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LNG: Out of Africa

Reflections with Minister Diamantino Azeveda

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ON THE COVER
Exploration operations offshore West Africa
Bouteflika Resigns, Elections Scheduled

For the first time since 1999, Abdelaziz Bouteflika’s name will not be on the ballot for Algeria’s presidential elections. The beleaguered president resigned before his mandate ended on April 28. Bouteflika had been under siege for more than a month with mass protests and army pressure to end his two-decade long reign. Upon hearing the news of Bouteflika’s resignation, widespread celebrations across the country were held in the streets.

Algeria’s interim president, Abdelkader Bensalah, promised to organize free elections within 90 days following weeks of protests that led to the resignation of leader Abdelaziz Bouteflika after 20 years in power. The elections have been preliminarily set for July 4.

“I am committed to organizing elections,” said Bensalah, who has been re-elected as leader of the upper house since the early 2000s. The army was aligned with the constitution as a pathway out of the crisis, he added in his 16-minute speech. In a televised statement, Bensalah said he would consult with the political class and civil society. While the interim president seems to be saying the right things, protesters are looking for an entirely different government. Bensalah is a long-time ally of Bouteflika and seen as part of the ruling caste by the protesters.

Promises were made to “set a national and sovereign commission to secure fair elections,” but it is unclear as of yet if the protestors will take a wait-and-see stance when it comes to Bensalah’s promises. Demonstrators are calling for radical change and not more of the same of Algeria’s elite who include veterans of the war of independence against France, ruling party figures, businessmen, the army and labor unions.

Comoros Elections “Highly Irregular”

The electoral oversight body of the Comoros declared incumbent President Azali Assoumani winner of the country’s March presidential elections with 60.8% of the vote. Ahamada Mahamoudou was the runner up out of 12 opposition candidates; he received 14.6% of the ballot total.

As Assoumani won with over 50% of the vote, a run-off election will not be held, according to the law of the island nation, despite international observer bodies alleging the voting process was highly irregular and lacked credibility or transparency. The observers were with organizations that include the African Union and Comesa, among others.

UN and AU Leaders Give Merits to Joint Development Mechanism for Africa

The UN’s Regional Coordination Mechanism to support the African Union and its programs (RCM-Africa) is all about up scaling efforts to get needed sustainable development results for the continent, leading figures from the UN system and the African Union have told media practitioners.

At a press conference on the side-lines of the 52nd Session of ECA and the 20th Session of RCM-Africa, UN Deputy Secretary-General – Amina J. Mohammed, ECA’s Executive Secretary – Vera Songwe; and the African Union’s Commissioner for Human Resources, Science and Technology – Sarah Anyang Agbor – spelled out the merits of this AU-UN synergy in the light of dovetailing the UN’s mandates of peace and security with sustainable development.

Ms. Mohammed said in the current context of addressing member States’ challenges and opportunities, RCM-Africa strove to capitalize on the UN 2030 Agenda for sustainable development to support the seven important aspirations of the of the African Union’s Agenda 2063. “It is about how we can together leverage what governments should be doing to provide services, draft-in their citizens as inclusive part of their agendas but also how we can leverage resources to enhance trade and foreign direct investment flowing into the continent to move forward with that agenda,” she said.

“Practically, RCM Africa is about the UN working forward with that agenda,” she said.

Nigeria Election Challenge Filed, Again

February presidential elections that pitted sitting president Muhammadu Buhari against primary opponent, former Vice President Atiku Abubakar, are still being questioned for their legitimacy. According to the Independent National Electoral Commission (INEC), Buhari received 15.2 million votes (56%), against Atiku’s 11.3 million (41%).

On March 18 Abubakar filed a petition with the presidential election tribunal, challenging the results in court due to “irregularities.” President Buhari and his party immediately rejected the claim. The tribunal has 180 days from the date of filing to issue its ruling.

Cameroon: New Attacks on Civilians by Troops, Separatists

According to Human Rights Watch, government forces in Cameroon’s Anglophone regions have killed scores of civilians, used indiscriminate force, and torched hundreds of homes over the past six months, Human Rights Watch said, “Armed separatists have assaulted and kidnapped dozens of people during the same period, executing at least two men, amid intensifying violence and growing calls for secession of the North-West and South-West region.”

