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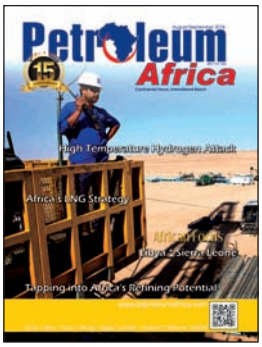
Contents

Source: ENI

Source: Unique Group

DEPARTMENTS

ON THE COVER



Libya's As Sarah field

Source: Wintershall

Moving On

Global Gravity has appointed **Tom Rasmussen** Sales and Operation Manager, Middle East as the company looks to grow the regional business. Rasmussen has considerable industry experience in the MENA region, holding positions with **GE**, **Dril-Quip** and **Peak Well Systems** over the last two decades.


Bajabulile Swazi


Mateus Magala


Kapil Kapoor

The AfDB made some senior management appointments recently. The African lending institution named **Bajabulile Swazi Tshabalala** as VP for Finance and CFO. Dr. **Mateus Magala** was named VP for Corporate Services and Human Resources, and **The AfDB** made some senior management appointments recently. The African lending institution named **Bajabulile Swazi Tshabalala** as VP for Finance and CFO. Dr. **Mateus Magala** was named VP for Corporate Services and Human Resources, and **Dr. Kapil Kapoor** as director general, Southern Africa Regional Development and Business Delivery Office. **Kapil Kapoor** as director general, Southern Africa Regional Development and Business Delivery Office.

Ben Clube, executive director of **FAR Ltd**., has resigned from the board and from the company. Following a review of the board composition, FAR has decided that the independence of the board is best served by the MD being the only executive on the board.

Unique Group has named **Vishvas Chauhan** to head its new service line in South Africa. Chauhan brings with him 15 years of experience in the oil and gas industry with a focus on offshore and onshore gas requirements.

Sonardyne International Ltd. appointed **Stephen Auld** as its new global business manager for Subsea Asset Monitoring. Auld joined Sonardyne in June 2017 and takes over the role from **Stephen Fasham**, who has been promoted to a newly created role within the business focusing on growth and investment opportunities. **BiSN** made two key appointments recently to support its expansion plans. **Tom Box** will join the company as VP, while **Gary McWilliam** has taken on the role of applications manager for the Eastern Hemisphere.

Imad Benkoura took up his duties as the new chairman of the **Brega Petroleum Marketing Co**. management committee. He succeeds Dr. **Fouad Belrhaim.** Benkoura was previously chairman at **Zawiya Oil Refining Co**. and served as **NOC**'s general manager of marine transportation. Other new members of the committee are **Kheralla Saleh Abdelsalam, Mohamed Rahil Imraja,** Dr. **Massoud Omar,** and **Ibrahim Ahmed Salah Boubridaa.**

Aminex has named **Keith Phair** as interim chairman until the company completes its selection process to find a new chairman to replace **Brian Hall**, who stepped down effective August 31.

Kreuz Subsea appointed **Thomas Liew** as the group's CFO. Liew has more than 20 years' experience in senior financial positions, his previous roles include VP Finance at **ALSTOM Grid** where he was CFO for ALSTOM's EPC business in the Asia Pacific region.

HydraWell has appointed decommissioning expert **Tom Leeson** to the newly created role of chief commercial officer based in Aberdeen, UK. Leeson has close to 30 years' experience in the oil industry, working for both operators and oil services companies in the North Sea, Middle East, SE Asia and Brazil.


Mark Cullens

OPITO appointed **Mark Cullens** to the new role of director of strategic development. Cullens joins OPITO from **Petrofac Training Services** where he was director of business development Eastern Hemisphere.

N-Sea has appointed **Hans Van Peet** as the company's survey authority. Van Peet, who joins the organization from **Heerema Marine Contractors**, brings more than 30 years' of specialist experience in survey, positioning and ROV intervention to the role.

President and CEO **GE Africa**, **Jay Ireland**, will retire effective September 30, after 38 years of service. **Farid Fezoua**, president & CEO, **GE Healthcare Africa** has been named his succesor, in addition to his role in GE Healthcare. This appointment is effective October I.

On July 20 **Raymond Kargbo** handed over the mantle of leadership of the **Petroleum Directorate of Sierra Leone** to **Timothy Kabba**. **Sparrows Group** has created a director-level role, naming **John Grover** to the newly appointed position. Grover brings more than 25 years' of business development experience to the company. **Helge Lund** and **Pamela Daley** have joined the board of **BP plc** as non-executive directors.


Aidan Heavey

Founder of **Tullow Oil**, **Aidan Heavey**, is stepping down as chairman of the group after 32 years with the Irish firm. Heavey became chairman last year after more than three decades as chief executive.

Kofi Annan, former **UN** secretary-general and Nobel Peace laureate, has died at the age of 80. Annan passed after a brief illness. Annan climbed the ranks to hold the top spot of Secretary General for two terms from 1997 to 2006. *See Message from the Editor for more coverage on the life and legend of Kofi Annan.*


Ewen MacLean

Proserv appointed **Ewen MacLean** to the position of VP Strategic Planning and Marketing. MacLean previously spent nine years as a director of **Calash**.

Ghanaian President **Nana Akufo-Addo** fired his energy minister, **Boakye Agyarko**, a statement from the presidency said, giving no official reason. Minister of Lands and Natural Resources, **John Peter Amew**, will fill the role until a new appointment is made.

Engen Namibia announced the appointment of **Christian Li** as its new managing director in the country. Li started working in the petroleum industry at **Total** in Mauritius as consumer sales manager, before moving to **Chevron**.

Neptune Energy Group made a number of appointments the first being **Pete Jones** as UK managing director. Most recently Jones held the position of managing director at **Taqa Europe**. **Bruce Webb** will take up the global position of VP, Operations, later this month. Webb most recently worked with **DNO**, where he held the position of COO, based in Dubai. **Andrea Guerra** joins as corporate VP, Reservoir Engineering. Guerra joins from **Apache** where she started her career. **Gro Gunleiksrud Haatvedt** will become VP and group head of Exploration. She has previously held the position of senior VP of **Equinor**. **Amanda Chilcott** joins as Group human resources director. Chilcott has more than 20 years' of international HR experience gained at **BP**, **Aggreko Plc** and **Ford**.

Project Development International (PDi) Ltd. appointed **Michael O'Sullivan** as its new CEO and board member. O'Sullivan brings over 25 years' of subsea oil and gas experience to PDI.

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.

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MESSAGE
FROM THE EDITOR

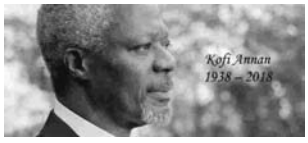
The world lost a very special man over the period – Kofi Annan. While Annan was a former UN secretary-general and a Nobel laureate, he was much more than that. He was a proud Ghanaian son, a household name, a great champion for human rights the world over, and an envoy for advancing the African agenda.

Annan worked tirelessly over the years to make this world a better place. His efforts were noted in the hundreds of messages pouring in over the days following his passing. Ghanaian President Nana Akufo-Addo ordered his country's flags to fly at half-mast for a week in respect to the man who held a special place in his heart for his home country, and continent.

There are so many messages from around the world in tribute and in mourning, it is hard to choose only a few to share. I have included below a handful I feel reflect global sentiment about the man in the best possible way.

Jens Stoltenberg, NATO Secretary General: "Saddened to hear that Kofi Annan has passed away. His warmth should never be mistaken for weakness. Annan showed that one can be a great humanitarian and a strong leader at the same time. The UN and the world have lost one of their giants."

Zeid Raad Al Hussein, UN High Commissioner for Human Rights: "I am grief-stricken over the death of Kofi Annan. Kofi was the epitome of human decency and grace. In a world now filled with leaders who are anything but that, the world's loss becomes even more painful. He was a friend to thousands and a leader of millions."



Musalia Mudavadi, former vice president and former prime minister of Kenya: "It is to Kofi that Kenya owes its current democratic environment born out of his mediation that halted the 2007/2008 political violence … What struck me, and was attractive, was that the sensation of a peacemaker stuck on him like his skin."

These tributes, and hundreds of others like them, reflect how truly respected Mr. Annan was. Joining the UN in the 1960s, Annan spent the better part of his life with the organization in one capacity or another. His tenure culminated with the UN appointing him secretary-general in 1997, becoming the first sub-Saharan African to lead the world body. Annan served in the position until 2006, having been elected for a second term. His efforts to achieve world peace were recognized in 2001 when he was jointly awarded the Nobel Peace Prize along with the UN.

In 2007 he founded the Kofi Annan Foundation, which seeks to mobilize political will to overcome threats to peace, development and human rights. He also served as chairman of The Elders, an international organization of distinguished peace and human rights activists founded by Nelson Mandela in 2007, whom Annan had worked closely with over the years. In 2012 the UN appointed him Arab League Joint Special Representative for Syria, though he soon resigned. In 2016 the UN once again called upon Annan, appointing him to lead a UN commission to investigate the Rohingya refugee crisis in Myanmar.

Summing up Annan's quite distinguished career in just a few paragraphs does not do him justice. As former US president Barack Obama stated: "Kofi Annan was a diplomat and humanitarian who embodied the mission of the United Nations like few others. His integrity, persistence, optimism, and sense of our common humanity always informed his outreach to the community of nations."

You may now rest in peace dear Kofi, your legacy will live through the foundation you established, and more importantly, through the lives that you touched. The world will miss you.

Dianne Sutherland
Chief Editor

Shell's Phase 9B to Start in October

According to Petroleum Minister Tarek El Molla, Egypt will see a boost in its natural gas production totals when Shell's two deep-water wells from its West Nile Delta Phase 9B come online. Production is expected to begin in October.

In a statement El Molla said the whole project, which includes several other wells being drilled and linked back to production facilities, was set for completion in H2 2019 and that its output aims to reach 400 Mmcf/d.

Funding Allows COPL to Progress Nigeria Production

Canadian Overseas Petroleum's (COPL) affiliates received a minimum of $30 million and up to $50 million in funding which will allow it to progress exploration & production on its assets in Nigeria (*see Market Movers for more details on the arrangement*).

The Facility will provide funding for all production related expenditures following the drilling and testing of the initial production well to be drilled by Essar Nigeria on its 100% contracted interest in OPL 226, which is located in shallow to mid-water offshore Nigeria.

The project as planned involves the drilling and completion of a horizontal oil production well offsetting the 2001 NOA#1 oil discovery well and the drilling and completion of two to three additional high angle oil production wells in the adjacent NOA East fault block from a common wellhead platform, and placing these wells on production in an approved early production scheme. Essar Nigeria has prepared a work program for this initial campaign on OPL 226 in the form of a field development plan (FDP) for submission to NNPC. The company expects the presentation of the FDP to NNPC to occur in the near term.

ShoreCan is also in late stage discussions with the service provider, which involve the provision of drilling services, the supply of a mobile production unit and a storage vessel for a deferred fee.

Libya's Attahadi Halts Production

According to reports in Libya, power cuts have led to a stoppage of production at the Attahadi gas field, which in turn could lead to more power outages. The field is located in eastern Libya and is operated by Sirte Oil. The gas field powers electricity production plants north of Benghazi and at the oil-exporting port of Zueitina.

Rabii Khalifa, spokesman for the electricity and renewable energy authority at Libya's eastern parallel government, was cited in a *Reuters* report as saying that he did not know why the gas field had halted production but said there was currently a power deficit of 300 MW in the eastern part of the country that could rise to 500 MW if the gas field remains idle.

Egypt to Offer Red Sea and Mediterranean Acreage

More Egyptian acreage will be put up for tender according to the country's Minister of Petroleum, Tarek El Molla. The Ministry is planning to increase investment opportunities for oil and gas exploration by offering new tenders for acreage in the Red Sea and West Mediterranean areas.

El Molla stated that the Ministry will offer an international exploration tender for the Red Sea depending on the results of an upcoming seismic survey project slated to take place in December, a report in the *Egypt Independent* said.

The seismic survey, being conducted by WesternGeco Schlumberger, aims at identifying non-exploratory oil and gas areas and finding new geological layers in current production areas at the Gulf of Suez.

Aqualis Offshore Wins Egina Job

Aqualis Offshore has been awarded a contract for the "keeping role" for the installation of the *Egina FPSO* offshore Nigeria. While the field is operated by Total, the contract came from the EPCIC contractor Samsung Heavy Industries (SHI).

Source: Samsung

Egina FPSO

The new build *Egina FPSO* was towed from South Korea and arrived in Nigeria in late January for final integration of topside modules built in Lagos.

Once the FPSO is located at the Egina field, Aqualis Offshore will manage the position keeping procedure and provide position keeping masters offshore while it is being connected to the pre-installed mooring spread. In total, the *Egina FPSO* will be spread moored on 16 mooring lines (4x4).

Sonangol Signs MoU with Helicopter Firms

Sonangol, Angola's state-run oil and gas firm, signed an agreement with two helicopter transport firms, Heliconia and Canada's CHC, to restructure its aviation subsidiary SonAir. The MoU signed by Sonangol will have two phases – the first to conduct an internal audit and evaluation of SonAir's structure and services, according to a statement from the state-run firm.

Source: SonAir

"This may, after analysis, dictate the formation of a consortium between those foreign companies and the Sonangol aviation company, mainly aimed at relaunching its activities," the statement said.

The agreement is part of Sonangol's bid to find solutions for offering transport services to oil companies operating in the country. International firms previously used SonAir's helicopters to fly personnel to offshore platforms. A flight between Luanda and Houston which was operated by SonAir has also been cancelled.

Buhari Approves Flaring Regulations

Nigeria's president, Muhammadu Buhari, approved the Flare Gas (Prevention of Waste and Pollution) Regulations 2018. The regulations are to be used for the implementation of the National Gas Flare Commercialization Program (NGFCP), according to a *THISDAY* report.

The NGFCP Program Manager, Justice Derefaka, disclosed that Nigeria loses approximately $1 billion of revenue to gas flaring because it does not have the capacity to capture and commercialize flared gas in the country.

"We are pleased to inform you that His Excellency, Muhammadu Buhari, the President of the Federal Republic of Nigeria has approved the Flare Gas (Prevention of Waste and Pollution) Regulations 2018 as the regulatory instrument that will underpin the implementation of the NGFCP," said Derefaka in an emailed statement.

He further explained, "We are also pleased to mention that we have completed the design of the key program transactional, commercial framework and documentation. We therefore

expect to announce the first bid round for the flare gas to the public within Q3, 2018."

According to the numbers, approximately 700 Mmcf/d of gas is flared in Nigeria. If that flared gas was properly exploited it could create 300,000 jobs, produce 600,000 metric tons of LPG per annum, as well as generate up to 2,500 MW of electricity from new and existing power stations.

ENI Gets New East Delta Concession

ENI signed an agreement for a new concession in Egypt. The concession, the Nour, is located offshore in the East Nile Delta Basin. The concession is located in water depths ranging from 50 to 400 meters, covering a total area of 739 sq km.

Source: ENI

According to a statement released by the Italian firm, it plans to proceed with the drilling of an exploration well in H2 2018.

Nour is operated by ENI through its subsidiary IEOC. In the concession, which is in participation with EGAS, the company holds an 85% stake in partnership with Tharwa Petroleum Company, which holds a 15% stake.

Additionally, the Italian firm was also issued a new concession agreement and an extension to another concession agreement. The Nile Delta Concession Agreement was approved by Egyptian authorities and allows for a 10-year extension of ENI's Abu Madi West Development Lease, where the Nooros field is located. It also allows for further exploration activities within the El Qar'a Exploration Lease. Both the Abu Madi West and the El Qar'a make up the Greater Nooros Area.

ENI also saw a five-year extension on the Ras Qattara Concession Agreement and relevant Development Lease. Following this extension, a new drilling campaign in the Zarif and Faras fields will unlock remaining hydrocarbon reserves and allow further exploration activities within the Western Desert basin.

The Great Nooros asset area's lease extension strengthens ENI's gas portfolio while confirming the success of its strategy of near field exploration that has revitalized production in the Nile Delta area.

Libya Exceeds 1 Million BPD

Oil production surged in Libya over the last week of August to one million barrels a day, the *Libya Observer* reported. This is the highest level of production achieved since the beginning of this year.

This level of production was achieved thanks to the revival of production at the Sharara oil field, but also on the fields Amal and As-Sarah. The Sharara field alone can produce more than 300,000 bpd.

The country has been seeing its production yo-yo since 2011 due to clashes around production facilities. The country plans to exceed two million barrels by next year but is still struggling to reach the pre-2011 level of more than 1.4 million bpd.

Balteem Production Expected by mid-2019

The Belayim Petroleum Company, or Petrobel, plans to produce an estimated 500 Mmcf/d of natural gas from its South West Balteem project in Egypt. According to the company it should reach that level of production by mid-2019.

In an effort to reach its target, the company expects to drill six wells and build an offshore platform for the project. A subsea pipeline will also be built to transport the production to onshore processing facilities.

The gas will continue its journey to Abu Madi through another onshore pipeline that the company is planning to build. The two pipelines will cost $380 million.

Shell Recovers Spilled Crude

Shell's subsidiary in Nigeria, Shell Petroleum Development Company (SPDC), revealed that it has recovered over 95% of the crude leaked in two oil spills in 2018.

While crude was recovered from the two spills, SPDC also said that its Trans Ramos pipeline that carries crude to the coast for export remains closed. The pipeline, which carries some Forcados crude oil to the export terminal, was closed in about four months ago following two leaks and has yet to see flows.

The Forcados grade, along with Bonny Light and Qua Iboe, is one of Nigeria's three largest crude streams.

Although Shell has not specified the amount of crude affected by the closure, the pipeline has a capacity of 100,000 bpd.

Sonatrach Joins Zero Flaring Initiative

Sonatrach, Algeria's state-run oil and gas firm, has joined the 'Zero Routine Flaring by 2030' initiative launched by World Bank in 2015 to reduce systematic gas flaring by 2030.

Sonatrach joins 35 other oil and gas companies, which include its fellow North African NOCs ETAP, EGPC, and ONHYM. There are also 27 governments, including California, and 15 institutions that are part of the initiative.

The World Bank said that it is happy to welcome such an important producer within the initiative given the fact that Sonatrach has been "working to identify and implement solutions to reduce gas flaring since 1976."

In 2017, 140.6 Bcm of gas was flared around the world; 7.1 billion less than the volume flared in the prior year, the initiative indicated last month according to a report by *Natural Gas World*. In addition, in 2017, Algeria was the fifth largest gas flarer in the world, behind Russia, Iraq, Iran, and the US.

Apache to Boost Egyptian Investment

US independent oil firm Apache reportedly revealed plans to increase investments in Egypt following a meeting between Minister of Petroleum Tarek El Molla and Apache CEO John Christmann. According to a report from Xinhua, Apache plans to boost investments to $1 billion.

The company's intention to increase exploration is aimed at supporting Egypt's reserves while helping to increase its oil and gas production.

In a statement, the Ministry said: "Christmann and El-Molla discussed means to expand Apache's exploration activities in Egypt, as well as the company's ongoing projects and future investment plans in the country."

The company is planning to form a partnership to prepare a five-year plan for oil exploration in the country. The Apache plan will outline the expected investments and production using advanced technologies in the oil and gas industry, according to Xinhua.

Christmann also lauded the economic progress made by the Egyptian government in the oil field over the past three years through investment-friendly policies.

Last month, Apache reached a deal with Egypt's Ministry of Petroleum to invest in exploration and production of oil and gas in the country's Western Desert where the company's main production flows take place.

ExxonMobil Joins Azinam Offshore Namibia

ExxonMobil expanded its position in Africa with the purchase of a stake offshore Namibia. Azinam and the US supermajor entered into an agreement that has ExxonMobil acquiring a 30% interest in PEL 44.

Azinam will retain a 12.5% interest, with Maurel and Prom, the license operator, retaining its current 42.5% equity interest and Namibian partners Namcor, Livingstone Mining, and Frontier Minerals also retaining their carried interests of 8%, 4% and 3% respectively.

PEL 44 is located in the Walvis Basin and covers an area of 5,722 sq km, in water depths ranging from less than 300 meters to over 2,500 meters. In 2016, Azinam acquired a 2,000 sq km 3D seismic survey. Following interpretation, Azinam acquired an additional 1,160 sq km of new data. Processing of this data is ongoing.

Savannah Knocks Out its 4th Agadem Discovery

Savannah Petroleum made its fourth consecutive discovery with the drilling of the Eridal-1 exploration well in Niger. The well was drilled by the GW 215 Rig to a total measured depth of 2,542 meters, and encountered the main objective targets at, or near, their prognosed depths. The Eridal-1 is located on the company's R3 portion of the R3/R4 PSC Area in the Agadem Rift Basin.

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 13.6 meter of net oil-bearing reservoir sandstones in the E1 reservoir unit within the primary Eocene Sokor Alternances objective.

Wireline logs indicate the reservoir properties to be of 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 from the E1 reservoir unit have been taken and returned to surface using wireline testing equipment.

In addition, two production tests are expected to be performed on at least two of Savannah's discovery wells as a precursor to its plans to implement Niger Early Production Scheme (EPS).

Following the successful results of the four exploration wells drilled to date on the R3 East area, Savannah has elected to exercise the second of the six individual options it has under contract with Great Wall Drilling Company Niger. The GW 215 rig will be mobilized to the Zomo-1 well site.

Cameroon's IM-6 Disappoints

Bowleven reported that the drilling of the IM-6 appraisal well is complete. The well is located on the Etinde Block in Cameroon where New Age Cameroon is the operator.

The primary objective of the well, to delineate the wet gas/water contact location within the intra-Isongo 410 sand reservoir, has been achieved. The JV partners believe that sufficient pressure measurements appear to have been taken, which alongside the well log data following further analysis and reservoir modelling, will allow a revised estimate of the condensate bearing wet gas/water reservoir volume in the 410 intra-Isongo sandstone gas condensate discovery. The Etinde field has discovered wet gas in place of c 0.9-1.1 Tcf. The IM-6 well was targeting an incremental 0.7 Tcf of wet gas in place from the 410 horizon.

While there were several gas shows and indications of condensate/light oil when drilling the 410 sand package, a preliminary assessment of well log data and reservoir fluid samples taken indicate that the 410 sand package is largely water saturated at the IM-6 location. Following preliminary analysis of the well data, the decision has been made not to test the sand packages drilled at the IM-6 location. The well is currently being made ready to be plugged and abandoned.

