1
Niger	1	1	1	1
Nigeria	13	16	14	14
Senegal	0	0	0	0
Sierra Leone	0	0	0	0
South Africa	0	0	0	0
Sudan*	0	0	0	0
Tanzania	0	0	0	0
Togo	0	0	0	0
Tunisia	2	3	3	3
Uganda	0	0	0	0

Source: BHGE

*Data not available

Africa Production of Crude Oil

(including Lease Condensate, Thousand Barrels/Day)

Country	2018		
	July	August	September
Algeria	1062	1057	1049
Angola	1456	1462	1519
Cameroon	78	81	80
Chad	92	91	91
Congo (Brazzaville)	313	313	312
Congo (Kinshasa)	20	20	20
Cote d'Ivoire (Ivory Coast)	29	28	28
Egypt	640	642	641
Equatorial Guinea	126	126	124
Gabon	188	188	187
Ghana	121	123	120
Libya	664	950	1053
Mauritania	0	0	0
Morocco	0.5	0.5	0.5
Niger	20	20	20
Nigeria	1667	1722	1748
South Africa	3	3	3
Sudan and South Sudan	211	220	221
Tunisia	48	49	48
Total Africa	6738.5	7095.5	7264.5

Various sources including EIA, IEA and OPEC

Production of Natural Gas Plant Liquids

(Thousand Barrels/Day)

Country	2018		
	February	March	April
Algeria	320	320	320
Angola	51	51	51
Congo (Brazzaville)	15	15	15
Egypt	217	215	217
Equatorial Guinea	21	21	21
Libya	31	31	31
South Africa	5	5	5
Tunisia	3.5	4	3.5
Total Africa	663.5	662	663.5

Various sources including EIA, IEA and OPEC

World Rig Count

Country	September 2018			Variance From Last Month	August 2018			September 2017		
	Land	Offshore	Total		Land	Offshore	Total	Land	Offshore	Total
Latin America	167	25	192	0	168	24	192	150	27	177
Europe	56	30	86	1	53	32	85	58	33	91
Africa	90	19	109	5	87	17	104	66	13	79
Middle East	347	48	395	-7	351	51	402	347	48	395
Asia Pacific	140	82	222	-3	137	88	225	120	69	189
United States	1,033	20	1,004	3	1,031	19	1,050	922	18	940
Canada	199	2	201	-19	219	1	220	209	1	210
Worldwide Total	2,032	226	2,258	-20	1,250	232	2,278	1,872	209	2,081

Source: BHGE

OPEC Oil Production
(Thousand Barrels/Day*)

Country	2018 July	2018 August	2018 September
Algeria	1062	1057	1057
Angola	1456	1462	1462
Congo	313	313	313
Ecuador	525	531	531
Equatorial Guinea	126	126	126
Gabon	188	188	188
Iran, I.R.	3737	3597	3597
Iraq	4556	4642	4642
Kuwait	2791	2806	2806
Libya	664	950	950
Nigeria	1667	1722	1722
Qatar	616	618	618
Saudi Arabia	10387	10404	10404
UAE	2959	2974	2974
Venezuela	1278	1239	1239
TOTAL OPEC	32323	32629	32629
OPEC exluding Iraq	27767	28005	28005