The NGO statement went on to say that violence has intensified since October 2018 as government forces have conducted large-scale security operations and separatists have carried out attacks. Cameroon’s government should investigate allegations of human rights violations and ensure that civilians are protected during security operations. Separatist leaders should immediately direct their fighters and followers to halt all human rights abuses and to stop interfering with children’s education.

“Cameroon’s authorities have an obligation to respond lawfully and to protect people’s rights during periods of violence,” said Lewis Mudge, Central Africa director at Human Rights Watch. “The government’s heavy-handed response targeting civilians is counterproductive and risks igniting more violence.”

Since October, at least 170 civilians have been killed in over 220 incidents in the North-West and South-West regions, according to media reports and Human Rights Watch research. Given the ongoing clashes and the difficulty of collecting information from remote areas, the number of civilian deaths is most likely higher.
**MOVING ON**

**Kosmos Energy**’s chief exploration officer and founding partner, Brian F. Maxted has retired from the company. Maxted’s retirement was effective February 15, although he will remain on the board to serve as special advisor on exploration. The role vacated by Maxted was filled by Tracey Henderson who joined Kosmos in 2004.

The Supervisory Board of Rolls-Royce Power Systems AG agreed on extending the contracts of President and CEO Andreas Schell alongside CFO and HR Director Marcus A. Wassenberg. Both contracts were extended until December 2022.

Winch Energy appointed respected African energy expert Olga Johnson as an Ambassador for Africa. Johnson is a true expert in her field, holding the position of executive director of Energies pour l’Afrique, created by Jean-Louis Borloo, former French Minister of State, which aims to provide affordable access to energy for all Africans and is also special advisor for Africa for Foundation Energies pour le Monde (FONDEM). In addition, she is an ambassador for the well-known Women in Africa Initiative, an international platform dedicated to the economic development and support of leading and high potential African women.

Tullow Oil appointed Sheila Khama and Genevieve Sangudi as non-executive directors with effect from April 26 following the firm’s Annual General Meeting. Kharman is a policy advisor to the World Bank and Sangudi is MD of the South Africa based Carlyle Group. Separately, after almost nine years on the board, Tutu Agarye will resign as a non-executive director. Following Tutu’s retirement, Jeremy Wilson will chair the Remuneration Committee.

ADES International Holding appointed Hatem Soliman as a non-executive director with immediate effect. Soliman brings a wealth of international industry experience, having spent 36 years with Schlumberger.

Victoria Oil & Gas revealed that Kevin Foo is retiring as director and executive chairman. Roger Kennedy, currently senior non-executive director, will assume the role of executive chairman. Two additional independent non-executive directors will be appointed to the board.

Kenneth Bhalla has been promoted to CTO of Stress Engineering Services, Inc. (SES). Prior to his promotion, Bhalla led SES’ drilling, completion and intervention systems sub-practice.

Foster Marketing named Anna Scurdos-Brooke as its director of public relations. Prior to her promotion, Scurdos-Brooke served as Foster Marketing’s public relations account executive based in the U.K. Before joining Foster Marketing in 2013, she held a range of editor positions with global publications including Oilfield Technology, LNG Industry, World Coal and EnergyGlobal.com.

International SOS appointed Anneline Booyse-Mofokeng to the role of security director for Africa. Booyse-Mofokeng is an accomplished security professional, with previous security roles including at the Bill and Melinda Gates Foundation, World Bank, Eskom Electoral Institute of Southern Africa South (EISA) and the Board of Healthcare Founders.

Sasol appointed Ovidio José Sarmen to Rodolfo as country director for Mozambique. Rodolfo comes to Sasol with solid experience in the oil and gas industry starting his career with BP in Mozambique.

Billy Rogers was named as the new president of HENDERSON’S Drilling Products division. Rogers brings more than 40 years of oilfield experience to his new role, previously working for Nabors, Atwood Oceanics, and Roberts-Johnson Industries in various capacities before founding and serving as president of HP Piping Solutions, acquired by HENDERSON in 2018.