TEN Peak Production Expected in 2020

Ghana should see full production from the offshore TEN development operated by Tullow Oil by 2020. According to media reports citing Tullow's in-country manager, production should hit 80,000 bpd in the next two years. Currently the TEN development produces at a rate of around 56,000 bpd.

The development should have been well on its way to hitting peak production, but work was delayed due to a maritime dispute between Ghana and Cote d'Ivoire. Since the dispute was settled one of the 11 planned development wells has been drilled.

South Sudan Brings Production Back Online

The government of South Sudan's intensive preparations for the resumption of oil production will see the country boost its production totals. According to a release by the government, preparations culminated on August 25 in Toma South, with the relaunch of production from blocks 1, 2 and 4.

The resumption of oil production at these licenses marks a historic collaboration between South Sudan and Sudan and will be a key moment in South Sudan's economic progress.

The Ministry of Petroleum of South Sudan and the GPOC consortium (CNPC, Petronas, ONGC, and Nilepet), with the support of 2B Operating Company (2B OPCO) of Sudan and technical teams from the Ministry of Petroleum and Gas of Sudan have been working on the ground for the past month to rehabilitate facilities and ensure security.

With this announcement, blocks 1, 2 and 4 are now fully operational, starting with 45,000 bpd of production at Toma South. This will be followed by El Nar, El Toor, Manga and Unity oilfields, while the Ministries work to uncap Sudd Petroleum Operating Company's block 5A and resume production by the end of 2018. The Ministry of Petroleum of South Sudan and the Ministry of Petroleum and Gas of Sudan will be working to resolve remaining technical issues on block 5A in the coming months.

BW Adolo Prepares for Production

BW Offshore Gabon and Panoro Energy saw the arrival of the FPSO that will be positioned on the Dussafu Marin permit's Tortue field offshore Gabon. The vessel left Singapore in early July, making its way to Gabon.

Source: BW Offshore

BW Adolo

The *BW Adolo* reached Gabonese waters and is now undergoing preparations for installation and production start-up. The hooking up of wells to the FPSO will complete Phase One of the Tortue project.

Operator BW Energy anticipates first oil from Phase 1 at Tortue later this year, at initial production rates in the range of 10,000-15,000 bpd. Planning for Phase 2 at Tortue is also underway and will likely entail further production wells in the Gamba and Dentale D6 reservoirs.The *BW Adolo* has an oil storage capacity of 1,350,000 barrels and a production capacity of 40,000 bpd.

Rig Tendering Process Complete for Chikumbi-1 Well

Aminex completed the tendering process for a rig to drill the Chikumbi-1 (CH-1) well on the Ruvuma PSA in Tanzania. According to the company it received numerous bids, which are currently being evaluated on their respective technical and commercial merits.

The CH-1 well is located updip from both the Ntorya-1 discovery well, which tested at rates of up to 20 Mmcf/d with 139 barrels of condensate, and from the Ntorya-2 well which tested at a stabilized rate of approximately 17 Mmcf/d.

The well is expected to delineate the Ntorya gas field in a significantly thicker section of the Cretaceous reservoir system and is also being planned to evaluate a potential deeper exploration target in the Jurassic formation. If successful, CH-1 is expected to be produced into the existing Madimba Gas Processing Plant and ultimately integrated into a full field development program. The company also reported that the pressure at the Kiliwani North-1 well has sufficiently built up and it continues to work with all parties to stimulate the production as soon as possible.

Gambia Approves Petronas Farm-In

The government of Gambia approved the assignment by FAR Gambia Ltd of a 40% interest in petroleum licenses for offshore Blocks A2 and A5 to a subsidiary of Malaysia's state-run firm Petronas.

Under the terms of the farm-out agreement executed, Petronas will fund 80% of the exploration well costs of the Samo-1 well up to a maximum total gross cost of $45 million. In addition to the well costs, the Malaysian firm will pay FAR cash consideration of $6 million plus 80% of non-well back costs. The proceeds are subject to reconciliation and were estimated to be A$19 million at June 30, 2018. FAR will retain 40% of its original 80% interest.

FAR has secured a contract with a subsidiary of Stena Drilling who will provide and operate the *Stena DrillMAX* drillship to drill the Samo-1 well in late 2018. The company has identified and mapped an additional prospect, the Bambo prospect, and continues to interpret the seismic data in this highly prospective area with a view to revealing additional prospects and leads for future drilling

ADX Expects Dougga Spud in H1 2019

ADX Energy updated the progress made in relation to the independent evaluation of the resource potential and viability of the Dougga Gas Condensate Project offshore Tunisia. The company is also making progress on plans to drill the Dougga Sud appraisal well and the funding for its appraisal program and permit renewal terms.

On July 16 ADX revealed the assessment of the Contingent Resources at Dougga as well as the Prospective Resources of the Dougga South West prospect determined in the Independent Evaluation Report prepared by ERC Equipoise (ERCE). In addition to the Dougga resource assessments previously announced, ERCE has assessed that chance of the development of Dougga to be 70%.

Noble Drilling Services Inc has advised that the *Noble Globe Trotter II* drilling rig is now scheduled to be available to spud the Dougga Sud appraisal well in April 2019. Noble have extended the drilling contract on the same commercial terms as agreed previously. Well planning and approvals for drilling and testing are ongoing. The delay provides additional time for ADX to secure funding and secure long lead items for the Dougga Sud well.

Data room due diligence and funding discussions are ongoing with multiple parties with a view to securing either a farm-out, vendor finance or a combination of both. The recently completed ERCE report, in combination with the Technip FMC Concept Study, provides potential funding partners with independent confirmation of the potential viability of the Dougga Gas Condensate Project by highly respected third parties. ADX continues to work towards the finalization of funding for Dougga at an asset level and the introduction of a capable partner to the project that can not only fund the appraisal well but, upon appraisal success, also enable the commercialization of Dougga.

Upland Scores Tunisian Acreage

Upland Resources' application to exclusively explore and appraise the Saouf Permit onshore Tunisia have been accepted by Tunisia's Hydrocarbon Consultative Committee (HCC). The Saouf Permit covers an area of 4,004 sq km and Upland will act as the operator, holding a majority stake with ETAP as a JV partner with back-in rights.

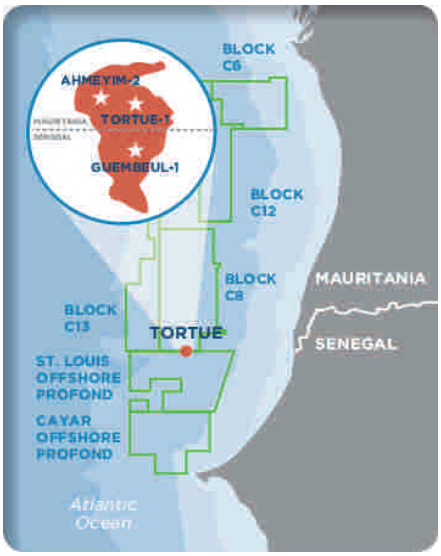
The company said that based on its technical work on the acreage it believes there is potential for very substantial quantities of recoverable gas within the permit area. Upland's exploration plans are also partly de-risked by an existing gas discovery in the area made 50 years ago, before the advent of local gas markets.

The desirability of the acreage is further enhanced by the existing gas pipelines that cross the permit area; these currently have spare capacity and provide access to attractive existing local gas markets.

Upland has offered a work program that includes an initial new 2D seismic survey, which the company is fully funded to undertake, followed by drilling one or more new wells. Drilling of any wells is conditional on the results of the seismic survey.

Mauritania/Senegal Development to See FID

BP and its partner offshore Mauritania and Senegal, Kosmos Energy, could see progress on the planned Tortue development. In its latest conference call Bob Dudley, group managing director, said BP was headed toward making a decision on the FID.



Source: Kosmos Energy

Greater Tortue

Dudley said in response to a question, "The first one on the Tortue, the phase one, we've just been meeting with the Mauritania and Senegal governments on that, we're heading towards an FID in Q4 this year."

The Tortue lies on the maritime border between Mauritania and Senegal, at a depth of 2,850 meters. BP and its partners are developing the gas field with a 30-year production potential. The Tortue field has an estimated 15 Tcf of gas and is forecast to be a significant source of domestic energy and revenue.

Total Sells Stake in Gabon Field

Total Gabon has sold its stake in the Rabi-Kounga field. The company held a 32.9% stake in the field that is located onshore in the southern region of Gabon.

According to reports, the stake was purchased by Assala Upstream Gabon for an estimated $100 million. The disposal of the stake is part of Total's plans to simplify its portfolio.

Genel's Somaliland & Morocco Seismic Program in Full Swing

Onshore Somaliland, the processing of around 3,500 km of raw 2D seismic data on the SL-10B/13 (Genel 75% working interest, operator) and Odewayne (Genel 50% working interest, operator) is almost complete, with analysis and interpretation underway.

Genel said that evidence of a thick Mesozoic rift basin continues to provide encouragement, and the first analysis of this highly-prospective region in over 25 years is expected to complete in Q4. A prospect inventory will then be developed, guiding the optimal strategy to maximize future value, with the potential to spud a well around the end of 2019.

In Morocco, the 3D seismic campaign on the Sidi Moussa license, where the company holds a 75% operated interest, has begun. Seismic acquisition is expected to be completed in the middle of Q4 2018. Fast-track processing will begin ahead of the completion of this acquisition, as Genel de-risks the license and assesses future activity.

Guinea-Bissau Looks to Senegal for Joint Exploration

Guinea-Bissau is negotiating with Senegal for a new agreement on joint exploitation of petroleum resources. A set of proposals were presented in the third talks between the countries, according to the head of Guinea Bissau's delegation.

Apolinário de Carvalho, a high-level Foreign Ministry official and current ambassador of Guinea-Bissau in Brussels, stated that the Dakar talks had "gone well" and that the Guinea-Bissauan side had "explained to the Senegalese side that the historic mistake" of the division agreed in 1993 "has to be corrected."

That decision allocated Senegal 85% and Guinea-Bissau 15% of revenue resulting from the eventual exploitation of hydrocarbons in the common area, or the AGC.

"We want a new agreement that reflects the interests of both countries," de Carvalho said, cited by Lusa news agency. Guinea-Bissau "is nowadays better prepared" than in the past to defend its viewpoint, he stressed.

The delegations will meet again in Guinea Bissau, to finish the draft revision of the new resource sharing agreement for oil, gas and fisheries, which will be signed later by the leaders of the two nations.

Ghana Free Zones Look to Attract New Companies

The Ghana Free Zones Authority is initiating plans to establish a separate unit to look at ways to attract oil and gas companies into the Free Zones concept, said executive secretary, Michael Baafi, at the investment week celebrations of the Authority.

About 18 companies have been licensed to operate as free zone industries since the beginning of 2018. Baafi said 201 companies have been set up in the country with 181 being active. The companies set up have created employment for almost 30,000 people.

About 80 companies licensed to operate as free zones companies are inactive and unfit to carry out business as beneficiaries of the Free Zones Act, the Ghana Free Zones Authority has said. To this end, the Board of the Authority has approved various sanctions for such companies before the end of the year.

According to Baafi, these companies have flouted the rules for the concept and will need to apply for a new license after the sanctions.

Mozambique's Block 5 Contracts Finalized

The Mozambican government finalized contracts for access to Offshore Block 5 with a number of heavy hitting international oil firms. The award and the finalization of the contracts follows four years of negotiations and delays that threatened to derail the projects with more than one of the firms bowing out over the four-year period.

"The contracts give the concessionaires exclusive rights to conduct oil operations with the aim to produce oil from the natural resources deposits underneath the areas," spokeswoman Ana Comoana said following a cabinet meeting.

Statoil, ENI, ExxonMobil, Delonex Energy, Sasol and the country's NOC ENH were awarded the exploration rights in the area of the Zambezi Basin in 2015. Statoil (now Equinor), quit negotiations in January while Delonex later withdrew over the deadlock with government, leaving the other firms with the block award.

Gabon Sees Substantial Decline in Q1 Oil Production

Gabon saw a drop in its Q1 production according to the Ministry of the Economy and Environment. The country's production fell by 10.7% or 17.41 million barrels for the period.

The Ministry said this was due to a number of factors including the natural decline of mature fields, the maintaining of OPEC quotas at -9,000 barrels per day, as well as maintenance shutdowns on various fields.

While production dropped, exports were on the rise. "However, exports grew by 3.2% to 2.39 million metric tons," the Ministry of Economy noted in its conjuncture. The main destinations for Gabonese crude remain Asia and the Pacific, accounting for 82%.

Savannah and Niger Sign MoU

Savannah Petroleum signed a legally binding MoU with the government of Niger that reaffirms both parties' commitment to the realization of the proposed early production scheme (EPS) from its recent discoveries.

Source: Savannah Petroleum

Eridal-1 well site

The MoU further binds both parties to work together towards the realization of the EPS and contains specific provisions relating to the actions each party undertakes to conduct as well as setting out the key timelines associated with the project.

The EPS is intended to be domestic focused, with oil produced from Savannah Niger's R3 area discoveries expected to be sold to the Société de Raffinage de Zinder (SORAZ) refinery, which is connected to the ARB via the third party owned 463-km Agadem-Zinder crude oil transportation pipeline.

Tanzanian Gas Update

Tanzanian natural gas producers in the Mnazi Bay field reported that at the end of July, production increased to an average of 90 Mmcf/d and has received payment for some of that production.

Mnazi Bay gas off-takers, TPDC, the state-owned petroleum company and the public electricity producer, Tanesco receive great benefit as demand has not been completely met by previous production totals.

The partners in Mnazi Bay are Maurel & Prom (48.06%), Wentworth (31.94%) and TPDC (20%). Unfortunately, not all gas producers are seeing steady flows. Aminex is seeing technical problems with its Kiliwani North field. Meanwhile Orca, producer at the Songo Songo field, has recently seen its participation blocked by the government.

Polarcus Wins West Africa Award

Polarcus received an award for a 3D marine seismic acquisition project in West Africa. The project duration is approximately three months and is expected to commence in September 2018. Following this award, the Polarcus fleet is 100% booked for Q3 2018 and 85% booked for Q4 2018.

Sound Moving Rig to Morocco's TE-9 Well Site

The rig being used to drill Sound Energy's upcoming well in Morocco, the TE-9 well, has been mobilized. Saipem's National 110 IE land drilling rig is on its way to the well site location, which is currently under construction on the Tendrara license.

The rig, which was used for all the company's previous wells in Morocco, is expected to be utilized for TE-9, TE-10 and TE-11.

Sound has invited investors to observe live operations through the its webcam, available on its website.

All Eyes on Namibia as Cormorant Well Spuds

All eyes are on Namibia as Tullow Oil, Africa's discovery magnet, spud the Cormorant-1 well on PEL 37 offshore the country. The Cormorant-1 is being drilled by the *Ocean Rig Poseidon* in 545 meters of water, to a total depth of 3,830 meters subsea.

The well will test the oil potential of a mid-Cretaceous marine turbidite 'fan' sandstone system. Drilling and evaluation of the well is expected to take about 34 days.

The industry is waiting to see if the luck and skill that Tullow has demonstrated in Kenya, Uganda, Ghana and elsewhere in Africa, transfers to its operations in Namibia. In 2013, the Wingat-1 and Murombe-1 wells, directly south of PEL 37, confirmed high quality mature oil-prone source rocks in the Walvis Basin. The Cormorant Prospect, mapped using high-quality 3D seismic data, is one of four submarine fan prospects identified so far in the block and interpreted to be charged by the same source rocks.

The Cormorant Prospect has gross best estimate prospective recoverable resource potential of 124 million barrels of oil and, if successful, would open a fairway of similar fans, potentially creating a substantial spread of resources across PEL 37. The total estimated oil potential of the four main prospects mapped so far in PEL 37 is 915 million barrels of oil. Additional potential exists in large leads that have also been identified.

Pancontinental Oil & Gas holds two thirds of Pancontinental Namibia, which holds a 30% participating interest in PEL 37, giving it a 20% effective interest in PEL 37. Now that drilling has commenced, Pancontinental will receive cash of $5.5 million from Africa Energy Corp.

Baytown Refinery to Expand

ExxonMobil is said to be planning a major expansion to its Baytown petrochemical complex. The expansion, with a cost estimated at $1.9 billion, will include the addition of a two-unit plastics processing plant.

According to a tax abatement application, the US firm expects construction on the expansion to begin in mid-2021, with completion targeted for 2023.

Source: ExxonMobil

The proposed expansion would follow ExxonMobil's recent start-up of a multi-billion petrochemical plant at the Baytown complex which increased ethylene production by 1.5 million mtpa.

UAE Plans Pipeline for Ethiopia to Eritrea

The UAE plans to build a pipeline connecting Eritrea to Ethiopia. The pipeline will run from Eritrea's port city of Assab to Ethiopia's capital Addis Ababa.

Chinese firm Poly GCL began extracting crude oil on a test basis from reserves in Ethiopia's southeast in June and will need access through Eritrea to the coast in order to export it.

Ethiopian broadcaster Fana first reported the pipeline plan earlier following a meeting in Addis Ababa between Ethiopian Prime Minister Abiy Ahmed and Reem Al Hashimy, the UAE's minister of state for international cooperation.

The UAE played a behind-the-scenes role in helping Ethiopia and Eritrea end a two-decade state of war last month, Reuters reported this week.

Bonatti/Max Streicher JV Wins EUGAL Pipeline Job

GASCADE, a subsidiary of BASF and Gazprom, awarded the construction of six lots of the EUGAL gas pipeline to a joint venture (JV) made up of Bonatti and Max Streicher. The pipeline will be powered by the Nord Stream 2, the gas transport network that connects Siberia to Europe via the Baltic Sea.

The overall route of EUGAL is around 480 km long and will be able to transport a maximum of 55 Bcm/year of natural gas. It is estimated that the JV will start operations this year after necessary approvals are given.The completion of the double line sections will take place by the end of 2020.

The entire pipeline is divided into 14 lots: pipes have a diameter of 56 inches (1,420 mm) and a thickness of 23 mm.

Bonatti/Max Streicher will play a decisive role in the realization of the project with the execution of 6 lots (from 9 to 14) for a total length of about 292 km.The scope of the work awarded includes the construction of the southern part of EUGAL route, reaching the town of Deutschneudorf, on the border with the Czech Republic. The number nine and 10 sections of the pipeline will be built in double line.

ExxonMobil Signs Cooperation Agreement with China

ExxonMobil signed a cooperation framework agreement with the Guangdong Provincial People's government to advance discussions concerning the proposed construction of a chemical complex in the Huizhou Dayawan Petrochemical Industrial Park.

The multibillion-dollar project, which remains subject to a final investment decision, would include a 1.2 million-tons-per-year ethylene flexible feed steam cracker, two performance polyethylene lines and two differentiated performance polypropylene lines. ExxonMobil's decision to proceed with the project will be based on a number of factors, including receipt of permits and project competitiveness. Startup is planned for 2023.

The new complex would rely on advanced proprietary technologies in direct crude steam cracking and performance polymers manufacturing. It would support progress toward China's national petrochemical development priorities, which include self-sufficiency, diversified feedstock sources, rebalancing fuels versus chemicals and advancing new competitive technology. The framework agreement also confirms Guangdong Province's support in progressing the Huizhou LNG receiving terminal, in which ExxonMobil intends to participate, including supply of LNG.

Sonatrach Signs Supply Deals

Algeria's Sonatrach has signed supply deals with Spain and Italy for natural gas. The deals are a stop-gap measure while negotiations on new supply gas contracts with EU countries take place. Abdelmoumen Ould Kaddour, head of Sonatrach, said Algeria had signed a nine-year deal to supply Spain with 9 Bcm/y of gas, as well as a deal to supply Italy's ENI with 3 Bcm/y.

Agreements Signed for Gas Pipeline in East Africa

Tanzania and Uganda signed another agreement for the construction of a pipeline, this time for a natural gas pipeline. The multi-million dollar deal was signed at the end of a three-day Joint Permanent Commission Summit in Kampala, led by Tanzania's Foreign Minister Augustine Mahiga and Uganda's Minister for Energy Irene Muloni.

The signing of the natural gas pipeline agreement was the culmination of work that began during the first Tanzania-Uganda meeting held in April 2017, in which the two agreed on a number of memoranda and cooperation frameworks.

The pipeline comes just 15 months after Dar es Salaam and Kampala agreed to construct a crude oil pipeline from Hoima in Uganda, to Chongoleani in Tanga.

This will be the first trans-border gas pipeline in East Africa since the extraction of natural gas commenced in 2004 at the Songo Songo Island in Tanzania.

Nigeria and Kuwait to Lead Region in LNG

A new report by GlobalData states that Kuwait and Nigeria will contribute significantly to capacity growth in the LNG industry of the Middle East and Africa over the next four years. Nigeria is set to have the highest liquefaction capacity additions while Kuwait and Turkey will have the highest regasification capacity additions among all countries in the Middle East and Africa, according to GlobalData.

The company's report: *LNG Industry Outlook in Middle East and Africa to 2022* forecasts total liquefaction capacity in the Middle East and Africa to increase from 172.7 mtpa in 2017 to 234.0 mtpa in 2022 at an Average Annual Growth Rate (AAGR) of 6.1%. Similarly, the total regasification capacity is expected to grow from 3,007.6 Bcf in 2017 to 5,895.0 Bcf in 2022 at an AAGR of 13.5%.

Nigeria and Qatar are the major countries in the Middle East and Africa for LNG liquefaction terminals. Nigeria LNG, Ras Laffan III and Ras Laffan II in Qatar are the largest liquefaction terminals in the region. In the Middle East and Africa, 11 liquefaction terminals are expected to become operational between 2018 and 2022. The total planned liquefaction capacity in 2022 is expected to be 53.3 mtpa.

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Nigeria will lead the Middle East and Africa in terms of liquefaction capacity additions. The country will have the highest liquefaction capacity additions of 18.0 mtpa, increasing from 22 mtpa in 2017 to 40 mtpa by 2022 at an AAGR of 12%. The country is expected to spend $25.26 billion or more than 30% of the region's total capital expenditure on new build liquefaction terminals during the outlook period the GlobalData showed.

KBR Wins NLNG Train 7 FEED

KBR was awarded an LNG FEED contract by Nigeria LNG (NLNG) for further expansion of the Bonny Island LNG plant on Bonny Island. The FEED contract is for the plant's seventh train. Under the terms of the contract, KBR, as leader of the Bonny7 JV with partners TechnipFMC and JGC, will provide the basic design package and EPC bid for the expansion.