Source: OPEC

** Based on secondary sources*

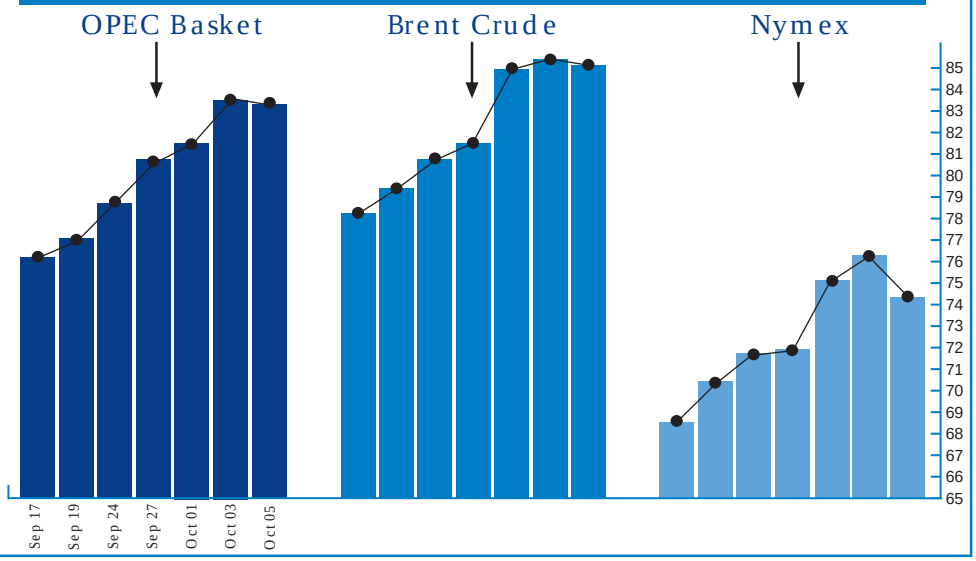
World Oil Production
(million barrels per day)

Country	2018 Q2 2018	2018 July	2018 August
Americas	21.89	22.11	22.35
Canada	4.84	4.88	5.03
Chile	0.01	0.01	0.01
Mexico	2.13	2.09	2.09
United States	14.92	15.13	15.22
Asia Oceania	0.38	0.36	0.38
Australia	0.31	0.29	0.31
Others	0.07	0.07	0.07
Europe	3.31	3.38	3.32
Norway	1.74	1.83	1.81
UK	1.06	1.05	1.01
Others	0.51	0.5	0.51
Total OECD	25.58	25.85	26.05
Total Non OECD	29.39	29.28	29.03

Source: IEA Oil Market Report

Oil Prices

September 17	$
OPEC Basket	76.19
Brent Crude	78.22
Nymex	68.59
September 19	
OPEC Basket	77.06
Brent Crude	79.43
Nymex	70.52
September 24	
OPEC Basket	78.81
Brent Crude	80.89
Nymex	71.76
September 27	
OPEC Basket	80.88
Brent Crude	81.54
Nymex	71.96
October 01	
OPEC Basket	81.58
Brent Crude	84.94
Nymex	75.14
October 03	
OPEC Basket	83.64
Brent Crude	85.45
Nymex	76.24
October 05	
OPEC Basket	83.24
Brent Crude	85.12
Nymex	74.26