**BCCK Holding Company** (BCCK) appointed Lucia Cheung as proposal manager. Cheung has more than 20 years of engineering, business development, finance and project execution experience across the oil and gas, chemicals, pharmaceutical and manufacturing industries. Her experience was gained in the US, UAE, Kuwait, Indonesia and Singapore.

Xodus Group has expanded its decommissioning offering with the appointment of its first well decommissioning manager, Gavin Bell. Bell joins the company from Repsol Sinopec Resources UK where he led a number of P&A projects through early planning phases including rig option selection and the development of P&A cost models.

Khaled Jarrar was appointed group CFO of Drake & Scull International PJSC (DSI). The company also appointed Mohamed Ghanem as its chief legal officer and Mike Grant as chief restructuring officer.

ExxonMobil Chemical’s John Verity has elected to retire from the company after 38 years of service. The board of directors has appointed Karen McKee, senior VP for basic chemical integration and growth to fill Verity’s position. The appointment of McKee is effective from April 1.

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.
According to some of the research and analysis consultancies, merger and acquisition deal flow over 2018 fell flat, and were heavily focused on low-risk transactions that offered consolidation and optimization. A few merger and acquisition deals have been announced or concluded over the first few months of 2019, leading one to wonder if this trend will continue throughout the year or if we are looking at a repeat of 2018.

Oil prices will remain a factor. After a reasonable recovery over 2018 based in part on efforts by an OPEC-led pact with other non-OPEC producers to curtail production, prices began their unwelcome plummet on October 11 from the $73 range to bottom out at $42.53 per barrel in December. Since then we have seen a gradual recovery reaching a high of $65.89 on April 24. With summer demand going up in the northern hemisphere, stability issues in Libya and Venezuela, and looming US sanctions on Iran, the price could remain propped up.

So far, on the upstream end, we have seen African Petroleum Corp. enter into an agreement to combine with PetroNor E&P Ltd. for an all-share consideration this quarter. We also saw Soco International conclude its $215 million deal to pick up Egypt-focused producer Merlon Petroleum, announced in September. As we were getting ready to go to press, a major acquisition deal was announced that, if it goes through, would be one of the most exciting we have seen in quite a while. Chevron Corp announced its intention to acquire Anadarko Petroleum Corp. at a mega-billion price tag. If successful, the deal could have implications for Algeria, Ghana, Mozambique, and South Africa where APC holds some exciting assets. Other upstream deals announced or pondered in Q1 were often focused on companies with assets in the US Permian Basin (Anadarko included).

Meanwhile, Nigeria asset disposals offer opportunity for those companies looking for producing assets rather than full acquisitions. Reports have ExxonMobil in talks to sell off some of its assets in the country. According to a Reuters report, citing industry and banking sources, the US firm has recently held talks on the sale of a suite of oil and gas fields as it turns its focus to new developments in U.S. shale and Guyana. The potential disposals are expected to include stakes in onshore and offshore fields and could raise up to $3 billion. Shell announced in Q3 2019 it would be looking to pare down its Nigerian onshore and near shore assets to focus further offshore.

Between magazine issues, we’ll continue to keep you up-to-date on the latest developments from the M&A scene on www.petroleumafrica.com!

Algeria and Cameroon, both exciting and busy hydrocarbon producers, feature in the African Focus section, be sure to read the latest updates! Angola is making some changes, don’t miss our interview with H.E. Minister Diamantino Azeveda in Monthly Focus. Each year we take a look at the LNG industry and hone-in on Africa’s standing; all of the past year’s developments can be found in the Downstream Focus section. As always, your comments and suggestions are welcome and can be sent to info@petroleumafrica.com.
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Petrofac Wins $1 Billion Ain Tsila Job

Petrofac won a $1 billion contract in Algeria for the Ain Tsila Development Project. The contract comes from the joint operating group set up by Sonatrach, Petroceltic, and Enel; together Groupement Isarene.