Source: NLNG

The Train 7 project covers the addition of a complete LNG train and an additional Common Liquefaction Unit (CLU) at the facility. The CLU draws feedstock from the six existing LNG trains delivered by KBR and partners from 1995 to 2007.

"We are excited to be a part of this significant project and to continue to grow and maintain a substantial presence in the EMEA region," said Jay Ibrahim, KBR President, Europe, Middle East and Africa and Asia-Pacific. "This award is indicative of KBR's strategic commitment to support NLNG, building on past success to deliver a high level of Nigerian content and helping to build a better Nigeria."

Saipem Wins FEED Work for Ugandan Refinery

Saipem was awarded a new contract for the FEED work for Uganda's planned refinery in Hoima. The award was made by the Albertine Graben Refinery Consortium (AGRC), a consortium composed of Baker Hughes General Electric (BHGE), YAATRA Africa, Lion Works Group and Saipem SpA.

The FEED contract follows on from a previous Project Framework Agreement signed in April 2018 between AGRC, the Ugandan Ministry of Energy and Mineral Development (MEMD) and Uganda National Oil Company (UNOC).

The refinery has a designed capacity of 60,000 bpd and will ensure a hub for refined products to the East African market. It will also aid in the promotion of local content as it will use Ugandan vendors and personnel beginning from the FEED phase.

According to Saipem, the contract sees an important positioning for it in East Africa, a geographical area where the company has no consolidated markets, which traditionally have been located in North Africa and central West Africa (i.e. Nigeria, the Congo and Angola).

Egyptian Firm to Begin Imports from Israel

Egyptian company Dolphinus Holdings plans to start importing gas from Israel for re-export in less than a year. According to reports out of the North African country, Dolphinus will begin imports in Q1 2019. Under agreements signed in February, the Egyptian firm will purchase $15 billion worth of gas over 10 years.

"Imports will start in small quantities first and will gradually increase to reach their climax in September 2019," one source told Reuters. The source gave no details on prices or quantities.

Partners in Israel's Tamar and Leviathan offshore gas fields said in February they would supply Dolphinus Holdings with around 64 Bcm of gas over a decade. Half will come from each field, and the proceeds will be split equally, they said. No date was set for the start of exports.

Nigerian Refinery Delays Refuted

According to news reports out of Nigeria, the country's super refinery could be delayed. Production from the Dangote refinery could be delayed until 2022, two years later than the target start date.

The 650,000 bpd refinery near Lagos is expected to transform Nigeria from a net importer to an exporter of refined products.

While reports have the refinery being delayed, Dangote Group Executive Director Devakumar Edwin, who oversees the project, described the suggestion that the refinery is unlikely to start production until 2022 as the product of "someone's wild imagination."

"Ninety-five percent of engineering has been completed, 90% of procurement has been completed," he said in a Reuters report. "We started civil works in July last year and we have scheduled 2-1/2 years for mechanical completion," he said, referring to the point where a plant is ready to be handed over for commissioning.

Major Petroleum Distribution Deals in Rwanda

Two major acquisitions involving European groups in the petroleum distribution sector in Rwanda are taking place according to local media sources. Reports from Rwanda say that Vivo Energy, which sells Shell's products in Africa, is finalizing the resumption of operations by Engen, the company that sells Malaysia's Petronas products to Africa.

This transaction is part of a deal that is valued at $250 million and announced in December 2017, in which Vivo Energy took over Engen's operations in several African countries including Gabon, DRC, Mozambique, Zambia and Zimbabwe.

The second deal has BP, which according to sources close to the process, maneuvering to buy the activities of a local player in the oil distribution of the Rwandan market.

Libyan Pipeline Fire Extinguished

Libya's National Oil Corp (NOC) said arson caused a fire next to a station on its Wafa-Mellitah gas pipeline. According to the state-run firm, the fire was caused by rocket-propelled grenades, gasoline and burnt car tires. The arson was carried out by "unknown criminals."

The pipeline connects Libya's Wafa field to the Mellitah complex operated by Mellitah Oil and Gas, a JV between NOC and Italy's ENI.

The fire was extinguished by the Mellitah Oil and Gas Co fire department and no significant damage was done to the pipeline, according to NOC.

In a statement on its website, NOC said that its board of directors "condemns in the strongest terms this criminal act, and stresses that NOC will take all necessary legal measures to hold those responsible accountable."

Repsol Enters Mexican Lubricants Market

Repsol reached an agreement to acquire 40% of the Mexican automotive fluids and lubricants company Bardahl. The alliance will allow Repsol to manufacture and sell its lubricants in Mexico through Bardahl, a company with extensive experience and reputation that operates one of Latin America's most modern production plants, located in Toluca.

Bardahl has a 6% market share in Mexico and sells its products through its own network, the country's broadest, consisting of 40 branches with more than 700 sales representatives and 10 exclusive distributors. The partnership with Repsol guarantees growth and value creation, driven by the Spanish company's knowledge, experience, and technological capacity.

With this transaction, Mexico will become one of Repsol's main lubricants markets and a production center for these products in Latin America. This investment is supported by the company's plan to open service stations across the country. Repsol plans to invest about €400 million to open between 200 and 250 service stations per year in Mexico through 2022, aiming to achieve a market share between 8 and 10%.

Repsol's current network already includes 60 service stations in nine states: Mexico City, the State of Mexico, Veracruz, Baja California Sur, Jalisco, Oaxaca, Puebla, Hidalgo, and Tlaxcala. The transaction will create a joint venture – 60% Bardahl, 40% Repsol – and is expected to be completed in the third quarter of 2018, once the necessary regulatory authorizations have been granted. The new joint enterprise will sell Bardahl- and Repsol-brand lubricants in Mexico, given the complementarity of the two companies in terms of both positioning and distribution channels

Tullow and Kenya Agree to Restart Crude by Road Shipments

The transport of crude from Kenya's oilfields in the Lokichar Basin will resume. This news comes after Tullow Oil and the Kenyan government reached an agreement on the resumption of shipments by road.

Road shipments were halted for more than a month after protests by the community who were demanding more security and a better understanding as to how they would benefit.

Tullow and its partners Africa Oil Corp. and Total were shipping roughly 2,000 bpd of crude by truck to the coast. The oil shipped came from the testing of production flow rates. The truck scheme was to be used until the start of full production and the construction of a pipeline from the fields to the Kenyan coast is complete.

"It was agreed that the operations of the ongoing oil development in Turkana County commence forthwith without undue delay," John Mosonik, chief administrative secretary at the Petroleum and Mining Ministry, said in a statement on August 7. "The government has further resolved to establish a two-tiered system framework that will provide communities living in Turkana county and Tullow Oil with avenues for addressing any emerging issues and concerns.".

By Mark Pabst, Senior Correspondent

With Friends Like These

Libya needs help from the international community, but the countries that could help stabilize the country are in no position to provide assistance.

Recent weeks have proven to be a roller coaster for a pair of strange bedfellows: American President Donald Trump and the internationally recognized government of Libya. Of course, that shouldn't be a surprise considering life seems to be a more or less permanent rollercoaster ride for both.

Source: Michael Valdon

Donald Trump

But that's not the only thing that ties the two together. In early September the reporter Bob Woodward released *Fear*, a book detailing life inside the Trump White House. Woodward, a journalist known for his role in reporting the Watergate scandal that led to the resignation of former United States President Richard Nixon, has written about the operation of the White House in several subsequent presidential administrations. But his book about the Trump administration has already proven to be the most controversial.

The bombshell revelations in *Fear* include Trump's privately stated desire to assassinate Syrian President Bashar al Assad, a proposal floated by the president to his cabinet to withdraw U.S. forces from the Korean Peninsula, and an attempt to unilaterally end the North American Free Trade Agreement. All of these efforts were thwarted by his own staffers. When he asked why American troops were even stationed in South Korea, Trump's secretary of defense allegedly responded, "to prevent World War III." While the book is a damning look at Trump from almost all angles, it paints a particularly unflattering portrait of a president whom senior aides worry poses a danger to national security.

To be fair to the Trump administration, the president and all of his top officials have denied almost every one of the details provided by Woodward. However, the journalist is standing by his account. Woodward's solid reputation and a widespread revulsion for Trump means that the large anti-Trump camp both in the U.S. and abroad appear to believe the revelations in *Fear*.

If the allegations in *Fear* are true, that's bad news for the United Nations' backed Libyan government in Tripoli. That's because lost in the uproar over Trump's foreign policy excesses is an anecdote about a July 2017 incident when then National Security Adviser H.R. McMaster asked the president to sign an order related to Libya.

According to Woodward's book, Trump responded by complaining the U.S. military wasn't doing enough to make money from Libya's oil reserves. Trump allegedly said, "I'm not going to sign it… The United States should be getting oil. The (American) generals aren't sufficiently focused on getting or making money. They don't understand what our objectives should be and they have the United States engaged in all the wrong ways."

Source: Magharebia

General Khalifa Haftar

An American president with a bizarre, neocolonialist attitude toward Libya and its oil is the last thing the internationally recognized Libyan government needs right now. The Tripoli-based authorities have been trying unsuccessfully to extend their rule over the entire country for years but have repeatedly failed. In the eastern part of the country renegade general Khalifa Haftar controls the area around Libya's second city of Benghazi. The Misrata Brigades, a militia hostile to the Tripoli government, is in charge of the eponymous port to Benghazi's west. Of course, forces in Misrata and Benghazi represent only a fraction of the armed gangs that operate in the country, with militias acting as the real power throughout Libya.

In August, the situation became markedly worse when militias from across north-west Libya entered the capital and captured part of Tripoli from a cartel of four armed groups that had previously controlled the city. The invading militias claimed their actions were in response to rampant corruption of both the forces that had controlled the city and the Tripoli-based government. They may have decided to act when Speaker of the Libyan House of Representatives Aguileh Salah announced that the House planned to proceed with presidential elections ahead of a constitutional referendum. The militias likely were worried the elected president would exercise an outsized influence over the referendum and potentially cut them out of power.

> **"Following the outbreak of violence in Tripoli, Italy's populist Deputy Prime Minister Matteo Salvini unleashed a thinly veiled attack on France, suggesting that ongoing French meddling was to blame for the most recent violence in Libya."**

The upcoming polls referenced by Salah are being pushed by France,

which took a lead role in ousting the former Libyan dictator Muammar Qaddhafi back in 2011. While the French-led western coalition bombed Qaddhafi's forces out of power, they were obviously unsuccessful at installing a strong central government following Qaddhafi's ouster. Now erstwhile French allies are attacking Paris for its inability to bring stability to Libya.

Matteo Salvini

Following the outbreak of violence in Tripoli, Italy's populist Deputy Prime Minister Matteo Salvini unleashed a thinly veiled attack on France, suggesting that ongoing French meddling was to blame for the most recent violence in Libya. "My fear is that someone, for economic motives and selfish national interest, is putting at risk the security of North Africa and, as a result, of Europe as a whole," Salvini told reporters in Rome in early September.

The infighting between France, the country that is pushing for the next round of Libyan elections, and Italy, the former colonial power in the country, does not bode well for Libyan security. The European Council on Foreign Relations (ECFR) stated recently that Libya "now faces the prospect of a new – and possibly deeply unstable – security architecture. An informal agreement between all parties to the conflict could materialize…(but) external actors should look on the emerging security arrangements in Tripoli as one of the few entry points through which they can stabilize the situation and ensure government ministries can continue functioning."

Unfortunately, the most prominent European actors appear to be feuding, which brings us back to Trump and the lack of a basic understanding of foreign policy that seems to characterize the top spot in Washington. The American president's foreign policy could be generously characterized as non-interventionist, but recent revelations indicate it is based more on ignorance than anything else. That means there seem to be few actors in the international community able to bring to bear the type of influence the ECFR believes is necessary to keep Libya from spiraling into an even more unstable security situation.

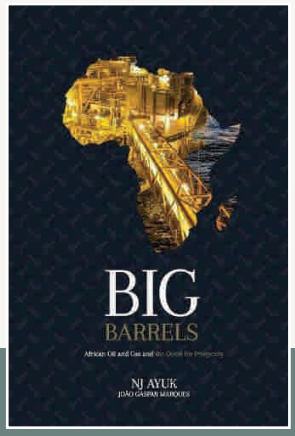
> "The American president's foreign policy could be generously characterized as non-interventionist, but recent revelations indicate it is based more on ignorance than anything else."

The irony is that the Libyan oil Trump seems to covet so much is actually flowing fairly freely. The country's National Oil Corporation (NOC) announced that this year's oil revenues will be the highest since at least 2013. Of course, keeping the oil flowing to the international market means promoting a strong and competent central government in Libya, and right now that appears to be something the United States and Europe are not able to do.

Reviewed by Mark Pabst, Senior Correspondent

Spreading the Good News

Big Barrels: African Oil and Gas and the Quest for Prosperity



by NJ Ayuk and João Gaspar Marques
Clink Street Publishing
2017 (English edition)
2018 (Spanish, French, and German editions)

What is oil for? To consumers oil is for making the car go, creating plastics to keep food fresh, and lubricating the occasional bicycle chain. To an integrated supermajor oil is what keeps the cash flowing, the employees working, and the stock price up. To environmental activists oil pollutes the air, befouls the water, and contributes to climate change. To an economist oil is the world's most important commodity and a driver of global economic growth.

But what is oil to citizens of an oil-rich African country? For years books, most of them written by non-Africans, have pointed out that oil revenues line the pockets of African kleptocrats, provide the money to fight civil wars, destabilize governments, and, paradoxically, make the average African poorer. These books focus on the so-called resource curse, an idea that describes how resource-rich countries have difficulties growing their domestic industry because natural resources like oil and gas make other economic sectors less competitive.

Some of these books are well researched tomes written by thoughtful economists or academics. The collection of essays "Escaping the Resource Curse" edited by Macartan Humphreys, Jeffrey D. Sachs, and Joseph Stiglitz comes to mind as an exemplary specimen of this type of book. However, not every book on the resource curse, especially those books focused on Africa, is overseen by a Nobel Prize winning economist like Joseph Stiglitz.

Instead, many are accounts by foreign journalists who travel through an oil-rich African country and highlight the poverty, corruption, and mismanagement that seem to plague the places on the continent blessed by copious amounts of natural resources. That is not to say their accounts are inaccurate or incorrect; a trip through Nigeria or Angola will certainly yield plenty of stories of economic hardship, social inequality, and general injustice.

But how much of this is specifically due to the presence of large oil reserves? And how much are these books a form of second-hand poverty tourism that paint the effects of oil with brushstrokes so broad as to become stereotype or even parody? If you read enough of these books it's tempting to conclude "oil is a curse for African nations, and that's that."

But NJ Ayuk, managing partner of Centurion Law Group in Equatorial Guinea, clearly rejects such a conclusion. Back in 2017 Ayuk and his co-author João Gaspar Marques published *Big Barrels: African Oil and Gas and the Quest for Prosperity*. Now they are publishing *Big Barrels* in Spanish, French, and German in an attempt to get their message to an even wider audience.

> "The book is an unapologetic antidote to all the books that are quick to see Africa as the victim of the resource curse. Instead, *Big Barrels* looks at the many different ways that **oil has helped African countries** and how these countries are successfully using their oil revenues to benefit their citizens."

The book is an unapologetic antidote to all the books that are quick to see Africa as the victim of the resource curse. Instead, *Big Barrels* looks at the many different ways that oil has helped African countries and how these countries are successfully using their oil revenues to benefit their citizens. Ayuk and Marques don't deny that poverty exists in Africa or that oil revenues have been stolen, but instead they choose to celebrate victories rather than mourn defeats.

For example, they point out that the Extractive Industries Transparency Initiative (EITI), an international agreement designed to get entities like oil companies to make public what they pay as a result of their activities, has been "the single most successful anti-corruption program in the oil, gas and mining industries" ever. Is EITI perfect? Of course

not. Does corruption in places like Nigeria still exist despite the country's embrace of EITI? It certainly does, but the authors note that Nigeria has also recovered billions of dollars in unpaid taxes from oil and gas companies because of EITI. More importantly, the Nigerian citizenry knows this money has entered the public coffers and is now able to track it and make sure it doesn't end up in a politician's Swiss bank account.

The authors do not shy away from celebrating progress even where few others are willing to admit it exists. For example, when most outside observers speak about Equatorial Guinea they condemn the country's atrocious human rights record, shocking social inequality, and demonstrated thievery on the part of the ruling family. However, Ayuk and Marques write that oil has also been used to launch ambitious infrastructure projects. Because of oil revenue Equatorial Guinea has gone from less than 100 kilometers of paved roads in 2002 to over 3000 kilometers in 2017. Over the same period government investments in the energy infrastructure resulted in an increase in power generation from five megawatts to 561 megawatts. Ayuk and Marques claim, correctly, that without the money provided by oil the government would not have been able to provide Equatoguineans with these improvements.

And these are not the only examples the authors have of how petrodollars have helped African countries. They discuss how Gabon's petro-prosperity has allowed it to take a pioneering stance on environmental issues, including establishing a string of national parks that would be the envy of any country. They also write about good governance, something Africa's harshest critics refuse to acknowledge even exists on the continent. Ayuk and Marques argue that Ghana's hydrocarbon law is the equal of more developed countries. After all, it addresses the issue of transparency, how oil revenues will be spent, and even allows civil society a say in how future hydrocarbon legislation is written.

> "Because of oil revenue Equatorial Guinea has gone from **less than 100 kilometers of paved roads in 2002 to over 3,000 in 2017**. Over the same period government investments in the energy infrastructure resulted in an increase in power generation **from five megawatts to 561 megawatts.**"

Even in the face of poor governance, the authors think there are successes that we should acknowledge. While Angola's government is plagued by corruption, the writers praise how the national oil company, Sonangol, has remained functional despite political pressure, technical challenges, and even civil war. Sonangol's accomplishments in the face of adversity are something special for which Ayuk and Marques think the entity should get credit.

In the end *Big Barrels* doesn't deny the many problems that oil-rich African nations routinely face. Instead, it chooses to focus on the positives that outside observers seem to overlook. Obviously, the continent's oil exporters have a long way to go. But there are successes that can be built upon. And that is a story that needs to be told.

By TWI

Early-Stage Detection of High Temperature Hydrogen Attack in Carbon Steels

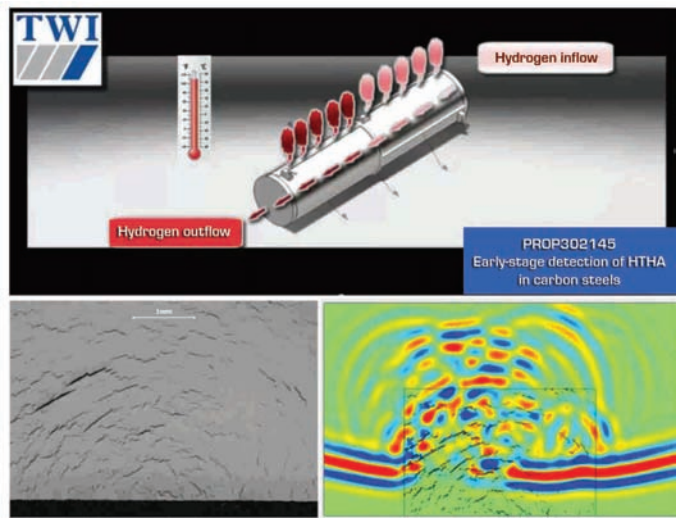
TWI Joint Industry Project on early-stage detection of high temperature hydrogen attack in carbon steels opens to partners

TWI Ltd has recently launched a new Joint Industry Project to explore and validate detection methods for high temperature hydrogen attack (HTHA). Inspections will be carried out on a carbon steel pressure vessel – operated in a regime calculated to induce accelerated HTHA – and designed to simulate the real-world operations and challenges associated with detecting this phenomenon.

Carbon steels are used extensively in oil and gas refinery equipment, and have fallen victim to HTHA, as is evident from the industrial incident in 2010 at the Tesoro Anacortes refinery in the USA. The US Chemical Safety and Hazard Investigation Board (CSB)'s report, published in 2014, recommended the use of a new boundary for carbon steel in API 941 (Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants) which would effectively prohibit the use of carbon steel equipment at process conditions above 400°F and greater than 50psia hydrogen partial pressure. Consequently, this would preclude the use of carbon steel for many vessels currently operating in refineries. In 2016, a new limit line for non-post-weld heat treated welds in carbon steel was introduced into API 941 to take into account several recent incidents affecting such material.

An important aspect of preventing similar industrial incidents is the effectiveness of the inspection process used to assess components at risk. The CSB's report found that there were severe limitations to inspection practices on refinery plants, such that they were not sufficiently reliable to ensure mechanical integrity and prevent HTHA equipment damage. Hence, the report raised a key technical challenge to develop and implement practical techniques for industry to use in the field that would be sensitive to early-stage HTHA.

The Joint Industry Project led by TWI proposes to assess and validate front running, ultrasonic techniques for the inspection and identification of HTHA damage. There will be a particular focus on welds and their heat-affected zones, which are recognized as being preferential sites for HTHA and were strongly implicated in the Tesoro Anacortes refinery incident. The work will be carried out on a representative pressure vessel, incorporating different weld types and configurations, which will be designed to present similar challenges to those found during monitoring and inspection on petrochemical sites. Periodic inspection of the vessel in use will enable practical demonstration and validation of the techniques for early-stage detection of HTHA. If required, the vessel can be operated until failure within TWI's unique high-pressure test pit facility.



Source: TWI

Channa Nageswaran, NDT Team Manager at TWI, said "TWI is currently developing cutting-edge ultrasonic techniques for the detection of early-stage creep damage that are also applicable to the problem of high temperature hydrogen attack (HTHA), therefore, the decision to undertake this project was a natural progression of our existing research," he said."

"Furthermore, we can also bring to this challenge an in-depth knowledge of non-destructive testing practice, and expertise in residual stress measurement, modelling, fracture and metallurgy," he added.

He went on to explain "The benefits that companies or organizations can expect to gain from participating in the Joint Industry Project include: access to proprietary, validated ultrasonic techniques that can detect the early stages of microstructural degradation due to HTHA; resultant procedures for inspecting vessels and pipework while in service, or during outages using commercially available equipment; improved ability to meet regulatory requirements for the operation of ageing assets; and a reduction in equipment replacement costs."

TraceNet™ Genesis System Sets New Standard in Process Heating Control & Monitoring

Thermon Group Holdings, Inc. announced the TraceNet™ Genesis Control & Monitoring System, a new solution for managing heat trace circuit performance on process lines, tanks and instrumentation.