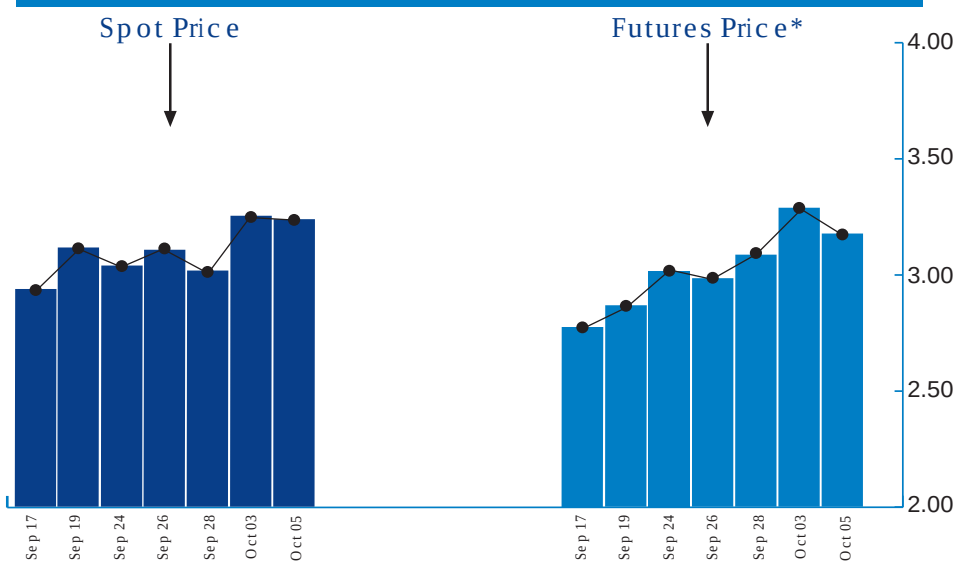


Data compiled by Petroleum Africa from various sources including OPEC, EIA and others

Gas Prices

September 17	$
Henry Hub	2.95
New York	2.77
September 19	
Henry Hub	3.11
New York	2.88
September 24	
Henry Hub	3.04
New York	3.02
September 26	
Henry Hub	3.10
New York	2.98
September 28	
Henry Hub	3.01
New York	3.09
October 03	
Henry Hub	3.26
New York	3.29
October 05	
Henry Hub	3.25
New York	3.18

Dollars per BTU



Conferences

October 2018			
1-3	Future Energy Africa Exhibition and Conference	Cape Town, South Africa	www.futureenergyafrica.com
4-5	Equatorial Guinea Gas Summit & Exhibition	Malabo, Equatorial Guinea	www.cwceg.com
9-11	Benghazi International Forum and Exhibition of Oil & Gas (BIEOG2018)	Benghazi, Libya	www.bieogexpo.ly
9-11	2nd ECOWAS Mining & Petroleum Forum & Exhibition	Abidjan, Cote d'Ivoire	www.ametrade.org
9-11	Asian Downstream Week (ADW 2018)	Bangkok, Thailand	www.europetro.com
17-18	Africa Marginal and Independent Oil/Gas Producers Conference	London, UK	www.afroginvestmentsconference.com
22-24	Navingo Offshore Energy Exhibition & Conference	Amsterdam, The Netherlands	www.navingo.com
23-23	SPE London Conference	London, UK	www.spe.org
30-31	AMI's Oil & Gas Non-Metallics 2018	London, UK	www.ami.international
31-Nov 2	5th Mozambique Gas Summit & Exhibition	Maputo, Mozambique	www.mozambique-gas-summit.com
November 2018			
5-9	Africa Oil Week 2018	Cape Town, South Africa	www.Africa-oilweek.com
12-15	Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC)	Abu Dhabi, UAE	www.adipec.com
14-15	Gas Options: North & West Africa Summit	Marrakech, Morocco	www.gasoptions-nwafrica.com
21-22	9th Annual Ghana Summit	Accra, Ghana	www.cwcghana.com
22-22	'Big Five' Board Awards 2018	London, UK	www.africa-petroleumclub.com
26-27	2nd Africa Oil & Gas Local Content Conference & Exhibition	Luanda, Angola	www.ametrade.org
December 2018			
3-6	The 8th Practical Nigerian Content Forum (PNC)	Yenagoa, Nigeria	www.cwcpnc.com
3-4	BBTC MENA 2018 – Bottom of the Barrel Technology Conference	Manama, Bahrain	www.europetro.com
5-6	ME-CAT 2018 – Middle East Catalyst Technology Conference	Manama, Bahrain	www.me-cat.biz
11-12	International Gas Cooperation Summit	Cape Town, South Africa	www.igcs-sa.com
11-13	Mauritanides 2018	Nouakchott, Mauritania	www.mauritanidesmr.com
January 2019			
23-24	6th Maximising Propylene Yields	Barcelona, Spain	www.wplgroup.com
February 2019			
11-13	Egypt Petroleum Show 2019 (EGYPS)	Cairo, Egypt	www.egyps.com
March 2019			
26-27	Power & Electricity World 2019	Johannesburg, South Africa	www.terrapinn.com

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