Located around 1,100 kms south-east of Algiers, the Ain Tsila field will produce gas, LPG and condensate, for the local Algerian market and for export. Under the terms of the 42-month contract, the lump-sum EPC project scope of work includes commissioning, start-up and performance testing. E S Sathyanarayanan, group managing director, Engineering & Construction, commented: “I am delighted we have the opportunity to be working with the Groupement Isarene partners to deliver this strategically important project. This award builds on Petrofac’s significant track record in Algeria where we have been operating successfully for more than 20 years, with a strong record for project execution and the development of local capability. We are focused on delivering an effective, safe solution that meets our high standards and continues our commitment to the local energy sector.”

Besides working on the Ain Tsila, Petrofac is working on Algeria’s Tinrhert Field Development Project as well as the Alrar and Reggane projects that came onstream last year.

Nour-1 Another Gas Discovery for Egypt

Another gas discovery was made in Egypt, adding to the country’s already significant natural gas resource totals. The discovery was made by Italian firm ENI while drilling the Nour exploration prospect on the Nour North Sinai Concession in the Eastern Mediterranean.

The Nour-1 New Field Wildcat (NFW) was drilled by the Scarabeo-9 semi-submersible drilling rig in a water depth of 295 meters, reaching a total depth of 5,914 meters. The well found 33 meters of gross sandstone pay with good petrophysical properties and an estimated gas column of 90 meters in the Tineh formation of Oligocene age. The well has not been tested, although an intense and accurate data acquisition has been carried out.

In the concession, which is in participation with EGAS, ENI is the operator with a 40% stake, BP holds a 25% stake, Mubadala Petroleum a 20% stake while Tharwa Petroleum Company claims a 15% stake of the contractor’s share.

The JV operator will start the feasibility studies to accelerate the exploitation of these new resources leveraging the synergies with existing facilities and infrastructures, after finalizing the discovery evaluation.

WorleyParsons to Aid Sonatrach in Reaching its Goals

WorleyParsons signed a five-year framework agreement with Algeria’s state-run oil and gas firm Sonatrach. Under the agreement, the company will provide project management services to develop its oil and gas production capacity over the next five years across a number of key projects in the country.

Sonatrach previously announced its investment strategy program, which is largely centered on its natural resources. The company’s goal is to become the fifth largest oil company in the world (SH2030).

Agogo-1 Adds Another Oil Success to Block 15/06

ENI knocked out another discovery in Angola on Block 15/06, this time with the drilling of the Agogo exploration prospect. The discovery is estimated to contain between 450 and 650 million barrels of light oil in place with further upside.

The Agogo-1 NFW well, which has led to the discovery, is located approximately 180 km off the coast and about 20 km west from the N’Goma FPSO (West Hub). The well was drilled by the Poseidon drillship in a water depth of 1,636 meters and reached a total depth of 4,450 meters.

Agogo-1 NFW proved a single oil column of about 203 meters with 120 meters of net pay of high-quality oil (31° API) contained in a sub salt diapirs setting in Lower Miocene sandstones with excellent petrophysical properties. The data acquired in Agogo-1 NFW indicate a production capacity of more than 20,000 barrels of oil per day.

Agogo is the third discovery of commercial nature since the Block 15/06 consortium decided to launch a new exploration campaign in 2018, leading to the discoveries of Kalimba and Afoxé.

The discovery opens new opportunities for oil exploration below salt diapirs in the north-west part of the prolific Block 15/06, thus creating new chances for unlocking additional potential value. The mapping and the drilling of Agogo prospect has been possible through the use of ENI’s advanced and sophisticated proprietary seismic imaging technologies.

The Block 15/06 JV, comprised of ENI (operator, with a 36.8421% stake), Sonangol P&P (36.8421%) and SSI Fifteen Limited (26.3158%), will work to appraise the discovery and start the studies to fast track its development.

First Angola Bound Drillship Launched for Sonadrip

Sonangol and Seadrill saw the first of two drillships launched in Busan, South Korea, the Libongos drillship. The vessel is the first of two that will start operations in H1.

Libongos and its sister ship Quenguelas, which is currently in the final building phase, will be operated by Seadrill as part of the Sonadrill JV between Sonangol and Seadrill. The drillships, built at the Daewoo Shipbuilding Marine Engineering (DSME) shipyard, are seventh generation high spec ultra-deepwater drillships. Libongos was christened and launched by Sonangol CEO, Carlos Saturnino; DSME CEO, Sung Leep Jung; and Angola’s First Lady Ana Dias Lourenço, on March 21.