The TraceNet Genesis System gives instant access to comprehensive heat trace circuit information, including circuit performance history, fault analysis, and circuit drawings. Using this information, maintenance personnel can predict failures avoiding downtime or quickly restore operations minimizing downtime.

"Maintenance personnel must accurately predict and prevent heating system downtime. They require the right information at their fingertips to quickly and accurately troubleshoot issues as they arise," said Peter Baen, Senior Product Manager for Thermon. "In response, we developed the TraceNet Genesis System to be a fully connected Industrial Internet of Things (IIOT) platform for controlling heat trace circuits that provides comprehensive and rich data at the point of use. At the panel, we deliver critical information, drawings, and trending performance data of up to six months; a giant leap forward in the electrical heat tracing industry."

The TraceNet Genesis System provides instant on-panel access to heat trace circuit performance trending and histories of up to six months, for up to 72 heat trace circuits. Until now, this capability was only available by networking back to a remote computer.

A six-month history that reflects, for example, fluctuations or a steady decay in temperature could indicate that the system requires inspection to see whether the thermal insulation is being compromised or if an individual heater is not operating properly. By analyzing this data, maintenance engineers can assess the timing, process operating conditions, and any undesirable symptoms as an early indicator of a future problem. This type of data is critical to effective circuit and overall system maintenance.

Another unique feature of the TraceNet Genesis System lies in its ability to allow circuit isometric drawings to be stored and viewed locally, at the heat trace panel. As a result, maintenance engineers can quickly determine the circuit's precise location and quickly respond to alerts. For the first time, isometric drawings need not be viewed from a remote computer monitor, but are presented on the local TraceNet Genesis touchscreen at the panel.

The TraceNet Genesis System includes an easy-to-navigate touchscreen user interface. It offers a modern and intuitive user experience similar

Source: Thermon Group Holdings

to that of mobile device apps. The interface gives a simple overview of the overall system status showing the operating status of 72 circuits at-a-glance. With a single touch, the user can easily navigate into circuit details in order to modify set points, manage alarms, see trending or view a drawing. All prompts are self-explanatory and users can master the system within minutes with little or no training. The TraceNet Genesis System supports eight different languages: English, Arabic, Chinese, Spanish, French, Japanese, Korean, and Russian.

Schlumberger Introduces New MEMS Gyro Surveying Service

Schlumberger has introduced its new GyroSphere* MEMS gyro-while-drilling service.The GyroSphere service responds to the needs of E&P companies for a faster and more rugged, gyro-surveying while-drilling tool that increases drilling efficiency and reliability while reducing drilling risks.

As the first application of microelectromechanical system (MEMS) technology for gyro surveying while drilling in the oilfield, the GyroSphere sensor performs gyro surveys faster than conventional systems and avoids the need for recalibration between runs. Solid-state technology enables the GyroSphere sensor to withstand the downhole shock and vibration that occur during drilling beyond the limits of current gyro technologies. Additionally, the GyroSphere service can reduce gyro survey uncertainty by up to 45%, providing more accurate access to smaller reservoir targets.

"The GyroSphere service substantially improves operational efficiency by enabling gyro surveying without taking any additional rig time," said Tarek Rizk, president, Drilling & Measurements, Schlumberger. "Two surveys can be completed using the GyroSphere service in the same amount of time conventional gyros take to start just one."

The GyroSphere service has been proven through extensive testing and field trials in the North Sea, Ecuador, Africa, and


Source: Schlumberger

Russia. In Russia, the GyroSphere service enabled a customer to avoid wellbore collisions while accessing reservoirs from existing structures, eliminating drilling risks associated with deploying conventional gyro surveys.

Unique Group Expands Offerings in African Market

Unique Group extended its offering to include diving and industrial gas supply for the African offshore market from its base in Cape Town. The extension of capabilities now includes the full range of diving, welding, industrial, laboratory, test and calibration gases, chemical tanks and gas storage equipment. These additions will help bolster the company's diving and life support division, thereby offering a complete solution for the diving industry.

As part of the integrated package offered to clients, Unique Group will supply diving gas, speciality gas and gas storage equipment on a sale and rental basis to its diving and life support customers across Africa. These service offerings will add to the existing range of specialized solutions and services for the marine, diving and survey industries. The expansion will significantly simplify procurement processes and reduce operating costs for clients. All equipment ranging from saturation and air dive systems to hyperbaric chambers and diving gas equipment is manufactured and supplied to stringent quality and safety requirements.

Source: Unique Group

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

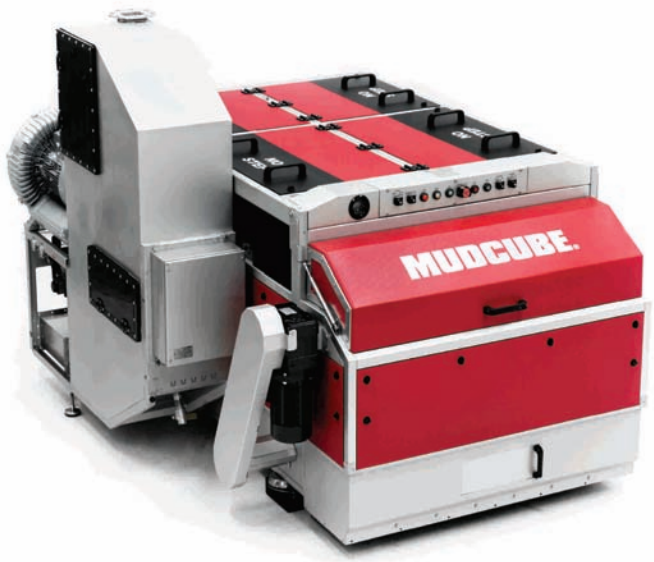
Cubility Launches MudCube® X

Cubility AS, a provider of solids control solutions that improve efficiencies, solids control and HSE around drilling operations, has launched the latest evolution of its industry leading solids control solution, the MudCube® X.

Building on the capabilities of the MudCube as a field-proven, suction-based, solids control alternative to vibrating shale shakers, the MudCubeX comes with an enhanced modular design allowing for easy integration into all rig designs; and fast installation and maintenance so that the MudCubeX is up and running and delivering immediate value to customer operations and rapid ROI.

The MudCubeX is engineered to allow for local manufacturing and/or assembly worldwide, providing the benefits of greater drilling efficiencies and unparalleled HSE performance to operators and drilling contractors globally.

"We have listened to the industry need for faster drilling times and lower costs and with the MudCubeX,we have responded," said Even Gjesdal, Cubility CEO. "The result is even greater applicability, flexibility and efficiencies; a driving down of costs and an almost immediate impact on the bottom line; and a MudCube X solution that is accessible worldwide. We are enormously proud as to how the MudCube has revolutionized solids control and we look forward to even further market penetration."



Source: Cubility AS

With the rise in pad drilling and multiple wells, the MudCube X can be added to existing operations and start delivering value in drilling fluids and waste disposal within a matter of days.Furthermore, as opposed to shakers, the MudCube X processes 100% of the mud, thereby immediately increasing performance with as much as 80% more mud recovered than other technologies. When taking this across a field and hundreds of rigs, the impact on the bottom line and investor returns will be significant.

The MudCube is a compact, lightweight solids control system that eliminates the traditional process of shaking fluids from the drilled solids with the negative HSE impact. The MudCube uses a combination of high airflow and a rotating screen filtration system to improve separation efficiency, allowing more drilling fluid to be recycled back to the mud tanks and resulting in dryer cuttings and less waste. This leads to improved drilling efficiencies, reduced operational costs, improved HSE and working conditions.

New Offering Introduces Automation to Hydraulic Fracturing

Halliburton Company unveiled its Prodigi™ AB Service, a first-of-its-kind offering that introduces automation to hydraulic fracturing. By automating the breakdown process of a fracturing treatment, Prodigi AB Service helps deliver better well performance. The service uses algorithmic controls and is supported by a Halliburton completion advisor who will tune the system to optimize the performance.

Prodigi AB Service helps improve overall efficiency, maximize the performance of perforation clusters and mitigate the risk of screen-out. Prodigi AB Service provides consistent design execution, better distribution of fluid across the perforated interval, and improved treatment pressures and rates. The service delivers improved precision to achieve a lower cost per BOE.

Michael Segura, vice president of the Production Enhancement business line said "Prodigi AB Service offers a significant change in the way we are able to optimize our hydraulic fracturing operations in real-time, accelerate the learning curve to optimize well design and improve the overall consistency of our performance at the wellsite."

Halliburton has used Prodigi AB Service in the Permian basin with outstanding results for Primexx Energy Partners. The service reduced overall treating pressures, increased consistency of the formation breakdown process and resulted in an immediate improvement in cluster efficiency.

Sam Blatt, VP of Operations for Primexx said "Prodigi AB Service is helping Primexx achieve our execution and production goals. The reduction in treating pressure and operational consistency is allowing us to execute treatments more efficiently and the improved cluster distribution is helping us better wells."

BENEFITS

Real-Time Optimization
- Adaptive Settings
- Streamlined Decision Making

Design Assurance
- Execution Consistency
- Process Efficiency
- Screen-Out Mitigation

Faster Learnings
- Consistent Field Data Set
- Accelerated Learning Curve

by Ricardo Silva and Rosário Paixão
Miranda Law Firm

Tapping into Africa's Refining Potential

Africa is home to a long list of oil-rich countries. In 2017, Africa's total crude oil production amounted to around 8 million barrels per day (bpd), with sub-Saharan Africa contributing an estimated 5.5 million bpd to global production. The stabilization of crude oil prices in 2017 has contributed significantly to the increase in the region's production, and to the opening up of new investment opportunities.

Paradoxically, Africa's top oil producing countries, counted among the world's fastest growing economies, are also major importers of refined petroleum products. While the continent's crude oil production is more than enough to meet its demand, the domestic refining output is far too low, forcing the region to export the lion's share of its production and rely on refined-product imports to satisfy the internal market's rising needs. An estimated total of 1.9 million bpd of refined products are currently being imported by African countries.

Nigeria

Traditionally ranked as Africa's leading crude producer and currently the sixth largest in the world, with a maximum production capacity of 2.5 million bpd, Nigeria is one of the major importers of refined products on the African Continent.

The four existing refineries – two in Port Harcourt, one in Kaduna and one in Warri – with a combined installed capacity to refine 445,000 bpd, are riddled with operational problems due to the prolonged lack of proper maintenance and are far from operating to their fullest capacity. According to the official information made available by the Nigerian National Petroleum Corp. (NNPC), in 2017 the highest capacity utilization was just under 37%, and in 2018 they are collectively producing at 14% capacity. Even if the four were running at full capacity, they would only be able to supply a quarter of Nigeria's fuel needs. This basically forces the country to import the vast majority of refined products it consumes (Nigeria reportedly imports one million tons of fuel per month).

NNPC has announced plans to rehabilitate and increase the utilization of the existing refineries. However, the state of decay and obsolescence of the plants and equipment is allegedly such that nearly $1.2 billion would be required to revamp and modernize the existing facilities. The much expected revamping of the four refineries was first announced in 2017 and will purportedly begin later this year, following discussions held with various consortia on the best funding alternatives. The total rehabilitation costs were not disclosed, and no financial commitments seem to be in place to-date.

> "The owner of the Dangote Group and ranked in 2018 by Forbes magazine as Africa's richest man, Aliko Dangote has recently decided to invest an estimated **$10 billion** in the construction of the first privately owned refinery in Nigeria…with a production forecast of **600,000** bpd …"

Angola

After overtaking Nigeria temporarily as sub-Saharan Africa's largest oil producer in 2017, Angola currently ranks second, with oil production for 2018 being forecast to be around 1.6 million bpd.

The only full-scale refinery operating in the country is a long way from meeting the domestic needs for refined products. With an estimated capacity of 65,000 bpd, the Luanda Refinery, built in the 1950s (100% owned by the state oil and gas company Sonangol, and heavily subsidized), produces 39,000 bpd at maximum capacity, covering about 20% of the country's demand for medium grade and heavy fuels.

This forces the country to rely on imported refined products to cover 80% of market demand, and whose prices fluctuate according to the latter. In addition, products refined by the country's single refinery are reportedly more expensive than imported products, due to the unit's age and structural inefficiencies.

Although plans for new refineries have been discussed on and off in Angola for a number of years, no new units have materialized.

South Africa

South Africa, the continent's most industrialized country, is also a net importer of refined oil products. It currently has six refineries –four crude oil refineries, one coal-to-liquid (CTL) fuels and one natural gas-to-liquid (GTL) fuels. These refineries do not operate at levels needed to meet the country's demand and require upgrading to be able to produce cleaner fuels to meet the automotive industry's requirements. South Africa is currently importing about a quarter of its refined products consumption.

Also, the Mossel Bay plant, the world's first GTL refinery and the third largest GTL refinery in the world, which represents around 6% of South Africa's refining capacity, is operating at less than half of its 45,000 bpd capacity and could allegedly run out of feed gas within two to four years when reserves dry out.

Future of African Refining

At a first glance, it could be deemed surprising that major crude oil exporters with proven reserves, like Nigeria and Angola, and more industrialized countries like South Africa, would be importing products they should be refining and selling, which in turn creates balance of payments problems. This however epitomizes a problem that a great majority of African countries have been facing in the last decades.

Less than 50 refineries serve the entire continent, many of which are obsolete and operating well below their capacity. Besides being insufficient and underperforming, most of the current refineries are not fitted out to produce the cleaner fuels required by modern engines or to comply with the most recent international environmental requirements and standards.

The upgrade and maintenance of the existing infrastructure and the construction of new refineries are high-cost ventures that pose unique challenges in the raising of financing, such as the volatile margins in the refining business, easily impacted by all kinds of factors affecting the global market. Moreover, most African countries are also perceived by many as involving additional risks – political, civil or economic instability, local content requirements, corruption, currency fluctuation, or government-backed subsidies to make fuel cheaper at the pump (a hefty cost for the States' budgets when the oil price is high) – that may discourage potential private investors. For those reasons, most of the ambitious refining projects announced in recent decades either remain on paper or have been mothballed due to financial constraints.

However, new winds of change seem to be blowing through the African continent with the hope to reduce the region's reliance on refined-product imports. Projects for the construction of new refineries or the revamping and upgrading of existing units have been recently announced in several countries, including Nigeria, South Africa, Mozambique and Angola.

The owner of the Dangote Group and ranked in 2018 by Forbes magazine as Africa's richest man, Aliko Dangote has recently decided to invest an estimated $10 billion (around $7 billion bank financing and $3 billion equity) in the construction of the first privately owned refinery in Nigeria, expected to be completed by December 2019. With a production forecast at 600,000 bpd, the facilities, already being built in the Lekki Free Trade Zone, will be Africa's largest refinery and a true game-changer in the continent's supply of fuel.

At the end of 2017, the South African government also announced its intention to build a new refinery with a 400,000 bpd capacity with the help of its BRICS partners. The project, which had already been announced in the past, never evolved because of the lack of investment partners.

In Mozambique, while some seem to believe that a refinery in the country would be unviable, the state-owned National Hydrocarbon Company, ENH, launched in April 2018 a public tender for consultants to conduct a study to assess the economic and technical feasibility of building the country's first natural gas refinery. For that purpose, cooperation agreements were already signed between ENH and one of its partners in the Rovuma Basin Area 4, the Chinese National Petroleum Corporation.

As announced by ENH, while waiting for the gas from the Rovuma Basin's reserves to be piped onshore (which presumably will not happen before 2022) the immediate goal would be to import liquefied natural gas for in-country refining and subsequently selling and exporting the refined products to neighboring non-coastal countries, if the projected refinery were to be concluded before production.

2017 was also a changeover year for Angola. The regulation of refining activities in 2017, which had been awaited since the enactment of the 2013 legal framework on crude oil refining, more than just providing a new set of technical and procedural rules for the construction, operation and maintenance of refineries, sends a clear message to private players interested in investing in the (re)organization of the country's downstream sector. This message was further strengthened with the recent entry into force of a new Private Investment Law in June 2018. The new statute sets out principles and rules aimed at facilitating, promoting and accelerating private investment operations in Angola, introducing significant changes in the legal framework applicable to domestic and foreign investment.

The country is eager to attract investment for the building of new refining infrastructure and rehabilitation of its single operating refinery, having as a primary goal the country's self-sufficiency in refined products. At the end of 2017, Sonangol launched a tender for the construction of two refineries, one in the port city of Lobito and the other in the northern enclave of Cabinda. With completion planned for 2022, the Lobito Sonaref project – Angola's first attempt to overcome the lack of domestic capacity, put on hold since 2016 – is expected to process up to 200,000 bpd and create 10,000 jobs. No deadline or capacity

> "Less than 50 refineries serve the entire continent…Besides being insufficient and underperforming, the current refineries are not fitted out to produce the cleaner fuels required by modern engines or to comply with the most recent international environmental requirements and standards."

has thus far been defined for the Cabinda project. By February 2018, more than 60 proposals from national and foreign companies and consortia had been submitted, with Sonangol having selected the best 14 bids. The due diligence and negotiations phase is currently underway.

Also, in June 2018, Sonangol and Italian major ENI signed a technical and financial assistance agreement for improving and expanding the Luanda Refinery over a 24-month period and increasing the unit's current capacity. The financing to be made by ENI, estimated at about $180 million, will be channeled to the overall maintenance of the refinery, the development of a business and operational model focused on sustainability and staff training, and the construction of a new refining unit.

If all these construction, rehabilitation and modernization projects come to fruition, the continent will witness a historical change in a critical sector. The increase in the domestic refineries' utilization levels and the new refining capacity would entail numerous benefits, starting with the reduction of the heavy import bills and freight costs (preventing the outflow of much needed hard currency reserves), the creation of jobs, the increase in refined-product storage capacity and the creation of stock, an increased tax collection, less exposure to the risk of oil theft, and the possibility to export any surplus products to other markets. In the long-run, said projects would lay the foundations for the creation of sustainable, well-organized and competitive refining markets.

African nations need to find alternatives to adequately finance these projects and their maintenance, either through the cooperation between the national oil companies and private investors or by making a bet in privately owned infrastructures. Even if the African region and the refining sector in particular are considered by many as a challenging environment for private investors, these fast-growing economies are providing unique opportunities for local and international players looking to enter new markets, who may end up becoming greatly needed regional or worldwide exporters of refined products.

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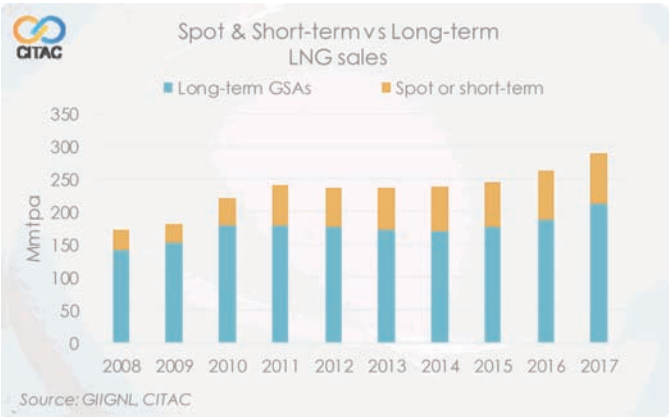
AFRICA

A Continent 'Ready' to Supply

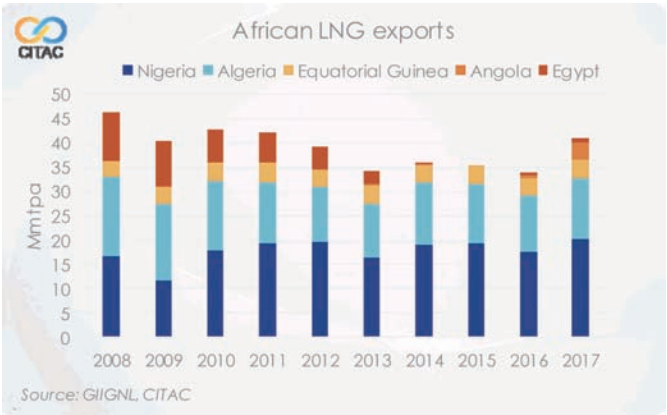
This time last year, there was a fear that global LNG demand growth could be too sluggish to keep up with supply capacity additions. However, fears started to wane as end-year figures saw Chinese LNG imports increasing by 42% in 2017 as well as stronger growth in other Southeast Asian and European demand centers. Overall, global LNG trade increased 10% in 2017, injecting optimism to new projects around the globe.

Furthermore, LNG has continued its path into becoming a globally traded commodity. Out of the 289 Mmtpa commercialized in 2017, almost 80 Mmtpa were traded into spot or short-term deliveries. The Spot buying spree over Q4 2017 in Southeast Asia, especially from China, gave a boost to LNG prices. And so far in 2018, there has been a significant improvement in market transparency as Platts disclosed trading parties of a physical LNG trade on its platform for the first time.



While demand was increasing strongly mostly in Southeast Asia, supply growth was more diversified and the African continent played a big role in this. Out of the incremental 26 Mmtpa of LNG produced globally in 2017, 27% (7 Mmtpa) came from Africa. The strong supply growth in the continent was due to higher utilization rates in the Nigerian, Algerian and Equatorial Guinean plants as well as the Angolan plant in Soyo finally working a full year without snags.

Furthermore, analysis over 2018 already indicates LNG supplies from Africa should continue to increase. Over the past 12 months, significant developments have been observed in Egypt and Cameroon; and future developments have been announced or reached new milestones in other parts of the continent.



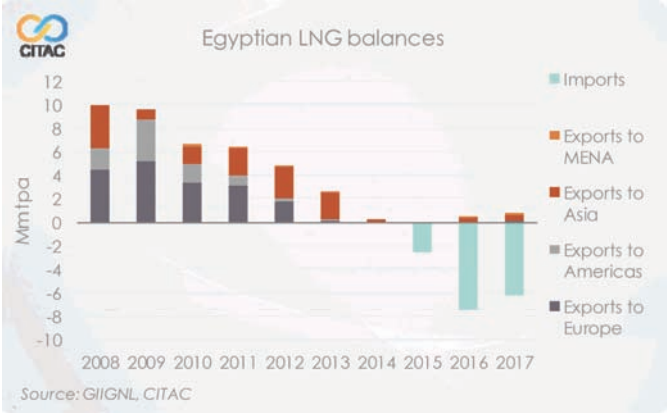
Egypt: A new 'old' exporter?

Tides seem to be turning again in Egypt. The country that went from an LNG exporter to an importer in 2015 might be swinging back after only three years of importing LNG.

This is mostly due to the start of production in the super giant Zohr gas field, located in the Mediterranean Sea. On December 17, 2017, only after 2.5 years since its discovery by ENI, pumping operations began at Zohr, at 350 million cubic feet per day (Mmcf/d). The gas goes by pipeline to Port Said where it isprocessed and linked to the national natural gas grid. Zohr's Phase 1 was completed in mid-June 2018 and production reached 1.2 billion cubic feet per day (Bcf/d). Currently, phase 2 is being prepared and is due to be finalized by the end of 2019, when production is expected to reach as high as 2.7 Bcf/d. Zohr's output will supply the domestic market and any available surpluses will be processed in Egypt's two existing liquefaction facilities.

Egypt currently has two liquefaction plants: Damietta, owned by ENI, and Idku, owned by Shell. Both trains were inaugurated in 2005 and, when operating at almost full capacity, were exporting over 10 Mmtpa of LNG. However, natural gas fields in the country started to decline much faster than expected and international oil companies could not invest in new fields, as government-regulated natural gas prices were too lowto make new developments viable. As supply decreased and demand continue to rise, especially for power generation, the government decided to divert natural gas destined for exports to the local market. As a result, Damietta had to cease exports by February 2013 and Idku followed suit a year later, declaring force majeure.

Without further local supplies, Egypt had to find gas elsewhere and swung into the role of an LNG importer in 2015. The Egyptian Natural Gas Holding Company (EGAS) signed contracts for five-year time charters of two FSRUs: *Hoegh Gallant* and *BW Singapore*, which were both moored in the port of Ain Sokhna in 2015. The vessels have 500 Mmcf/d and 750 Mmcf/d of capacity, respectively. Between 2015 and 2017, both vessels operated at high capacity, importing and re-gasifying 16.3 Mmtpa of LNG.



So far in 2018, LNG imports into Egypt have decreased substantially though. In January, Egypt imported only three cargoes, a big decline from the highs of 11 cargoes per month observed during summer 2017. EGAS had plans to deploy a third FSRU by H2 2017 to handle the surge in natural gas demand from new power plants but incremental supplies have sufficed to meet the increase in demand, thus cancelling the need for the third FSRU.

Even though Zohr is the main new development, incremental gas supplies are not limited to it. On February 12, 2018 BP announced it had begun production at the offshore Atoll gas field almost seven months ahead of schedule. Phase 1 of the Atoll project is producing 350 Mmcf/d of natural gas and production will increase as production is still ramping up. The Atoll field is estimated to contain 1.5 trillion cubic feet (Tcf) of natural gas and 31 million barrels of condensate. BP is also producing natural gas from the West Nile Delta development, which will be producing around 1.5 Bcf/d of natural gas by end of 2019. Egypt seems to be growing into a role of natural gas hub, as a country that produces, exports, consumes and also imports gas, potentially processing stranded gas from Israel and from other large natural gas discoveries in the East Mediterranean, such as ENI's Calypso field in Cyprus.

Cameroon: FLNG takes off in Africa

The first floating LNG terminal in Africa, and second of its kind in the world, came online in May 2018. The vessel has a total capacity of 2.4 Mmtpa but will operate at 1.2 Mmtpa. The plant started liquefying gas onMarch 12 and exported its first cargo to China on 17 May, after technical issues delayed the scheduled ramp up in production. Altogether, the project came online $70 million under budget.

The *Hilli Episeyo* LNG is a joint project between Société Nationale des Hydrocarbures du Cameroun (SNH), Perenco Cameroon and Golar LNG. Golar provides and operates the vessel, under a production tolling agreement, while SNH and Perenco supply the gas from the stranded offshore gas fields Sonaga Sud and Ebome, near Kribi. Perenco has sold all of the LNG output via a competitive tender to Gazprom Marketing and Trading for a period of eight years.

Bringing the whole liquefaction technology onboard a vessel is challenging but is also a game changer. So far, investors have been weary of possible complications with the new technology. Despite the technical difficulties, FLNG plants provide much faster construction timeframe, lower costs (the Cameroon FLNG is estimated to have cost $1 billion while other onshore projects can cost as much as 10 times more), and flexibility, as the ship can just move to a different location if production falls below economically viable levels.

Nigeria: Train 7 to secure NLNG's global market share

Nigeria is the largest LNG exporter in Africa and fourth largest globally. NLNG, located in Bonny, is a JV between NNPC, Shell, Total and ENI, and was envisioned as a way to monetize associated gas and reduce flaring. The plant has been operational since 1999 and underwent four expansions until it reached its current capacity of 22 Mmtpa, divided in six trains.

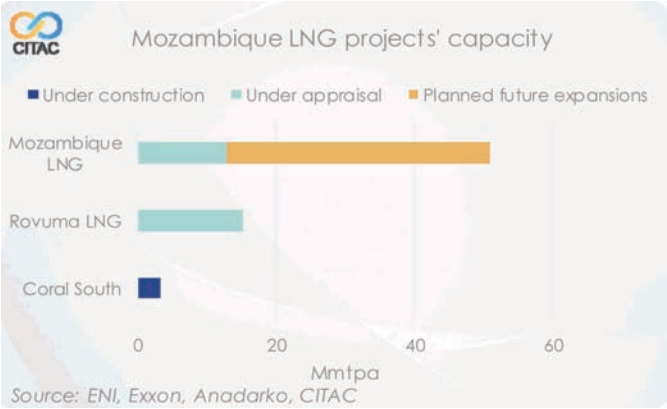
After several years of speculation, NLNG shareholders have finally taken the plunge and signed a FEED contract for Train 7. The new train is expected to add 8 Mmtpa to NLNG's capacity, bringing it to a total of 30. Without further delays, a Final Investment Decision is expected by late 2018. With the seventh train, NLNG partners are likely to try to secure more flexible delivery deals, as both buyers and sellers are currently wanting to take advantage of the trading opportunities brought by flexibility. Currently, out of the operational liquefaction capacity of NLNG, approximately 87% is contracted into long-term gas sales agreements (GSAs) delivered ex-ship.

Talks of the seventh train had been ongoing for over a decade and the project had stalled amidst unfavorable global LNG project economics. However, rapid demand growth from China, India and the Middle East has injected new life into the economics of LNG projects around the globe. Furthermore, NLNG's Train 7 would help to retain NLNG's global market share at around 7% despite capacity additions from the US, Australia and Qatar.

Angola: Full capacity soon to be achieved

The Angola LNG (ALNG) project was Angola's largest single investment ever, costing $10 billion to build. The plant utilizes associated natural gas that would otherwise be flared, just like in Nigeria. The offshore gas is collected and transported to an onshore liquefaction plant located near Soyo, in the Zaire Province. 2017 was the first year the plant was functional throughout the whole year after a major rupture on a flare line in April 2014 caused the ALNG plant to shut down for 26 months before slowly restarting in mid-2016.

The single-train facility has a capacity of liquefying 5.2 Mmtpa of natural gas but can only operate at 70% of its capacity, as it has exhausted all gas supplies from associated gas produced from oil fields nearby. ALNG's Chairman, Artur Pereira, announced in early June 2018 investment plans for the upstream side of the supply chain to increase gas availability to ALNG and bring it to full capacity over the next few years.



Moreover, on June 6, Mike Wirth, CEO of Chevron, announced a $1 billion investment to build a pipeline to provide incremental gas supplies to ALNG. Chevron is the operator and the majority shareholder (36.4%) in the ALNG consortium, which also includes Sonangol (22.8%), ENI (13.6%), Total (13.6%) and BP (13.6%). Chevron is currently awaiting Sonangol's approval of their engineering contracts in order to start the works on the new pipeline. It is still unclear from which fields Chevron is planning to bring this incremental gas.

Mozambique: Africa's gas giant still struggling to reach FID

Over the past 10 years, major gas discoveries were made in the Rovuma Basin in Mozambique. At least 84.75 Tcf of proven natural gas reserves have been found and private international companies are working to develop those reserves into a few export projects.

There are two major areas where the developments are taking place: Area 1, led by Anadarko, and Area 4, led by ENI and Exxon. While Area 1 is closer to the shore, Area 4 was the first to see a project reach FID: Coral South FLNG, in June 2017.

Coral South will be the second floating liquefaction plant in Africa and is expected to cost $11 billion. The unit will have a capacity of around 3.4Mmtpa and all LNG output from the plant will be sold to BP, who signed a 20-year GSA with the consortium in October 2016.

The vessel will be built in Samsung Heavy Industries' yard in South Korea, starting from September 2018, and total assembly of the ship is expected to take around four years. The delivery of the vessel itself is scheduled for early 2022 and first cargo should follow suit by mid-2022.

In addition to Coral FLNG, the partners for Area 4 are also developing an onshore facility, named Rovuma LNG. This project will develop gas from the Mamba fields and will deliver some natural gas quantities to the Mozambican local market. ENI will lead the upstream development of the project while Exxon will be in charge of building and operating the two onshore trains, which will each have a liquefaction capacity of 7.6 Mmtpa. The partners currently expect FID to be reached in 2019 and first gas by 2024.

Meanwhile, in Area 1, Anadarko is developing its onshore Mozambique LNG facility, to be located in Cabo Delgado. The project consists of building two trains, with a combined liquefaction capacity of 12.8 Mmtpa, that will be fed by natural gas coming from the Golfinho and Atum fields. The Mozambican government has already approved the construction and resettlement plans for the facilities. With 'agreements in principle' to most of the output of the plant, the consortium expects to reach FID in early 2019. So far, they have already secured 7.7 Mmtpa in binding sales and purchase agreements, less than 1.0 Mmtpa short of the 8.5 Mmtpa required to trigger FID.

In order to lend the money, banks usually require 75-100% of the output to be secured in long-term gas supply agreements. However, as the LNG market becomes more flexible, buyers are less interested in long-term secured take-or-pay deals and innovative solutions have to be found. In June 2018, Centrica and Tokyo Gas signed a 15-year deal purchase agreement with the consortium for the offtake of 2.6 Mmtpa, which will be shared by both companies that can choose on a cargo-by-cargo basis where and who will receive the LNG. Earlier this year, EDF Energy also signed an agreement to offtake 1.2 Mmtpa from the plant over 15 years.

It is worth noting that this is only Phase 1 of Anadarko's LNG project for Mozambique. Once the first phase is operational, Anadarko plans to start to gather investors for the second phase. Mozambique LNG is planned to consist of eight trains, with total liquefaction capacity of 50 Mmtpa. When adding these to projects in Area 4, Mozambique could potentially be exporting 65 Mmtpa of LNG as early as 2030, making it the second-largest global LNG exporter.

However, two factors pose threats to the projects. First, the emergence of violent Islamic extremism in northern Mozambique raised security concerns among investors. Secondly, there is a government risk factor: the Mozambican government is still negotiating and deciding the regulatory terms to the LNG export activity, including the royalty payments and other taxes to the projects. In addition, general government gross debt has ballooned from 40% of GDP in 2012 to 110% by 2017. A government too starved for cash is always a source for concern as they hold the power to unilaterally change the regulatory framework.

A continent 'ready' to supply

Global LNG demand is rising fast, and so is supply. Last year's concerns that demand might be growing too slowly to cope with new supplies seem to have waned and strong demand growth boosted new life into liquefaction projects, especially in Africa, whose market share is poised to increase in the 2020s. Egypt, Nigeria, and Angola could easily add a potential extra 20 Mmtpa of supplies before 2025. Needless to say, Mozambique could add as much as triple that by 2030, with an extra advantage of being strategically located to supply both the East and the West. Furthermore, FLNG developments in both Cameroon and Mozambique have been a game changer, enabling smaller scale developments which are better suited to some African markets. If proven to be successful, they could boost other projects in the region, such as the Fortuna FLNG in Equatorial Guinea, halted since Q4 2017 when three Chinese banks pulled out their financial support, the Senegal/Mauritania discoveries, expected to be exploited and exported also using FLNG technology and any other stranded gas deposits that used to be previously unviable. Africa is ready to supply a lot more LNG to the global market and it could well be the case that last year's fears could actually come true.

Solar Mini-Grids Perpetuate World Cup Fever

In the village of Sidonge, a remote rural and off-grid community in western Kenya, the main street would come alive at night with locals crowding into their community video hall to watch the World Cup games on a large screen.

For most of the villagers, the video hall was the only way to catch the action and it was made possible because of a solar mini-grid, which generates affordable electricity. The power is supplied on a pay-as-you-go (PAYG) basis to the community by RVE.Sol (Rural Village Energy Solutions Lda.) who developed, owns and operates the Sidonge mini-grid. RVE.Sol is a social enterprise, which leverages renewable energy technologies and innovative micro-financing models to benefit some of the world's poorest communities.

Cleaner and affordable energy from the mini-grid is kick-starting social and environmental change in Sidonge, improving local living standards and enabling new services for the community including access to clean water, mobile phone charging, hair cutting and food processing.

Energy 4 Impact has been helping both RVE.Sol and several micro enterprises in the village to realize the full economic potential of the new source of power.

The advisory team worked with RVE.Sol to assess and identify ways to increase demand, as a way of improving the economic viability of the mini-grid.

"We helped micro entrepreneurs grow and diversify their businesses by leveraging their newly-acquired access to affordable energy. We offered advice on the most suitable electric appliances and facilitated financing through a Rockefeller-funded working capital facility that enables customers to buy machinery on credit," explained Diana Kollanyi, Advisory Program Manager, Energy 4 Impact.

One of these entrepreneurs, Esther Wanyama, sells fried chips and plantains and shares both shop and electricity with a neighbor who

Residents of Sidonge village in Busia watching a World Cup match on a mini-grid powered television

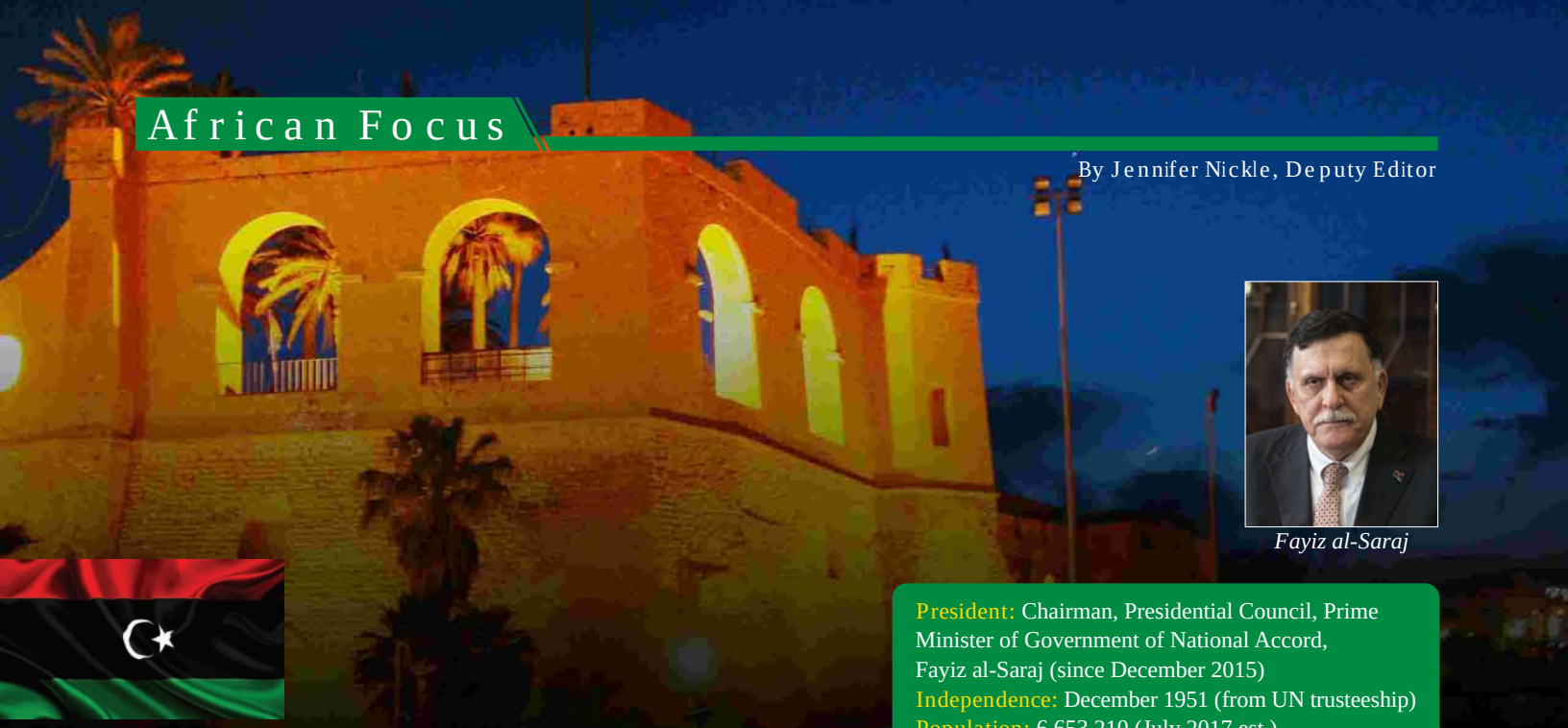
blends and sells fruit juices. "Before the grid, I was cooking my chips on a wood-fired stove," says Esther. "Now, I just plug in and fry and the chips are better quality. My business mentor at Energy 4 Impact helped me find ways to diversify my product range and increase my profitability and now my business is growing – all thanks to electricity."

"Mini-grids have the power to bring remote villages to life," says Stephen Nakholi, regional projects manager, RVE.Sol.

"They can kick-start economic growth by creating jobs and boosting livelihoods for people like Esther and they bring valuable social benefits too. The video hall in Sidonge is a new hub for the community and creates a real buzz, whether it's live sport or a blockbuster film. And at half time, hungry viewers can pop along the street and fill up with Esther's fresh chips, washed down with a juice from her partner."

Energy 4 Impact has been advising RVE.Sol on ways to scale up their business model and make it more attractive to investors. Recently, the company secured investment from the Green Mini-Grid Fund Kenya (funded by the UK's Department for International Development) to roll out more mini-grids in Kenya. They now plan to install 10 additional mini-grids in Kenya by end of 2018.

By Jennifer Nickle, Deputy Editor



Fayiz al-Saraj

LIBYA

President: Chairman, Presidential Council, Prime Minister of Government of National Accord, Fayiz al-Saraj (since December 2015)
Independence: December 1951 (from UN trusteeship)
Population: 6,653,210 (July 2017 est.)
GDP (purchasing power parity): $64.4 billion (2017 est.)
GDP - real growth rate: 70.8% (2017 est.)
GDP - per capita (PPP): $10,000 (2017 est.)
Head of National Oil Corp.: Mustafa Sanalla
Oil - production: 1 million bpd (August 2018)
Oil - consumption: 262,000 bpd (2015 est.)
Oil - proved reserves: 48.36 billion barrels (2017)
Natural gas - production: 11.6 Bcm/d (2015 est.)
Natural gas –consumption: 4.49 Bcm/d (2015 est.)
Natural gas - proved reserves: 1.5 trillion cubic meters

Source: CIA FactBook

Politics & Economy

Brief History

Berbers, Phoenicians, Greeks, Romans, Arabs, Italians, and one or two others throughout history have all played a part in shaping current day Libya. Today it is a mostly Arab country with Berber tribes still making their home in Libya.

In the first half of the 1900s Italy united the provinces as the colony of Libya and began increasing Italian migration in order to incorporate Libya into a Greater Italy. Like all countries with colonial masters, opposition to colonial rule eventually led to independence. For Libya this brought Libya under the rule of King Idris al-Sanusi in 1951. Under King Idriss' rule Libya began awarding oil and gas concessions and in 1961 a 104-mile pipeline, linking oil fields in the interior of the country to the Mediterranean Sea, was opened.

In 1969 King Idris was ousted in a military coup led by Colonel Muammar Qaddafi. Qaddafi ruled the country for the next four-plus decades until Libya fell victim to the Arab Spring taking place in the MENA region. Qaddafi was eventually brutally killed in the civil war to oust him and the country has been in turmoil since, with two separate governments battling for supremacy, along with numerous militias, wreaking havoc on recovery.

It has been roughly six years since the fall of Qaddafi and Libya remains in a chaotic state. The UN-backed government, formed in 2016, struggles to exert control over territory held by rival factions, intensifying geographical and political divisions between the East, West, and South. The country plays host to a surplus of terrorist groups and armed militias who exploit the turmoil, using the nation as a base for radicalization and organized crime, and has posed a threat to the North African region and beyond (*see Oil Security for an in-depth update*).

In the past year or so the security situation has improved, at least somewhat. It has allowed for Libya to get back to trying to raise petroleum production levels to support its budget. You will still see militant groups shutting in production in protest of this or that, but for the most part the government is learning to deal with these groups in order to keep revenues flowing. There was talk of hosting elections this year to establish an official government. The citizens of Libya have been calling for elections, with rallies held recently in several Libyan cities. The rallies were also in protest against deteriorating living conditions and poor services. The protesters voiced their support for holding elections in the country as advocated by the UN Mission in Libya. The presidential and parliamentary polls have been set for December 10.

Sabratha Platform offshore Libya

Economic Progress

Libya's economy, almost entirely dependent on oil and gas exports, has struggled since civil war broke out. The security and political instability, disruptions in oil production, and decline in global oil prices have all contributed to the struggle. The Libyan dinar has lost much of its value since 2014 and the resulting gap between official and black-market exchange rates has spurred the growth of a shadow economy and contributed to an increase in inflation.

The country suffers from widespread power outages, caused by shortages of fuel for power generation. Living conditions, including access to clean drinking water, medical services, and safe housing have all declined since 2011. Oil production in 2017 reached a five-year high at over 1 million bpd, driving GDP growth, with daily average production rising to 879,000 bpd. However, oil production levels remain below the average pre-Revolution highs of 1.6 million bpd keeping a crimp in the budget.

Faiez al Serraj, the head of Libya's internationally-recognized Presidential Council and Government of National Accord (PC/GNA) and other members of the PC/GNA are working on an economic reform program. A recent meeting was held as part of the follow-up to the "final steps of the economic reform program and the early commencement of its implementation." The economic reform plan for Libya was finally agreed upon by the contending Libyan parties at the Libya Economic Dialogue meeting in Tunis in June. It was the eighth meeting organized to try to get all of the Libyan parties to agree to a unified economic reform plan.