“This project is another milestone in relaunching the Angolan oil industry, in the quest to increase production and national reserves. It also increases the integrated service offerings of the primary chain, diminishing the dependency on external availability in meeting the exploration program milestones,” Saturnino said at the event.

Hassi Bir Rekaiz Development in the Works

Algeria’s Hassi Bir Rekaiz is seeing some drilling over the coming months. PTT Exploration & Production (PTTEP) plans to drill an estimated 14 wells as it launches the initial development on the concession’s cluster of oil fields in eastern Algeria.

PTTEP said it began working on the development after receiving approval in 2018 for a 25-year production period.

The company expects to see first production in 2021 at an initial rate of 10,000-13,000 bpd. Over the next four years the field should reach peak production of 50,000-60,000 bpd once the
construction of a central facility and the drilling of a planned 139 wells are complete.

Field names are Semhari, Semhari East, Mouia Aissa, Rhoure Abadje, Oglat El Bachir, Sahane Bagas, Rhoure Rhorfat, Rhoure Terfaia, Bou Goufa, and Rhoure Ez Zita.

**Total Brings Kaombo Sul On Production**

Total started production on the Kaombo Sul field on Angola’s Block 32. The crude oil is being produced through the block’s second FPSO Kaombo Sul. Eight months after its sister ship Kaombo Norte came on stream, Kaombo Sul will add 115,000 bpd and bring the overall production capacity to 230,000 bpd, equivalent to 15% of the country’s production. The associated gas from Kaombo Sul will be exported to the Angola LNG plant, as part of the Group’s commitment to stop routine flaring.

SPDC Plans $15 Billion Investment

Royal Dutch Shell’s Nigerian subsidiary, Shell Petroleum Development Co. (SPDC), plans to invest about $15 billion in oil and gas projects in the West African country over the next five years, ThisDay reported, citing the managing director of the unit, Nosa Okunbor.

The projects earmarked for investment will include deep offshore, shallow water, swamp and land terrain, the news outlet reported.

In addition, SPDC has also taken the final investment decision on the 300 Mmcf/d Assa North Ohaji gas project, which is expected to generate 1,200 MW of power, said Okunbor.

Sirius Reaches Targeted Depth on Ororo

Sirius Petroleum has reached target depth on its current drilling operations offshore Nigeria on the Ororo field using the Adriatic-1 drilling rig. The company is awaiting a further update from Shelf Drilling regarding the release of the Adriatic-1, which is currently stationed in the adjacent license to the Ororo field.

In order to retain its current license, the company is required to bring the Ororo field into production on or before May 1. Sirius said that given the approaching timeline, it has taken the decision to seek a further extension to the term of the license from the Department of Petroleum Resources, which has already been granted on two previous occasions.

**ExxonMobil’s Algerian Entrance Stalls**

Algeria’s hopes of getting ExxonMobil involved in exploring within its borders have taken a bit of a hit. Talks between the Algerian authorities and the US supermajor have stalled on the back of the North African country’s recent unrest in the country.

The country has experienced ongoing protests over President Abdelaziz Bouteflika’s bid for five terms in office. While Bouteflika bowed to pressure from the protestors, deciding to pull out of the election, his decision to postpone those elections and remain in office until new ones are set was very unpopular.

The stalling of talks between ExxonMobil and the government is the first economic fallout from the anti-government protests. Sonatrach and ExxonMobil had been in talks for months to develop a field in the southwestern Ahnet Basin, the sources close to the discussions said, according to a Reuters report.

KCA Deutag Picks Up New Algerian Contract

KCA Deutag saw a slew of new contract awards coming out of Africa, as well as several other regions around the world. These contracts, with a combined value of approximately $54 million, are for drilling operations.

**Y3-51 Shows Encouraging Results**

AGOCO, a subsidiary of Libya’s NOC, saw promising results from its Y3-51 appraisal well in the Sirte Basin. According to a statement on the NOC website, the well has the potential to flow at rates of 8,500 bpd of oil and 1.82 Mmcf/d of gas.

The well is located north-east of the Najafoura oil field. While the well was drilled in January 2018 to a total depth of 11,300 ft, a thorough testing of the well was not conducted until March 24.

Initial production testing from the Bahi Formation and Upper Cretaceous layer saw the well flowing at a rate of 2,860 bpd of oil and 54 Mmcf/d of gas from the Bahi Formation and 5,635 bpd of oil and 1.28 Mmcf/d of gas from the Upper Cretaceous. The tested interval was between 10,520 – 10,765 ft.

The Y3-51 well was drilled to delineate structure Y to the north-west of discovery well Y1-51, drilled in 2000, with promising test results of 3,892 bpd. This was followed by the Y2-51 in 2003, however the results were not encouraging. AGOCO is currently drilling appraisal well Y4-51.

NOC and AGOCO are working on developing these fields and increasing production. Full exploration of structure Y is a strategic priority, as it is expected to add 38 million bpd of oil,
Safeway Seagull Celebrates 10,000 Safe Transfers for Bonga FPSO Job
The Van Aalst Group reported that as of March 6 the unique Safeway motion compensated offshore access system completed over 10,000 safe personnel transfers for Shell Nigeria Exploration & Production Company (SNEPCo) during a maintenance campaign on board the Bonga FPSO.

To perform this maintenance and inspection project of the FPSO, the unique 28-meter long walk-to-work Seagull-type is installed on the 95-meter long multifunctional subsea vessel Olympic Triton. Specifically for this Bonga-project, the DP2 diesel electric ROV support vessel was chartered by Temile Development Company, an indigenous shipping company operating in the Nigerian oil and gas industry.

As both the Olympic Triton and the Bonga FPSO are vessels with individual movements in the water, the innovative and advanced control system of the Safeway Seagull was able to perform the Ship-to-Ship W2W operations as the world’s first supplier without modifications or additional control units on the FPSO landing point.

The FPSO varies in draft due to its normal operations. The Safeway Seagull’s standard 10-meter vertical height adjustment of the gangway allowed the 10,000 workers and their tools to be safely transferred from the Olympic Triton to the Bonga FPSO and vice versa at a spectacular pace, leading to an increase in operational efficiency.

According to the contract, the combination of Olympic Triton and the SafeWay gangway will remain operational on the project until further notice.

El Sisi Approves Gas Market Amendments
President Abdel Fattah El Sisi of Egypt, approved amendments to the regulation of the gas market activities law. The amendments involve the part of the law dealing with collecting fines due to violations, according to Mubasher.

Collected fines will be directed to the public treasury, instead of the Gas Regulatory Authority, as the authority gets sufficient money from other sources.

The amendments were made to ensure transparency, as the regulatory authority was responsible for both issuing and collecting violation fines.

NOC and ENI Sign MoUs
Libya’s state-run oil and gas firm NOC, and Italian major ENI, signed two MoUs on March 25. The first MoU concerned the establishment of a steering committee to expedite gas production at structures ‘A’ and ‘E’ within maritime concession MN 41 in the Sabratha Marine Basin.

The steering committee will oversee the timely and transparent implementation of this project, in line with best-practice good governance, and will work to alleviate difficulties facing project implementation. This important strategic project will provide gas to meet both local consumption and export requirements. Once complete, project capacity from both structures will total 760 million cubic feet of natural gas per day.

The second MoU agrees to jointly fund capacity building programs for industrial security staff at NOC and Mellitah Oil and Gas Company, with workshops focusing on risk assessment and mitigation, crisis management, and comprehensive field inspection procedures.

During the signing ceremony, NOC chief Mustapha Sanalla commented: “ENI is one of NOC’s strategic partners and one of the world’s largest oil and gas companies, renowned for its expertise and technological capabilities that we seek to bring to Libya. Our sector is the backbone of the national economy - we should preserve it for future generations. We have to work on developing the sector in order to increase production and fuel development.”