The meeting had agreed on four main economic measures designed to ease pressure on state spending and help alleviate the current economic burden on Libyan citizens, and especially the poorer sections of Libyan society. The reduction of subsidies on fuel and increasing its price from the current LD 0.15 a liter; the increase of the amount of the foreign currency annual allowance at the official rate of exchange, currently set at $500 per person; the reactivation of the child allowance which has been frozen due to lack of state funds; and the devaluation of the Libyan dinar.

Repairing the Petroleum Industry

Libya is the holder of the continent's largest oil reserves and the fifth-largest holder of Africa's proved natural gas reserves. With all this bounty the country was, at one time, near the top of the African producers list with crude flows upwards of 1.6 million barrels per day (bpd) and gas flows of just under 600 billion cubic feet per day (Bcf/d). As is well known, the struggle to oust long-time dictator, Muammar Qaddafi, followed by the civil war, has severely hindered production totals over the years. While the industry has seen a bit of a turnaround, there are still issues of strife which cause its flows to flounder.

At the end of August Libya clocked one million barrels per day (bpd). This is the highest level of production achieved since the beginning of 2018.This level of production was achieved thanks to the revival of production at the Sharara oil field, but also on the fields Amal and As-Sarah. The Sharara field alone can produce more than 300,000 bpd.The country has been seeing its production yo-yo since 2011 due to clashes around production facilities. Libya plans to exceed two million bpd by next year, but is still struggling to reach the pre-2011 level of more than 1.4 million bpd.

> "At the end of August Libya clocked one million barrels per day (bpd) … Libya plans to exceed two million bpd by next year but is still struggling to reach the pre-2011 level of more than 1.6 million bpd."

Despite the strife, protests, and production shut-ins experienced in the country, some operators are still working to increase their respective production totals and/or bring facilities back up to pre-civil war condition. The National Oil Corp. (NOC)/ENI joint venture (JV),

Mellitah Oil & Gas, has been the busiest E&P firm over the period. In November Prosafe, acting as commercial managers for the Axis Offshore-owned *Safe Swift*, was awarded a contract to support the Technip FMC managed, Mellitah operated, Bahr Essalam, Phase II development offshore Libya. The *Safe Swift* will operate a gangway connected to the Sabratha platform, which is situated approximately 110 km off the Libyan coast in a water depth of approximately 190 meters. The company also issued a tender for the overall integrated power management system (OIPMS) at the Mellitah Complex.

Source: Wintershall

As Sarah Field

Over the period the Mellitah complex and the connected Sabratha offshore gas platform, as well as the onshore Al Wafa gas field were closed for scheduled maintenance. The shutdown began on April 2 according to NOC. Following the maintenance Mellitah announced it would start a five-well drilling program at the Al Wafa field in September as part of its development project. The new wells will help in boosting gas production from the field. In a statement Mellitah said that the national company for digging and repairing oil wells has been contracted to do the major part of the job in coordination with contractors in what the company describes as localizing work and giving national firms priority in such projects.

Source: Mellitah Oil and Gas

The Wafa facility operated by Mellitah Oil and Gas

Despite the progress being undertaken by the Mellitah JV, there have been some setbacks. Most recently the Wafa-Mellitah gas pipeline was attacked by "unknown criminals" resulting in a pipeline fire. According to NOC, the fire was caused by rocket-propelled grenades, gasoline and burnt car tires. The pipeline connects Libya's Wafa field to the Mellitah complex. The fire was extinguished by the Mellitah Oil and Gas Co fire department and no significant damage to the pipeline was observed, NOC reported.

Recently Libya's Amal and As-Sarah oilfields in the east of the country resumed operations, and contributed to the country's export totals. Wintershall, which operates the NC-96 and NC-97 blocks including the As-Sarah field, has been locked in contract negotiations with the NOC since 2017 over the terms of their agreement. The Amal field, operated by Harouge Oil Operations, a joint venture of the NOC and PetroCanada, is now producing a raised output of 25,000 bpd.

Total moved to add to its holdings in Libya with the acquisition of Marathon Oil Libya Ltd. which holds a 16.33% stake in the Waha Concessions in the North African country. This acquisition will give Total access to reserves and resources in excess of 500 million boe. Not only does the acquisition add immediately to its reserves and resources, but adds instant production to its totals out of Libya. According to the company, it will see an additional 50,000 boepd and significant exploration potential across the area of 53,000 sq km covered by the concessions in Libya's prolific Sirte Basin. Total paid a consideration of $450 million for Marathon Oil Libya.

The Waha concessions currently produce around 300,000 boepd. Thanks to the ongoing restart of the existing installations and the resumption of development drilling, the output is expected to ramp up and exceed 400.000 boepd by the end of the decade. Partners on the Waha concessions are now NOC, Total, ConocoPhillips, and Hess Corp. The concessions are operated by Waha Oil Company, a 100% NOC-owned entity.

Earlier this year BP and Shell entered into new deals to buy crude from Libya, according reports. Shell's deal is the first of its kind since 2013. BP, which did not have a term deal in 2017, also reportedly reached an agreement for this year.

On the down side, the country saw a methanol plant in the oil port of Brega stop operations after an accidental explosion caused by a gas leak. One worker was injured by the explosion, state-run NOC said.

By Jennifer Nickle, Deputy Editor

Julius Maada Bio

Sierra Leone

President: Julius Maada Bio (since April 2018)
Independence: April 1961 (from UK)
Population: 6,163,195 (July 2017 est.)
GDP (purchasing power parity): $11.5 billion (2017 est.)
GDP - real growth rate: 3.5% (2017 est.)
GDP - per capita (PPP): $1,600 (2017 est.)
Minister of Energy: Alhaji Kanja Sesay
Oil - production: N/A
Oil - consumption: 7,500 bpd (2015 est.)
Oil - proved reserves: N/A
Natural gas - production: N/A
Natural gas –consumption: N/A
Natural gas - proved reserves: N/A

Source: CIA FactBook

Politics & Economy in Brief

What is now Sierra Leone was colonized by the British in the 17th century, establishing it as a colony in 1787. Following the American Revolution Sierra Leone became a destination for resettling black loyalists who had originally been resettled in Nova Scotia. After the abolition of the slave trade in 1807, British crews delivered thousands of Africans liberated from illegal slave ships to Sierra Leone, particularly Freetown. The British slowly expanded into the colony's interior during the 19th century setting up the borders that still exist today.

Sierra Leone became an independent nation in 1961 with Premier Siaka Stevens at the head of the government. Like many other newly independent nations, Sierra Leone's independence did not start off with peace and prosperity and in fact it took a number of decades for the country to achieve any semblance of peace. In 1967 Stevens was deposed in a military coup, only to return one year later as the head of a civilian government following another military coup. Stevens ruled the country until 1985 when he retired and Maj-Gen Joseph Saidu Momoh became president.

Six years into Momoh's rule a former army corporal, Foday Sankoh and his Revolutionary United Front (RUF) began a campaign against the president effectively starting Sierra Leone's first civil war. In an effort to placate the RUF, a new constitution was drafted establishing a multiparty system. In 1992 Momoh was ousted in a military coup led by Capt Valentine Strasser, apparently frustrated by his failure to deal with rebels. Four years later, Brigadier General Julius Maada Bio stage a coup of his own. Meanwhile Sankoh and his RUF are still causing mayhem across the country sacking villages and towns.

In 1996 Ahmad Tejan Kabbah was elected president and signed peace accords with Sankoh's rebels. Unfortunately for the country, the peace accords unravelled and Kabbah was deposed by the army in May of 1997. Major Johnny Paul Koroma, who had been in prison awaiting the outcome of a treason trial, led the military junta – the Armed Forces Revolutionary Council (AFRC). Koroma suspended the constitution, banned demonstrations and abolisheds political parties. What came next was one battle after another, with Kabbah collecting allies to aid him in returning to the presidency. The civil war saw more than one ceasefire and even UN intervention, but continued on for a number of years. In 2001 Sierra Leone finally achieved peace with the disarmament of rebels and the war being declared over in 2002. Kabbah returned to the presidency with a landslide victory. The military took over full responsibility for security following the departure of UN peacekeepers at the end of 2005.

Sierra Leone's most recent elections in March of this year ended in a runoff. The run off saw the All People's Congress (APC) candidate, Samura Kamara, face off against Julius Maada Bio of the opposition

Sierra Leone People's Party (SLPP). Neither candidate gained the 55% of votes needed to win outright during the March 7 election. The run off ended with the opposition candidate Bio winning by a narrow margin. The former military ruler Bio, who briefly ruled the country in 1996 as mentioned, was sworn in on April 4 in a Freetown hotel.

The civil war did nothing for the country's economy, although in 2006 it was reported that 90% of the country's $1.6 billion debt was written off after negotiations with international creditors. In 2012 the country caught a boon when oil and gas firms reported a discovery off its coast. Unfortunately, while the government was waiting for its oil and gas industry to kick off it experienced an outbreak of the Ebola virus which put its aspirations on hold and damaged the economy even further.

Currently nearly half of the working-age population engages in subsistence agriculture. In recent years, economic growth has been driven by mining, particularly iron ore. The country's principal exports are iron ore, diamonds, and rutile, which makes the economy vulnerable to fluctuations in international prices. Until 2014, the government had relied on external assistance to support its budget, but it was gradually becoming more independent. The Ebola outbreak of 2014 and 2015, combined with falling global commodities prices, caused a significant contraction of economic activity in all areas. In 2017 the country increased its iron ore exports, this, together with the end of the Ebola epidemic, supported a resumption of economic growth.

Continued economic growth will depend on rising commodities prices and increased efforts to diversify the sources of growth. Non-mining activities will remain constrained by inadequate infrastructure, such as power and roads, even though power sector projects may provide some additional electricity capacity in the near term. Pervasive corruption and undeveloped human capital will continue to deter foreign investors. Sustained international donor support in the near future will partially offset these fiscal constraints.

Petroleum Sector

Sierra Leone has no oil or gas production at this time and there has only been a limited number of wells drilled off its coast so far, with the majority of them being drilled within the past decade. US independent Anadarko Petroleum has been the most active offshore the country, drilling four wells over three years; the Venus B1 in 2009, the Mercury-1 in 2010, and the Jupiter-1 and Mercury 2 in 2012. The wells all saw varying degrees of success, but the company chose to eventually exit Sierra Leone to focus on other assets on the continent.

Source: Getech

Sierra Leone block map

Petroleum Directorate Responsibilities

1. Monitoring and supervising all Petroleum Industry operations under license to ensure compliance and congruence with international best practices
2. Marketing and promoting the petroleum potential of the country to the international investment community
3. Assessing prospective holders of Petroleum Licenses for the purposes of prequalification for participation in licensing rounds
4. Processing all applications for licensing of blocks and overseeing the participation of commercial entities in the sector
5. Reviewing all proposed reconnaissance, exploration and appraisal work plans, plans for development and operation; and complimentary budgets
6. Promoting and ensuring well planned and executed cost efficient operations
7. Maintaining and managing records on petroleum industry operations, including all types of petroleum data

Source: Petroleum Directorate, Sierra Leone

Talisman Energy (now Repsol) drilled a well in 2012, the Djembe-1 well. The well intersected more than 250 ft of good reservoir quality sandstones, in the targeted upper cretaceous interval that were water bearing. Talisman also chose to exit its acreage selling off to Lukoil. The last well drilled offshore Sierra Leone was spud in 2013 by the Russian firm. The Savannah-1X located in Block SL5-11 in the deep-water Savannah Structure, was drilled to 4,700 meters. It was Lukoil's first deep-water exploration well. Like Anadarko and Talisman before them, Lukoil also chose to exit the country.

Despite these companies exiting the country the government, through the Petroleum Directorate of Sierra Leone (PDSL) is optimistic about its future in the sector. The PDSL has the responsibility for regulating the upstream oil and gas sector, and ensuring that all operators conducting petroleum operations comply with the applicable Petroleum Legislation and any other regulation(s) or guideline(s) governing upstream oil and gas operations in Sierra Leone.

As part of its directive, PDSL officially announced the opening of the country's Fourth Licensing Round in January of this year. The PDSL and its partner Getech Group, through its wholly owned subsidiary ERCL, invited the international oil and gas community to participate in this round. Helping to determine the potential of the offerings is the successful collaboration with TGS Nopec, which gave PDSL ownership of a series of 3D seismic surveys acquired by TGS under a multi-client agreement. The surveys include the Blocks 4 & 5 survey (2008), the Blocks 3, 4A, 4B / 4A Extension (2011 /14), and the merged Fusion 3D dataset. These surveys are now available to view at the Data Room in PDSL offices in Freetown and available to license by companies wishing to evaluate the exploration prospectivity.

The licensing round is offering up five areas covering 31,653 sq km in deep and ultra-deep water. According to reports, ExxonMobil has already pre-qualified as an operator, and BP, Kosmos Energy, and 10 other companies have visited Sierra Leone to evaluate existing data.

Sierra Leone's previous licensing round in 2012 saw offshore blocks awarded to 11 companies all of which chose not to renew their initial licenses due to the slump in oil prices at the time. The government has terminated other contracts with companies for not fulfilling minimum license obligations. Currently, only African Petroleum and its subsidiary European Hydrocarbon currently hold the only two licensed offshore blocks in Sierra Leone.

In December 2017 African Petroleum's wholly owned subsidiaries European Hydrocarbon Ltd. and African Petroleum Sierra Leone Ltd. signed agreements with the PDSL to enter into the second extension periods of the SL-03 and SL-4A-10 licenses respectively. The work programs on the licenses were also modified. The second extension period expires on April 23, 2019 for the SL-03 and on September 17, 2019 for the SL-4A-10 should the subsidiary companies commit, prior to November 1, 2018 to drilling one exploration well in each license area during the remaining term of the respective license. Over the rest of 2018 the companies will be utilizing state-owned well and seismic data, together with existing seismic data, to further derisk the licenses prior to deciding to commit to the drilling of an exploration well on each license. The modified work program agreed approved by the PDSL calls for minimum expenditure requirements on the two licenses, and to defer the social obligations of the two licenses contingent on the drilling of an exploration well on each license.

ERC Equipoise (ERCE) was engaged to prepare an updated assessment of prospective oil resources attributable to its Sierra Leone assets. The ERCE letter of prospective resources includes six undrilled prospects and estimates the net prospective oil resources relating to the Sierra Leone licenses give the company a76% increase in its resources. The upgrade takes into account two new material prospects identified by African Petroleum; the Leo and the Vega. Pursuant to the company's commitments on the licenses, African Petroleum will, on conclusion of further assessment with ERCE, provide PDSL with confirmation of its drilling program ahead of the notification deadline of October 31, 2018 for both SL-03 and SL-4A-10. The company is actively seeking a partner for its assets in the country.

President Akufo-Addo Sacks Agyarko

Ghanaian President Nana Akufo-Addo has fired his Energy Minister, Boakye Agyarko, a statement from the presidency said, giving no official reason.

Source: Presidency.gov

President Akufo-Addo

Press reports said Agyarko was removed because Akufo-Addo was unhappy with his handling of certain power agreements. According to a Reuters report, the president was upset with Agyarko's agreement with AMERI Energy extending its five-year deal to operate a 300 MW emergency power plant.

The deal has been controversial in Ghana, with critics unhappy with the more than half-a-billion-dollar price tag.

Akufo-Addo asked Agyarko to hand over his office to the Minister of Lands and Natural Resources, John Peter Amew, until a new appointment is made, the statement said.

WEC and COMESA Sign Historic Energy Pact

The World Energy Council has signed a historic agreement with the Common Market for Eastern and Southern African (COMESA) to drive regional energy integration and enhance sustainable energy access in all 21 of the COMESA states.

The Memorandum of Understanding cements cooperation between the Council and COMESA and will spearhead the regional energy agenda in Africa, with the aim of promoting economic growth, intra-regional trade and infrastructure development. The Council is among the few global energy platforms that has a strong presence in Africa.

Key challenges identified by the Council's members in Africa include low level of access to modern energy, weak development of energy infrastructure, lack of financing and investment and low-level trade and energy.

Guided by the Council's "Energy Trilemma, Scenarios and World Energy Issues Monitor" insights, the joint declaration includes a framework which seeks to address these issues by promoting energy trade and identifying innovative business models, in addition to policy and regulatory solutions relevant to the energy transition.

The objectives will be achieved through engagement and debate between COMESA and the Council's national member committees, development of joint energy scenarios within the region, workshops, staff exchange programs and the roll out of priority projects.

Egypt Sentences 73 to Death by Hanging

Seventy-three 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 office 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.

Human Rights Group Files Complaint Against San Leon

The Global Legal Action Network (GLAN) submitted a formal complaint against Irish firm San Leon Energy PLC for violating the human rights of the people of annexed Western Sahara. It is alleged the company failed to ensure the consent of the Western Saharan people before drilling for oil on their land.

San Leon has operations in areas of Western Sahara controversially seized by Morocco during the mid-1970s. As the company is headquartered in Dublin, the legal complaint was made to Ireland's National Contact Point (NCP) for the Organization for Economic Cooperation and Development (OECD), which oversees corporate human rights issues.

GLAN's complaint is supported by three non-governmental organizations from Western Sahara: the Sahrawi Campaign Against the Plunder (SCAP), the Association for the Monitoring of Resources and for the Protection of the Environment in Western Sahara (AMRPENWS) and the Sahrawi Committee for the Protection of Natural Resources (CSPRON). GLAN's complaint is also supported by the Polisario Front – the international representative of the Sahrawi people.

GLAN asserts that international law categorically requires companies like San Leon to comply to ensure that any business dealings in the Western Sahara can only occur with the prior consent of the Sahrawi people. This requirement for consent was applied by the Court of Justice of the EU in cases dealing with EU-Morocco relations in 2016 and 2018. San Leon has, by its own admission, failed to comply with this basic legal requirement and has publicly referred to the territory as Morocco's 'Southern Provinces'.

Kabila says No to Re-election Bid

Joseph Kabila, president of the DRC, has said he will not stand for re-election in December. Kabila's ruling coalition has put forth Emmanuel Ramazani Shadary, former interior minister, as its presidential candidate according to Lambert Mende, government spokesman.

Source: US Department of State

Joseph Kabila

The move by Kabila puts an end to speculation that the president would defy the country's constitutional term limits. The government waited until the last moment to announce Kabila's decision not to run. The electoral commission had imposed an August 8 deadline for candidates to register.

Kabila's decision not to run has been hailed by a number of international authorities as a big step."Congo's regional and international partners must continue to exert strong pressure for the country to have a truly democratic transition and to prevent further repression," said Ida Sawyer, deputy Africa director at Human Rights Watch.

Tunisia Sacks Energy Officials

Tunisia, in a crackdown on corruption, saw Prime Minister Youssef Chahed remove the Minister of Energy, Khaled Kaddour, and four other senior officials linked to that Ministry. Chahed ordered the merger of the Ministries of Energy and Industry and launched an investigation into corruption accusations, an official source told Reuters.

There was no immediate comment from Kaddour – the first minister targeted in a crackdown on corruption that Chahed launched

last year. Until recently, only mid-level officials had lost their jobs.

Another official dismissed was the Secretary of State for Energy, Hachem Hmidi. Hmidi denied the accusations leveled against him. "My exit from the government helps me to devote myself to the case and prove that I am innocent of these malicious charges," he was cited as saying in the Reuters report.

Keita Wins Mali's Presidential Run-Off Election

Malian President Ibrahim Boubacar Keita won a second-round election runoff "comfortably," with 67% of the vote, and will have a second term to try and stem the surge of ethnic and Islamist militant violence.

The opposition claimed fraud and cheating by the Keita campaign. However, while EU observers said that there were someir regularities, they did not note any fraud.

The ballot pitted Keita against opposition leader Soumaila Cisse after an inconclusive first round of voting in July when Keita won about 41% of the ballot.

South Sudan Reaches Peace Deal

A peace deal was reached between the president of South Sudan and head of the country's main rebel group. The two signed a final cease fire and power-sharing agreement on August 5.

"I call on everyone as a leader of South Sudan that this agreement which we have signed today should be the end of the war and the conflict in our country," said President Salva Kiir.

Riek Machar, former VP and rebel leader of the country said after the signing, "today we celebrate, not just in South Sudan, but throughout the world." The conflict has killed tens of thousands, displaced an estimated quarter of South Sudan's population of 12 million and ruined its economy that heavily relies on crude oil production.

"An agreement on outstanding issues has been signed and this agreement expresses the commitment of all parties to a ceasefire," the foreign minister of neighboring Sudan, Al-Dirdiri Mohamed said on Sudan state television. Sudan helped broker the agreement.

Former DRC VP Returns Home

Jean-Pierre Bemba, former vice president and ex-rebel leader, returned to the capital, Kinshasa, after 11 years in exile and prison. Pemba saw his war crimes conviction overturned by the International Criminal Court in June.

Pemba told a crowd of cheering supporters that he intends to run in the December elections. Meanwhile, authorities say he is not eligible because of a criminal conviction. Pemba will appeal.

Keter Says Garissa Solar to Commission Early

Kenya's Energy Minister, Charles Keter, revealed that Kenya will see the commissioning of the Garissa solar power plant in September. The commissioning will take place three months ahead of schedule.

"We are ahead of schedule and by September the plant can supply power to the grid. In addition, the purchase price of its production was reduced to 5.4 cents per kilowatt hour," said Keter.

The 55 MW power plant will provide enough electricity to power 625,000 households. Its construction is carried out by China Jiangxi International Kenya Ltd., with the financial support of the Exim Bank of China.

Cocoa to Power Cote d'Ivoire

The world's number one cocoa producer in the world, Côte d'Ivoire, is set to use its top crop to boost power generation. The country produces around 2 million tons of cocoa each year, and in turn, thousands of tons of pods that are burned after harvest. The country is planning to build a power plant that uses those pods as biomass to produce energy.

The project will have a capacity of between 60 and 70 MW and will be the first project in an initiative to add 424 MW of additional capacity through biomass.

Source Keith Weller, USDA ARS [Public domain], via Wikimedia Commons

This first plant will be located in the Divo region in the south-east of the country. Its implementation is accompanied by the US Agency for Trade and Development (USTDA) which granted nearly $1 million for feasibility studies.

Wind-Powered Blockchain Infrastructure for Morocco

Soluna is building wind-powered blockchain computing infrastructure in Morocco. According to the company this a clean and sustainable alternative to the current cryptocurrency mining approach.

The firm plans to develop its own 900MW wind farm power plant in Morocco and combine it with the company's private computing facilities to help power the blockchain in a more eco-friendly and sustainable way.

The increase in popularity and widespread usage of blockchain has come at a cost: according to *Digiconomist*, Bitcoin mining used approximately 71TWh per year, equivalent to almost 10% of China's annual energy usage, representing an unsustainable growth in demand on the world's energy resources.