SPDC Adds to Contractor Support Fund
One of Royal Dutch Shell’s Nigerian units, Shell Petroleum Development Company of Nigeria Limited (SPDC), signed a contractor support fund of $200 million with the United Bank for Africa (UBA). Under the partnership agreement, the bank will provide loan facilities to the oil company’s local vendors and suppliers.

Shell’s contractor support fund provides support for contractors to finance projects for Shell companies in Nigeria in line with the aspirations of the Nigerian Content Act. Contractors and suppliers who have a valid purchase order and meet the bank’s risk assessment criteria will have access to the fund. Potentially, this support fund will boost their financial capacity and enable them to improve their operations.

According to SPDC, “findings indicate that lack of access to capital hinders many Nigerian companies from competing for and executing contracts effectively.” To this effect, the company aims to increase participation of host communities in its value chain through the funding.

In 2016 Shell signed a $2.2 billion MoU with seven Nigerian lenders aimed at providing local vendors financial support. According to the company, about $1.5 billion worth of loans have since been given to over 300 small and medium sized businesses who either supply to Shell Nigeria or serve as vendors to the company’s products.

South Disoq to See Production Uptick
Egypt will add to its production totals this year when SDX Energy starts producing gas at the South Disoq concession. The company said that it aims to see a gross output of between 50-60 Mmcf/d by mid-2019.

In a statement on its website, SDX said the production from the South Disoq will be sold to state-run gas firm EGAS at a price of $2.85 per 1,000 cubic feet.

The company is also looking to boost its gross production average rates from the Meseda concession, hoping to reach 4,000-4,200 bpd this year.

Sonatrach Prepares for Offshore Campaign
Sonatrach, Algeria’s state-owned oil and gas company, in partnership with Total and ENI, is about to launch an offshore drilling program. The companies will be drilling on the eastern coast between Bejaia and Skikda.

A Reuters report cited Sonatrach’s Director for New Resources, Youcef Khankar, as saying that the campaign will begin in H2. Khankar said that 2D and 3D seismic data acquisition campaigns are currently underway. The initial results from the 2D seismic campaign suggest geological similarities between the east coast and Egypt’s Zohr field.

The targeted region for this new drilling campaign could contain several Tcm of natural gas, officials said.
Gabon’s NOC Takes Stake in Dussafu

Gabon’s state-run oil concern, Gabon Oil Company (GOC), signed an agreement with BW Energy Gabon to acquire a 10% stake in the Dussafu PSC. BW is the operator of the field with a 91.67% participating stake. Panoro holds the remaining interest.

The transaction is subject to certain conditions precedent, including the approval of the Gabonese government. It also involves payment by GOC of $28.5 million.

In addition to the state-run firm taking a stake, Tullow Oil has decided to exercise its back-in rights on the license. Once the agreement is approved, BW’s stake will drop to 73.5%, Panoro’s falls to 7.5%, GOC’s to 9% and Tullow will hold the remaining 10%.

Exceed Wins Guinea Bissau Job

Exceed won its first contract to be undertaken offshore Guinea Bissau. The award came from Svenska Petroleum Exploration AB and the project will comprise full well project management services to deliver a deep-water exploration well. The well is the first deep water well to be drilled offshore Guinea Bissau.

Exceed’s workscope will include all front-end engineering planning, service procurement support, logistical set-up, HSE management (including systems permitting) and operational execution of the well.

Valued in the region of $4 million, the 12-month contract follows on from existing operations in the region, begun during Q4 2018, which have seen Exceed steer an operator through its maiden well project offshore Gambia.

Qatar Petroleum to Join ENI Offshore Morocco

Qatar Petroleum (QP) has entered into another deal with ENI, this time to gain access to an exploration permit operated by ENI offshore Morocco. QPs is expected to soon enter the Tarfaya Offshore Shallow I-XII exploration permit.

ENI, who controls a 75% stake in the license, has signed a lease-out agreement with QP to sell 30% of it. The Tarfaya Offshore permit includes 12 exploration blocks off Morocco.

This agreement is subject to approval by the Moroccan authorities. In the event of validation, ENI will retain its operator status and hold a 45% stake. QP will hold 30% and state-run ONHYM will hold a 25% stake.