In response to this ever-growing problem, Soluna aims to be the world's first utility-scale blockchain infrastructure company powered by its own private renewable energy sources.Soluna plans for the energy systems and computing facilities to be self-contained, distributed, scalable, and flexible.

The firm explained in a statement that the project site covers 37,000 acres in southern Morocco with over 900MW of wind power potential. It is a Class I wind site, where wind speeds reach over 22 miles per hour, making it one of the highest quality wind sites in the world.The wind farm will be an off-grid design with the plan to integrate it with the grid at a later date.High voltage transmission lines are expected to reach the site by mid-2019. If it is not connected to the grid, Soluna's site will be one of the largest off-grid operations.

ENGIE to Build 8 Hybrid Solar Power Plants in Gabon

ENGIE has signed an agreement with CDC, the Gabonese financial institution Caisse des Dépôts et Consignations, to deploy eight hybrid solar power plants in Gabon, representing a combined capacity of 2.2 MW.

The implemented solution was developed by ENGIE's subsidiary, Ausar Energy in collaboration with CDC, the Gabonese Ministry of Energy, and the Gabonese energy and water company Société d'Énergie et d'Eau du Gabon (SEEG) and means that solar energy can be used in eight locations that are currently supplied by oil-fired thermal power stations.

With construction set to begin in a few weeks, this project will contribute to the Gabonese Republic's proactive policy of using renewable energy – solar and hydropower – to increase the country's energy capacities. The project will save the country 1 million litres of fuel oil per year, or 2,600 tonnes of CO_2, and reduce generation costs by 30%.

Ausar Energy offers the African continent a hybrid solar power plant solution, with or without storage facilities, with capacities ranging from 50 kW to 2.5 MW. This solution is in line with ENGIE Group's strategy of promoting decentralized generation and distribution of electricity from renewable sources. This strategic priority is designed to ensure continuous access to energy in isolated areas that are not and cannot be connected to grids, as well as to limit the consumption of fuel oil, manage costs and reduce pollution

Total Partners with Solergie in Togo

In Togo, French firm Total has partnered with Solergie to provide Togolese people a new power solution based on solar energy, SolergieBox. This is a 220V system whose capacities can be increased depending on customers' needs.

Solergie's Managing Director, Marie Dominique Lodens commenting on the development said: "SolergieBox is a solar-based power system that generates 220V for up to 8 people. Each of these has access to his or her own box and own meter".

Source: Solergie

"By paying CFA15,000, each customer gets access to an installation enabling connection to two rooms with one lamp, a socket and a switch respectively, and CFA5000 of power credit. Solergie will take care of the connection part and guarantees maintenance and repair on the box," added Bert Bernolet, CEO Solergie.

According to Adrien Bechomet, managing director Total Togo, venturing into renewables was driven by "pertinence of investments in clean energy and its socioeconomic impact, in rural areas particularly".

At the end of this year, Solergie expects to install 240 SolergieBoxes and 3,000 by end-2023, impacting 24,000 households which is more than 200,000 people.

Ghana to Pursue Nuclear Ambitions

Ghana aims to start construction on its first nuclear power plant in 2023 and put it into service by 2029, according to Robert Sogbadzi, the deputy

director of the Nuclear Energy Directorate. Sogbadzi said that the directorate will publish a white paper on its nuclear program soon.

"We are looking for clean energy, so we can meet energy demand in the future. We have looked at renewables, but also thermal and nuclear because industrial development is about providing reliable and affordable energy," said Sogbadzi.

Ghana already has a nuclear station mainly used for research, development and creation of isotopes for health purposes.

AfDB Approves Financing for Zambian Small-Scale RE Projects

The Board of Directors of the AfDB has approved $50 million framework financing for small-scale renewable energy projects in Zambia. The financing is to help diversify Zambia's energy generation currently heavily reliant on hydro-electricity.

Facing a serious electricity supply deficit due to recent droughts, Zambia's government launched the Renewable Energy Feed-in-Tariff (REFiT) policy in 2017 to crowd-in private investments for small-scale (up to 20 MW) renewable projects. The "Global Energy Transfer Feed-in Tariffs" (GETFiT) Zambia Program has been designed to facilitate the implementation of the REFiT Policy.

The framework aims to finance 100 MW of renewable energy projects, primarily solar PV, to be selected under the GETFiT Zambia Program. This is the first program that will be co-financed by the Green Climate Fund (GCF) and the AfDB following the signing of the Accreditation Master Agreement on November 8, 2017 between the two institutions, making the bank a credited implementer of GCF-approved projects. The Board of the GCF approved $52.5 million for the framework during its 19th Board Meeting in February 2018.

"This is an innovative financing framework that enables the transition to sustainable energy in Zambia, and an important milestone in our partnership with the GCF," said the African Development Bank's Vice-President for Power, Energy, Climate and Green Growth, AmadouHott.

WB Approves Nigerian Power Plant Guarantee

The World Bank has approved $150 million as a partial risk guarantee and environmental impact assessment (EIA) on a 540-MW Nigeria power plant. The plant, the Qua Iboe Power Plant (QIPP), is set to begin construction in Akwa Ibom, Nigeria's oil-rich south-south state, said Black Rhino group, operator of the project.

The QIPP is being jointly developed by the African Infrastructure Company (AIC), Black Rhino Group, Dangote Group, and Nigeria's state oil company, the NNPC.

The gas-fired power plant is expected to cost some $1.1 billion and is expected to unlock investment in transmission infrastructure, including a new 58-km transmission line to be built by QIPP, Black Rhino said.

New Wind Power Plant for Mauritania

Elecnor, out of Spain, was awarded the contract to develop the second wind power plant in Mauritania. With a capacity of 100 MW, the Boulenouar wind power plant will be located in Dakhlet Nouadhibou.

Source: Elecnor

Its implementation cost was estimated at €122 million and is funded by the Arab Fund for Economic and Social Development (AFESD).

The wind farm will be built by a consortium of Siemens and Gamesa Renewable Energy, which will supply, among other things, wind turbines. Elecnor will take care of the engineering, construction and commissioning of the plant. An operating and maintenance contract, lasting 11 years, is scheduled to be signed later. Construction is scheduled to be completed by Q4 2019.

The country's first wind power plant was inaugurated in 2015. With a capacity of 30 MW, it is located in the city of Nouakchott.

Independent E&P Companies				
Company	Ticker Symbol	Currency	One-month Percent Change	Price as of August 20
Hyperdynamics	HDYN	USD	407.10%	0.0355
ERHC Energy	ERHE	USD	50.00%	0.0003
Pancontinental Oil & Gas	PCL.AX	AUD	50.00%	0.009
Bowleven plc	BLVN.L	GBP	-29.50%	28.20
Groundstar Resources	GSA.V	CAD	-25.00%	0.015
VAALCO Energy	EGY	USD	-24.90%	2.29

Shell in Talks with Heirs Holdings for Nigerian Assets

Shell is in talks with Nigerian indigenous firm Heirs Holding, in connection with the sale of its OML 11 and OML 17. According to a report from *The Financial Times*, the assets are worth an estimated $2 billion.

The assets also include transportation infrastructure and a natural gas-fired power plant that would be managed by Transnational Corp. of Nigeria. This divestment, if concluded, will reduce Shell's presence in the country, particularly in the Niger Delta where it is one of the largest oil and gas producing companies.

Swala Tanzania Halts Share Trading on DSE

The industry should expect to see news from Swala Oil & Gas (Tanzania) in the near future. The company had its securities on the Dar es Saalem Exchange (DSE) placed in Trading Halt, pending the release of an announcement in relation to a third-party equity investment.

According to the company, discussions with the prospective investor remain at an early stage and there is no certainty that a transaction will be completed. At press time the shares were still in trading halt on the DSE, where the company is listed under the ticker symbol SWALA.

In addition, the Stock Exchange of Mauritius (SEM) has approved the company's Listing Prospectus, allowing the listing of its $50 million Corporate Bonds. Swala first announced the move to Mauritius on July 2. The company and its advisors intend to proceed to finalizing the financing for the second and third tranches of the transaction with Orca Exploration Group Inc.

COPL Sees Project Funding in Nigeria

Canadian Overseas Petroleum's (COPL) 50% owned JV company, Shoreline Canadian Overseas Petroleum Development Corp. (ShoreCan), received and agreed to a project financing and offtake agreement term sheet, providing for a minimum $30 million to a maximum of $50 million Senior Secured Facility, for investment by ShoreCan into its 80% owned affiliate Essar Exploration and Production (Nigeria) from The Mauritius Commercial Bank (MCB) and Trafigura.

Drawing on the Facility is contingent on a number of things including ShoreCan receiving an additional $20 million to $33 million of funding and another $100 million in funding from an offshore oil services group to deliver the project. The Facility is also contingent on a minimum of 6,000 bpd production rate averaged over a 20-day period and the execution of a formal definitive binding agreement between the parties.

Other material terms of the proposed Facility include the following: Two-year term to maturity; and a grant to the lenders of $3 million worth of warrants to purchase COPL common shares for two years with an exercise price equal to the market price of the COPL common shares on the date of closing of the Facility.

Gibdock Achieves ISO 45001:2018 Certification

Gibdock has underlined its commitment to Occupational Health & Safety by becoming the first shipyard in the Mediterranean region, and one of the first companies worldwide, to achieve ISO 45001:2018 certification.

An audit by LRQA completed on July 6 confirmed that the Gibraltar shipyard is fully compliant with the requirements of the new ISO standard, which was only published in March this year. ISO 45001:2018 replaces the previous standard, OHSAS 18001. Organizations certified to OHSAS 18001 have three years to migrate to the new standard before the old one is withdrawn in March 2021, but Gibdock decided to transition at the earliest possible opportunity.

Emerson Named IIoT Corporate Leader

Emerson was named the IIoT Corporate Leader of the Year by McRock Capital. The award recognizes Emerson's unique and successful deployment of Industrial Internet of Things (IIoT) solutions.

Emerson's IIoT solutions have been deployed extensively across the globe helping manufacturing industries including oil and gas, life sciences, chemical, power, food and beverage, and more to improve efficiency, performance, and safety.

IIoT awards recognize leaders and visionaries around the globe who drive IIoT innovation. Nominations are screened by an independent selection committee and evaluated on senior leadership support for IIoT, demonstrated success implementing IIoT solutions, and continuous work with IIoT technology companies. The award was presented at McRock Capital's IIoT Symposium recently.

NCDMB Calls on O&G Firms to List on NSE

The Nigerian Content Development and Monitoring Board (NCDMB) is calling on more oil and gas firms operating in the country to list on the Nigerian Stock Exchange (NSE). While the exchange trades shares for a number of petroleum marketers, oil and gas firms are few and far between.

The Executive Secretary, NCDMB, Simbi Wabote made the call when he led the management of the board on a visit to the NSE to perform the Closing Gong Ceremony in Lagos. Wabote said that he would like to see more upstream and mid-stream companies listed on the exchange.

Maersk Drilling to Become Standalone Firm

AP Moller-Maersk is moving forward with a demerger of its drilling unit, Maersk Drilling. The demerger is being pursued via a separate listing of the drilling unit on Nasdaq Copenhagen in 2019.Maersk Drilling will continue to operate under the name 'Maersk Drilling', on which its global leading market position is built and recognized, using the A.P. Moller – Maersk seven-pointed star-logo as part of its brand.

A company statement said that after evaluating different options for Maersk Drilling, it concluded that the listing of Maersk Drilling as a standalone company presented the most optimal prospects for its shareholders, offering them the opportunity to participate in the value creation of an industry

Drilling & Service Companies				
Company	Ticker Symbol	Currency	One-month Percent Change	Price as of August 20
Prosafe	PRS.OL	NOK	46.00%	27.75
Fluor	FLR	USD	13.70%	57.32
KBR Inc	KBR	USD	12.90%	21.13
ION Geophysical	IO	USD	-32.90%	17.20
Flotek	FTK	USD	-28.80%	2.17
Weatherford International	WFT	USD	-19.30%	2.80

leading pure play offshore drilling company with long-term development prospects.

Maersk Drilling has achieved an industry leading backlog of $2.7 billion with long-term customer relations counting some of the world's most successful and innovative oil and gas companies. Competitive long-term debt financing of $1.5 billion has been secured from a consortium of international banks to ensure a strong capital structure after a listing.

Kosmos to Acquire a GoM Exploration Firm

Kosmos Energy entered into an agreement to acquire Deep Gulf Energy (DGE) from First Reserve and other shareholders for a total consideration of $1.225 billion, subject to certain adjustments.

DGE holds acreage in the Gulf of Mexico. By acquiring DGE, Kosmos adds to its deepwater Atlantic Margin portfolio an established business with attractive assets and a strong record of growing production and reserves through infrastructure-led exploration.

This immediately accretive acquisition enhances the scale of the company and is expected to generate significant free cash flow, enabling Kosmos to return cash to shareholders through a dividend, beginning in the first quarter of 2019.

Angola's New Oil Agency Now Official

The news reported by *Petroleum Africa* on August 21 that Angola's President João Lourenço planned to establish a new national agency to undertake the management and sales of petroleum concessions in the country has been made official by a Presidential Order. By means of Presidential Order No. 112/18, of August 24, 2018, the president appointed the Steering Committee of 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.

Baru Comments on NNPC Third-Party Financing

Maikanti Baru, the MD of NNPC, restated that the state-run firm signed third party financing deals with international banks to the tune of $3 billion for the development of the oil and gas industry.

Baru said: "We have signed third party financing deals with the international banks and new oil and gas development worth $3 billion despite the degradation in 2016 and 2017. This demonstrates the phase in our industry and the potentials we can unlock … We also executed a noble and micro-financing bill of over $700 million from Schlumberger for the development of the 250 million barrels of oil equivalent per day from 165 million barrels of oil under the joint venture investment exploration and production."

The NNPC MD also said that in the near-to-medium term the state-run firm intended to focus on raising first access base lending for NPDC, its upstream subsidiary. "For the owners, where it has JVs with the indigenous producers, the NNPC also has a goal to incorporate bonds and other long-term maturing assurances to the funding means. For the IOCs partners, we would continue to leverage the strong credit rating of these partners, identifying key quickening projects that are easy to mature with strong cash flow projections and attracts necessary funding the debt market.

"These attracting financing approaches to fund NNPC JVs obligation have helped to renew investor's confidence and cement further foreign direct investment. In particular, this has opened local banks participation in the financing of the upstream as the financing are syndicated from local banks and international lenders," Baru said.

Baker Hughes Sells Natural Gas Solutions Business

Baker Hughes, a GE company (BHGE), has reached an agreement to sell its Natural Gas Solutions (NGS) business to two separate entities, First Reserve and Pietro Fiorentini S.p.A.

The sale has a combined value of $375 million. NGS is part of BHGE's Turbomachinery & Process Solutions (TPS) segment, providing commercial and industrial products such as gas meters, chemical injection pumps, pipeline repair products and electric actuators.

The transactions consist of BHGE selling its NGS product line to First Reserve, a leading global private equity investment firm, focused exclusively on energy. This transaction includes the transfer of approximately 450 employees located in eight countries, including three manufacturing sites in North America and the UK.

In a separate transaction, BHGE has agreed to sell the Talamona branch of its NGS product line to Pietro Fiorentini S.p.A. The transaction includes the transfer of approximately 40 employees and a manufacturing site in Talamona, Italy.

Both transactions are expected to close in H2 2018, subject to customary closing conditions and appropriate regulatory approvals. BHGE will work closely with the buyers to ensure a seamless transition for impacted employees, customers and suppliers. Financial terms of the individual agreements were not disclosed.

Halliburton Acquires Athlon Solutions

Halliburton has acquired Athlon Solutions, LLC, a leading provider of specialty water and process treatment chemicals, customized engineering solutions, and services. Athlon will become part of the Halliburton Multi-Chem business line, a provider of specialty oilfield chemicals for stimulation, midstream, and production customers.

Combining the two companies will strengthen Halliburton's chemicals technology, manufacturing, and supply chain. Additionally, the acquisition enhances Multi-Chem's capabilities to deliver innovative technical solutions to its customers and provides

Major E&P Companies

Company	Ticker Symbol	Currency	One-month Percent Change	Price as of August 20
ENI	ENI.MI	EUR	0.01%	16.20
ConocoPhillips	COP	USD	-0.16%	71.33
BP	BP.L	GBP	-2.60%	552.40
Engie	ENGI.PA	EUR	-6.90%	13.16
Chevron	CVX	USD	-5.60%	118.89
Royal Dutch Shell	RDSA.L	GBP	-3.50%	2506.00

Halliburton with its first chemical manufacturing plant with full reaction and blending capabilities.

Neptune Energy to Acquire UK Central North Sea Assets

Neptune Energy Group (Neptune) entered into a Sale and Purchase Agreement to acquire certain development and exploration assets in the UK Central North Sea from Apache North Sea Limited.

Neptune will acquire Apache's 35% working interest in the Seagull development and a 50% working interest in the Isabella prospect; both operated by ANSL. The proposed transaction is subject to the customary regulatory approvals, with completion expected this year.

The transaction follows Neptune's announcement in June to acquire VNG Norge's portfolio of production, development and exploration assets on the Norwegian continental shelf, and demonstrates Neptune's commitment to the UK Central North Sea.

Competition Commission Green Lights Glencore Bid

South Africa's Competition Commission has given the green light to Glencore's $900 million bid for Chevron's southern Africa assets. The go ahead from the commission could leave China's Sinopec, who was the first bidder for the assets and also received approval from the commission, out in the cold.

Chevron agreed last year to sell its stake to state-owned Sinopec until Glencore and minority shareholders, who backed it and exercised preemptive rights on the sale, submitted a bid. The minority shareholders are what could give Glencore the edge.

At stake is a 75% share in Chevron's South African subsidiary that runs a 100,000 bpd oil refinery in Cape Town, a lubricants plant in Durban and 820 petrol stations and other oil storage facilities. The sale also includes Chevron's 220 convenience stores across South Africa and Botswana.

While both deals have now been given the green light from the Competition Commission, they are subject to several conditions that include the preservation of jobs after the deal. The deals will now go to the Competition Tribunal, which makes the final ruling on deals, to decide whether to accept the commission's recommendations. The Tribunal already approved Sinopec's bid.

ETAP Celebrates 20 Years of Production

One of the North Sea's most ambitious and complex developments has turned 20, BP's Eastern Trough Area Project (ETAP). According to a BP release, celebrating the milestone the ETAP North Sea development has been labelled by Oil & Gas Authority (OGA) as the "poster child" for its Maximizing Economic Recovery (MER UK) strategy.

Source: BP

ETAP comprises multiple fields with varying ownership arrangements sharing a central processing facility (CPF). At the time of development, the individual reservoirs were not deemed to be commercially viable on a stand-alone basis, so the ETAP alliance was formed to develop the fields as one joint development.

It came on stream in July 1998 with an estimated production life of 20 years. However, a $1 billion investment program in 2015 breathed new life into the hub, securing its future well into the 2030s.

Initially seven fields, four operated by BP and three by Shell produced through the CPF. Two further BP-operated fields came online four years later in 2002, bringing the total number of fields producing through the CPF to nine. Two of the Shell fields have since ceased production. Day-to-day production operations of the remaining seven ETAP fields are controlled by BP from the CPF.

In its two decades of operations thus far, more than 550 million boe been produced from the BP-operated ETAP fields.

Barikewa-3 Hits Gas in PNG

Oil Search's Barikewa-3 well onshore Papua New Guinea's (PNG) Forelands region has encountered 25 meters of net gas pay in the Toro and Hedinia reservoir objectives. Reservoir quality exceeded pre-drill expectations and the appraisal well successfully intersected a gas-water contact in the Hedinia.

A DST was carried out across the Toro interval at 1,729 to 1,743 meters and flowed gas to surface at 35 Mmcf/d on a 68/64" choke. On-site analysis of the gas from the DST and earlier wireline sampling confirms a dry gas with approximately 20% nitrogen and very low levels of other impurities, in line with pre-drill expectations.

The well, in petroleum permit PRL9, reached total depth of 1,943 meters and will be plugged and abandoned as planned upon completion of the test and data retrieval.

Petrofac Wins Majnoon Award

Petrofac was awarded a contract worth $370 million by the Basra Oil Company for the expansion of the central processing facility (CPF) on the Majnoon field in southern Iraq.

Under the terms of the 34-month contract, the lump-sum EPC project scope of work includes two oil processing trains, able to process 200,000 bpd.

Petrofac was previously awarded a contract in 2011 and delivered engineering, procurement and construction management for the execution and completion of the existing CPF at Majnoon.

Calder Wins Supply Contract from Rosenberg WorleyParson in North Sea

Rosenberg WorleyParson AS has awarded a contract to PG Flow Solutions subsidiary Calder Ltd to supply a MEG pump package to the Nova tie-back to Gjøa project. The Norwegian EPCI contractor is responsible for the upgrade on the Gjøa platform in the North Sea.

Wintershall as the operator of Nova has decided to develop the field with two subsea modules tied back to the Gjøa platform, which is operated by Neptune Energy. Rosenberg WorleyParsons is responsible for the engineering, procurement, construction, installation and commissioning (EPCIC) of the Nova topside module on the Gjøa platform.

Operating as a subcontractor to Rosenberg WorleyParsons, liquid handling and pump specialist Calder will deliver a MEG (mono ethylene glycol) package that consists of several high-pressure pumps including MEG subsea injection pump, MEG jockey pump, MEG topside injection pump and MEG booster return pump plus spare parts for installation, commissioning and start-up.

The MEG package will be engineered, assembled and skid mounted at Calder's facility in Worcester, UK, and subsequently delivered to Rosenberg WorleyParson's yard in Stavanger, in the first quarter of 2019. The successful bid was a joint team effort between PG Flow Solutions operations in Sande, Norway, and Worcester, UK.

Nova was discovered in 2012 and is situated in the north-eastern North Sea approximately 20 km southwest of the Neptune-operated Gjøa platform and about 120 km northwest of Bergen.

Guyana's Stabroek Resources Increased

ExxonMobil and Hess Corp. both announced an increase in the estimate of gross discovered recoverable resources on the Stabroek Block offshore Guyana. The increase has taken the recoverable resources from 3.2 billion boe to more than 4 billion boe.

The increase follows completion of testing at the Liza-5 appraisal well, a discovery at Ranger, incorporation of results from the eighth discovery on the Block at the Longtail exploration well into the Turbot area evaluation, and completion of the Pacora discovery evaluation. This evaluation supports a third phase of development and consideration of two additional phases. There is potential for additional development phases from significant undrilled targets and plans for rapid exploration and appraisal drilling, including at the Ranger discovery.

The Liza phase 1 development sanctioned in June 2017 is progressing rapidly. Development drilling began this May and construction of the FPSO and subsea equipment is under way, laying the foundation for first production of a gross 120,000 bpd by early 2020. Phase 2 of the Liza development, which is targeted for sanction by the end of this year, will use a second FPSO with gross production capacity of approximately 220,000 bpd – start up for Phase 2 is expected by mid-2022.

The Liza-5 well, which successfully tested the northern portion of the Liza Field, along with the giant Payara Field will support a third phase of development in Guyana. Planning is underway for this third phase of development, which is targeted to be sanctioned in 2019 and will use an FPSO designed to produce approximately 180,000 bpd, with first production as early as 2023.

The Longtail discovery established the Turbot-Longtail area as a potential development hub for recovery of more than 500 million barrels of oil equivalent. Additional prospects to be drilled in this area could increase this estimate.

The collective discoveries on the Stabroek Block to date have established the potential for up to five FPSOs producing over 750,000 bpd by 2025.

McDermott Wins Perdido Work

Shell Exploration and Production Company awarded McDermott International a contract for subsea umbilical and flowline installation at Shell's Perdido development in the Gulf of Mexico.

The scope of work includes project management of engineering and installation of a flexible flowline from the well to a pipeline end termination; installation of an umbilical; installation of four electrical flying leads (EFLs) and pre-commissioning. Project management and engineering will be performed in Houston, Texas, with offshore installation by McDermott's *North Ocean 102* targeted for completion in 2019.

Source: McDermott

The Perdido development is Shell's pioneering deep water oil and gas project that unlocked a new frontier of energy development in the Gulf of Mexico's Lower Tertiary Paleogene. The Perdido production hub produces oil and gas from the Silvertip, Great White and Tobago fields. Perdido is one of the most prolific oil and gas producing projects in the Gulf of Mexico. Shell is focused on safely and competitively growing production from Perdido by optimizing the performance of existing wells and through targeted additional in-field and near-field development opportunities.

Petroteq Signs LoI for Utah Acreage

Petroteq Energy Inc. signed a LoI to pursue additional acreage and resources in Utah. The company reached an agreement with Mareton Alliance LP with a view to acquiring leases and resources within the Utah Oil Sands Region. These assets meet all of the criteria set by Petroteq's management and board.

The company believes that growing its asset base is crucial at this juncture. It is in the process of bringing its new facility in Asphalt Ridge up to its nameplate production capacity of 1,000 bpd. David Sealock, CEO stated, "Growing our asset base is a key initiative that I have been pushing since my arrival at Petroteq this year. I know that our valuation will be driven by our production and technology, as well as our assets in the ground. The discussions with Mareton Alliance have the potential to significantly increase the resource assets on our balance sheet."

The pricing and structure of the transaction have yet to be finalized, but Petroteq management is confident that an attractive transaction can be structured. The Letter of Intent is non-binding and the transaction contemplated is subject to board and exchange approval.

BiSN Achieves Double First

BiSN achieved a double first with the successful deployment of its pioneering sealing solution in Azerbaijan. The company also marked the first tool setting on telecoil in its history during the project, carried out on behalf of an operator active in the region.

Utilizing their unique tubing seal, Wel-lok M2M TS™ EXD, which was run and set in the well via telecoil, BiSN was able to achieve the client's aim of isolating a producing zone in order to perforate and produce a new zone higher in the well.

BiSN chief executive officer, Paul Carragher, said: "Our tools are typically set on electric line as we need the electrical current to activate our unique thermite heater. However, for highly deviated wells it is difficult to get the tools past the deviation as you rely on gravity to get them to depth – and the more deviated it is the less gravity helps.

"Utilizing telecoil allowed us to push the tool into the well without relying on gravity, while still supplying the electricity needed to set our tool. This is the first time our tool has been set using this configuration and we are delighted to have successfully carried it out, paving the way for even more innovative uses for our technology."

The project completion is another milestone in an exciting year for BiSN, which has received numerous accolades in recognition of its achievements, most recently winning the Outstanding Innovation award at the inaugural Decom North Sea Awards.

HydraWell Awarded P&A in the NCS

HydraWell was awarded a long-term contract for plug & abandonment (P&A) and slot recovery operations on a major field on the Norwegian Continental Shelf (NCS) by an unnamed international operator.

The contract is valid for five years plus three additional three-year options. The contract value has not been disclosed.

The operator will utilise HydraWell's HydraHemera second generation high pressure Perf, Wash & Cement, PWC® jetting system as their chosen technical solution for both P&A and slot recovery operations. The PWC®-technology plugs offshore wells in 2-3 days, compared to traditional section milling operations which often takes 10-14 days to complete.

Sole-4 Tested Off Australia

The Sole-4 well, the second of two production wells for Cooper Energy's Sole Gas Project off Victoria, Australia, is being shut-in for future connection after successful clean-up and flow-back operations.

Sole-4 was drilled, sand screens installed and gravel packed over mid to late July. The clean-up and flow-back test was conducted on a near-horizontal 112-meter section of the Top Latrobe Group sandstone reservoir.

The test, which commenced on August 4 was conducted over a 24-hour period with the flow rate constrained by surface well test equipment to a maximum measured rate of 60 Mmscf/d, (million standard cubic feet per day). During the 11-hour main flow period through a 192/64" choke, the flow rate averaged approx. 54 Mmscf/d. Preliminary technical analysis indicates Sole-4 can produce at or near the onshore plant capacity of 68 TJ/day.

The gas composition at Sole-4 is in line with expectations and consistent with measurements from both Sole-3 and the earlier Sole-2 appraisal well. H2S concentrations are as anticipated and well within plant specifications.

Sernius Spuds in Romania

Serinus Energy's Moftinu-1003 well has been spud. The well is being drilled to a total depth of 1,600 meters and is expected to take four weeks.

The well is targeting to penetrate all of the commercial gas-bearing sand formations that were present in the Moftinu-1007 well. Assuming successful conclusion of the drilling operations, the well will be completed, tested and made ready for production through a tie-in to the Moftinu gas plant.

As with the Moftinu-1007 well, the Moftinu-1003 well will partially satisfy the work commitment required for the three-year Satu Mare license extension to October 28, 2019.

The Satu Mare Concession, in which Sernius holds 100% interest, is one of the largest exploration blocks in Romania. The block lies

on a prolific oil and gas trend in the Eastern Pannonian Basin. The Satu Mare possesses different plays that are actively producing along the same trend, including: shallow amplitude-supported gas reservoirs; conventional siliciclastic oil reservoirs; and fractured-basement oil and gas reservoirs. The Moftinu gas field, discovered in 2014, is the catalyst for future, self-funded, growth in the Satu Mare concession, with first production scheduled for later this year.

Magseis Granted Extension in Middle East

Magseis was granted an extension for a cable operation in the Middle East using proprietary MASS nodes. The company will also use the cable vessel *Artemis Athene*.

CEO Per-Christian Grytnes commented, "We are delighted to continue our operations in the region where we over time have shown strong operational performance and delivered consistently excellent data quality using our proprietary MASS node technology."

Source: Magseis

The project will commence in Q3 2018 and have a duration of approximately seven months.

Aker Solutions Secures Additional Work on Johan Sverdrup

Aker Solutions has, in collaboration with Kvaerner, secured additional hook-up and commissioning work for Equinor's Johan Sverdrup field offshore Norway. Equinor exercised an option in the Johan Sverdrup Riser platform hook-up contract, awarded in January 2017, for Aker Solutions to perform hook-up and commissioning assistance of the field's utility and living quarter platform, as well as the preparatory offshore work connected with the phase two modifications of the riser platform.

"We are delivering well and on schedule on the hook-up work that we are currently performing on the Johan Sverdrup field," said Knut Sandvik, EVP Projects at Aker Solutions. "We are excited to continue our work with Kvaerner and Equinor on Norway's largest offshore development in the past three decades."

The new scope will be executed by Aker Solutions in a split operation model with Kvaerner, and the companies will work closely with Equinor, supporting in all parts of the project execution. The work will primarily consist of planning, management and hook-up of the Johan Sverdrup utility and living quarter module, as well as the hook-up work in connection with the phase two modifications of the riser platform.

The preparation work starts this fall and will involve about 40-50 people from Aker Solutions, Kvaerner and Equinor, rising to 300-400 people working in rotation offshore on the project. Offshore work for the utility and living quarter platform is scheduled to begin in Q2 2019.

Petronas Tags Vantage for Kepong-A Field Work

Vantage Oilfield Solutions SdnBhd (Vantage) received a work order award from Petronas Carigali SdnBhd for the Provision of Annulus Wash and Cementing Assurance for Kepong-A field, Terengganu, Malaysia.

Vantage, a subsidiary of Vantage Energy Group Sdn Bhd, through its collaboration with its principal, HydraWell Intervention AS, will provide plug and abandonment services at the field under the Annulus Wash and Cementing Assurance (AWCA) umbrella contract from Petronas Carigali.

Vantage will perform the P&A services using HydraWell's high pressure PWC® (Perforate, Wash and Cement) jetting system which can install a rock-to-rock barrier in less than two days. In comparison, traditional plugging methods such as section milling can often take 10-14 days to complete.

Under phase one of the contract, Vantage has been tasked to safely plug and abandon four wells in 2018. An additional six wells may be plugged at a later stage. The contract includes the installation of 18 PWC® plugs with an extension option of 10 more PWC® plugs. The work will be conducted from a fixed satellite platform on wells with both single and dual casings.

Frontera Sees Positive Drilling Results in Colombia

Frontera Energy's Acorazado-1 well located on the 100% owned and operated Llanos 25 block onshore Colombia has been deemed a success for the company. As a result, Frontera had cased the well in preparation for testing.

The Acorazado-1 exploration well reached a total measured depth of 15,470 ft into the target formation where the company recorded hydrocarbon shows in a Mirador Reservoir section with 356 ft of gross thickness. The well was drilled ahead of schedule and under budget.

The pre-drill cost estimate to drill the well was $35-50 million. The company will run and cement a liner in preparation for testing, bringing the well cost to $40 million, excluding future testing costs.

Wireline logging operations combined with a limited pressure and sampling program have confirmed the presence of hydrocarbons in several potentially productive zones. Total hydrocarbon column and potential net pay is still under evaluation. However, the company is encouraged by the results to date and will case the well and initiate a testing program. The testing program, depending upon results, is expected to take several weeks.

In addition, Frontera said that its Delfin Sur-1 exploration well on the Z-1 block offshore Peru, completed drilling on August 12. The well was drilled to a total measured depth of 7,228 ft in the Heath Formation, on time and on budget and evaluated the Zorritos Formation where hydrocarbon shows were encountered but not in sufficient quantities to justify further evaluation. The well is being plugged and abandoned. Future activity on the block is under evaluation.

Rowan's ARO Drilling Wins Aramco Contracts

Rowan Companies' ARO Drilling has been awarded six three-year contracts in Saudi Arabia by Saudi Aramco for the use of jack-up rigs currently operating in the country. These new contracts will commence upon completion of the rigs' existing contracts later this year.

The *Rowan Middletown*, *Charles Rowan*, and *Arch Rowan* are expected to be leased to ARO Drilling in September, and the *Rowan Mississippi* is expected to be leased to ARO Drilling in December to fulfill these new drilling contracts. The *Scooter Yeargain* and *Hank Boswell*, which as previously announced will be sold to ARO Drilling in October, will immediately commence their new drilling contracts upon the rig ownership transfer to the joint venture.

African Rig Count

Country	April	May	June	July
Algeria	55	50	50	45
Angola	2	4	4	4
Benin	0	0	0	0
Cameroon	1	1	1	1
Chad	1	1	1	1
Congo	3	2	3	3
Congo (DRC)	0	0	0	0
Cote D'Ivoire	0	0	1	1
Djibouti	1	1	1	1
Egypt	30	25	27	0
Equatorial Guinea	0	0	0	0
Ethiopia	0	1	2	2
Gabon	4	4	3	4
Ghana	1	1	1	1
Guinea	0	0	0	0
Kenya	8	9	9	9
Liberia	0	0	0	0
Libya	1	1	1	5
Mauritania	0	0	0	0
Morocco	1	1	1	1
Mozambique	1	1	0	0
Namibia	0	0	0	0
Niger	0	1	1	1
Nigeria	13	14	13	16
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	2	2	3
Uganda	0	0	0	0

Source: BHGE

*Data not available

Africa Production of Crude Oil

(including Lease Condensate, Thousand Barrels/Day)

	2018		
Country	May	June	July
Algeria	1035	1039	1062
Angola	1519	1431	1456
Cameroon	80	80	78
Chad	89	90	92
Congo (Brazzaville)	319	331	313
Congo (Kinshasa)	20	20	20
Cote d'Ivoire (Ivory Coast)	28	28	29
Egypt	640	640	640
Equatorial Guinea	127	126	126
Gabon	187	190	188
Ghana	118	119	121
Libya	962	708	664
Mauritania	0	0	0
Morocco	0.5	0.5	0.5
Niger	20	20	20
Nigeria	1632	1660	1667
South Africa	3	3	3
Sudan and South Sudan	204	204	211
Tunisia	48	48	48
Total Africa	7031.5	6737.5	6738.5

Various sources including EIA, IEA and OPEC

Production of Natural Gas Plant Liquids

(Thousand Barrels/Day)

	2018		
Country	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	July 2018			Variance From Last Month	June 2018			July 2017		
	Land	Offshore	Total		Land	Offshore	Total	Land	Offshore	Total
Latin America	161	29	190	10	154	26	180	159	37	196
Europe	48	32	80	2	48	30	78	50	32	82
Africa	79	19	98	4	76	18	94	75	14	89
Middle East	354	46	400	8	350	42	392	352	45	397
Asia Pacific	138	91	229	14	136	79	215	119	76	195
United States	1,032	18	1,050	-6	1,037	19	1,056	931	22	953
Canada	201	3	204	67	134	3	137	197	1	198
Worldwide Total	2.013	238	2,251	99	1,935	217	2,152	1,883	227	2,110

Source: BHGE

Facts and Figures

OPEC Oil Production
(Thousand Barrels/Day*)

Country	2018 May	2018 June	2018 July
Algeria	1035	1039	1062
Angola	1519	1431	1456
Congo	319	331	313
Ecuador	520	519	525
Equatorial Guinea	127	126	126
Gabon	187	190	188
Iran, I.R.	3822	3799	3737
Iraq	4461	4533	4556
Kuwait	2703	2731	2791
Libya	962	708	664
Nigeria	1632	1660	1667
Qatar	602	603	616
Saudi Arabia	10015	10420	10387
UAE	2862	2897	2959
Venezuela	1388	1340	1278
TOTAL OPEC	32154	32327	32323
OPEC exluding Iraq	27693	27794	27767

Source: OPEC

** Based on secondary sources*

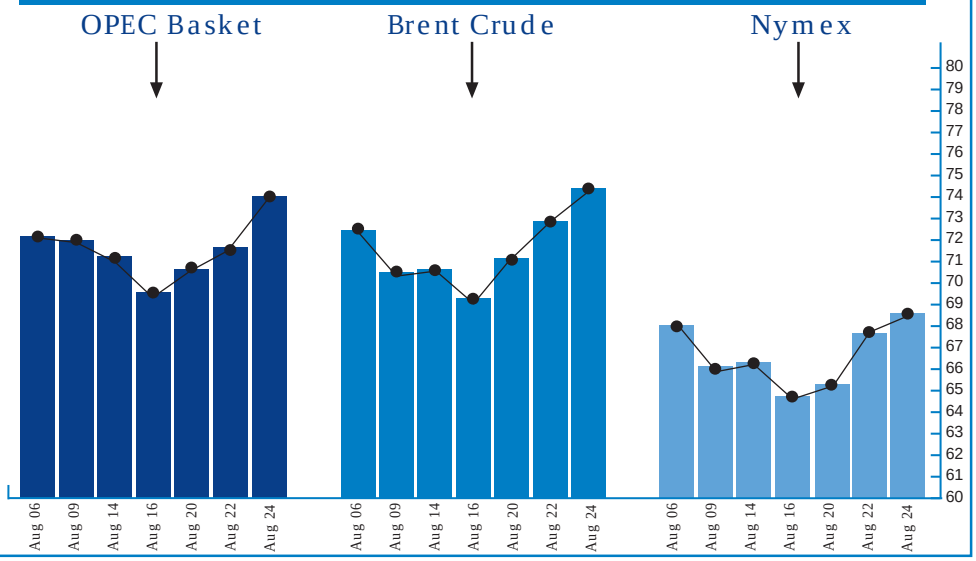
World Oil Production
(million barrels per day)

Country	2018 Q2 2018	2018 June	2018 July
Americas	21.89	21.79	22.11
Canada	4.84	4.67	4.88
Chile	0.01	0.01	0.01
Mexico	2.13	2.12	2.09
United States	14.92	14.99	15.13
Asia Oceania	0.38	0.38	0.36
Australia	0.31	0.31	0.29
Others	0.07	0.07	0.07
Europe	3.31	3.25	3.38
Norway	1.74	1.73	1.83
UK	1.06	1.02	1.05
Others	0.51	0.5	0.5
Total OECD	25.58	25.42	25.85
Total Non OECD	29.39	29.52	29.28

Source: IEA Oil Market Report

Oil Prices

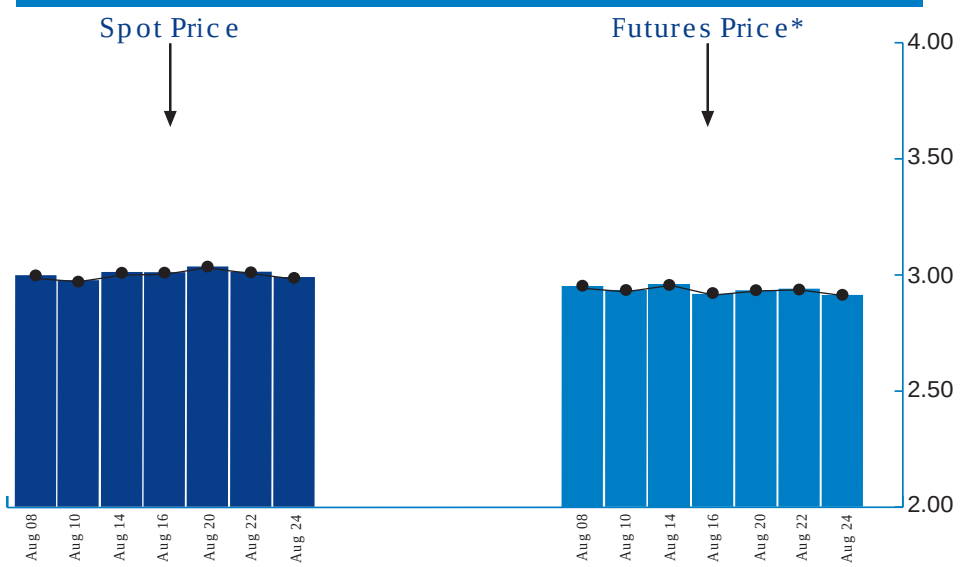
August 06	$
OPEC Basket	72.18
Brent Crude	72.51
Nymex	67.94
August 09	
OPEC Basket	72.03
Brent Crude	70.55
Nymex	66.14
August 14	
OPEC Basket	71.33
Brent Crude	70.77
Nymex	66.33
August 16	
OPEC Basket	69.47
Brent Crude	69.21
Nymex	64.88
August 20	
OPEC Basket	70.64
Brent Crude	71.11
Nymex	65.42
August 22	
OPEC Basket	71.75
Brent Crude	72.96
Nymex	67.86
August 24	
OPEC Basket	74.02
Brent Crude	74.41
Nymex	68.72



Gas Prices

August 08	$
Henry Hub	2.99
New York	2.95
August 10	
Henry Hub	2.96
New York	2.94
August 14	
Henry Hub	3.02
New York	2.96
August 16	
Henry Hub	3.02
New York	2.91
August 20	
Henry Hub	3.04
New York	2.93
August 22	
Henry Hub	3.02
New York	2.94
August 24	
Henry Hub	2.99
New York	2.91

Dollars per BTU



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

Africa Oil & Power 2018

Africa Oil & Power took place from September 5 to 7 at the Cape Town International Convention Center. The event kicked off with opening speeches by Hon. Jeff Radebe, Minister of Energy of South Africa; H.E. Rupia Banda, Former President of Zambia; H.E. Gabriel Obiang Lima, Minister of Mines and Hydrocarbons of Equatorial Guinea; and H.E. Mohammed Barkindo, Secretary General of OPEC.

Hon. Jeff Radebe gave a warm welcome to everyone on behalf of his government and host nation and went on to acknowledge that 2018 marks the centenary of the birth of the late President of South Africa, Nelson Mandela. He also paid tribute to the late Secretary General of the United Nations, Kofi Anan.

The tone of the conference was set by the first panel, who collectively called for energy coalitions and collaboration of all stakeholders. These views were shared by H.E. Mohammed Barkindo (Man of Oil Award recipient), OPEC; Dr Sun Xiansheng (International Energy Forum); H.E Yury Sentyurin (Gas Exporting Countries Forum); and H.E Mahaman Gaya (African Petroleum Producer's Organization).

Among the other themes and issues highlighted throughout the three-day event were:

- Equatorial Guinea as a preferred partner for African LNG solutions
- South Sudan investment opportunities
- Renewable energy finance
- Energy coalitions & alliances
- Addressing common challenges

For more information on the proceedings over the three-day event, visit *www.africaoilandpower.com*

Conferences

September 2018			
16-18	AIPN Europe Chapter Conference	Lisbon, Portugal	www.aipn.org
20-20	World Upstream Summer Reception	London, UK	www.africa-petroleumclub.com
24-25	Tanzania Oil & Gas Congress	Dar Es Salaam, Tanzania	www.cwctog.com
24-26	SPE Annual Technical Conference and Exhibition	Dallas, TX USA	www.atce.org
26-28	Regional Energy Co-operation Summit	Accra, Ghana	www.regional-energy-cooperation-summit.com
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
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
11-13	Mauritanides 2018	Nouakchott, Mauritania	www.mauritanidesmr.com
February 2019			
11-13	Egypt Petroleum Show 2019 (EGYPS)	Cairo, Egypt	www.egyps.com

AD INDEX

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*repeat delegate numbers

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