New Petroleum Code for Senegal

The long-awaited Senegalese Petroleum Code has just been enacted as Law No. 2019-03, dated February 1, 2019. This statute, which replaces its 1998 predecessor, sets out the general legal framework applicable to the carrying-out of petroleum operations in Senegal, from prospecting to marketing, from exploration to transport, from development to storage, from exploitation to the liquefaction of natural gas.

Matters such as the mandatory State participation in the petroleum operations (via Petrosen, the Senegalese national oil company), the terms for the award of blocks and the granting of the corresponding mining rights, the rules on production sharing, the tax and customs framework to which oil companies and their sub-contractors / service providers are subject – and the related incentives available to them – the environmental protection, transparency and local content standards, the foreign exchange guarantees from which both the oil companies and the sub-contractors may benefit, or the grandfathering in of the existing petroleum contracts are all addressed in and governed by the Petroleum Code.

A number of provisions of this new statute are expected to be the subject of developing regulations, including those setting out the general terms for the award of blocks – competitive tendering procedure or direct consultation.

In tandem with the new Petroleum Code, a new statute on Local Content in the Hydrocarbons Industry was also enacted (Law No. 2019-04, dated February 1, 2019). Its declared aims are to promote the use of Senegalese goods and services, and to enhance the participation of the national workforce, technology and capital in the entire value chain of the oil and gas industry.

3D Marine Seismic Launched Offshore South Africa

Africa Energy announced the start of a new 3D marine seismic acquisition program over the Total-operated Paddavissie Fairway on Block 11B/12B offshore South Africa. The Block 11B/12B joint venture partners have contracted Polarcus to perform the 3D marine seismic acquisition program with the seismic vessel Polarcus Asima.

The seismic campaign will be used to better define prospects within the block. The recent success at the Brulpadda primary and secondary targets significantly de-risks other similar prospects already identified on the existing 2D seismic.

“With this new 3D seismic program, the reservoir zones will be better imaged for the selection of future drilling locations. The 3D seismic acquisition program will last until the end of April,” said Jan Maier, Africa Energy’s VP Exploration.

The Brulpadda discovery is located on Block 11B/12B in the Outeniqua Basin 175 kms off the southern coast of South Africa. The block covers an area of 19,000 sq km with water depths ranging from 200 to 1,800 meters.

Africa Energy holds 49% of the shares in Main Street 1549 Proprietary Limited, which has a 10% participating interest in Block 11B/12B.

Sonangol and Total Team up in STP’s EEZ

French firm Total and Angola’s state-run oil and gas firm, Sonangol, will explore in the Exclusive Economic Zone (EEZ) of Sao Tome and Principe (STP) together. The two firms signed a PSA with the island nation’s National Oil Agency (ANP) to explore and produce oil from Block 1 in the EEZ. Total has a 55% share in the license, Sonangol 30%, and the São Tomé and Principe government will hold the remaining 15%.

Block 1 is located in the deep waters of the EEZ and covers an area of 3,292 sq km. Both companies were obliged to pay a signature bonus of $2.5 million to gain access to the block. The partners will also spend $1 million over a four-year period on social projects in the country. The agreement has a duration of 28 years and defines the first eight years as an exploration phase.

“Oil production – which we all hope will happen – can bring with it a fundamental contribution to what we do with the oil resources of this country towards an important progress for the people of São Tomé,” Olegário Tiny, head of ANP, was cited as saying in the Jornal de Angola.

In addition to Total and Sonangol joining forces for exploration in the EEZ, Total, on its own signed a new PSC for three blocks in the Joint Development Zone between Nigeria and STP. The new PSC grants Total the exclusive rights to
begin exploration activities in blocks 7, 8, and 11. Having never been explored before, the blocks carry the potential of over 500 million barrels of untapped crude oil. According to reports, Total will invest more than $10 million in acquiring 3D seismic data in search of oil and gas prospects in the blocks.

Aker Submits Pecan PDO
Aker Energy Ghana, operator of the Deepwater Tano/Cape Three Points (DWT/CTP) block offshore Ghana, submitted an integrated plan of development and operations (PDO) to Ghanaian authorities on behalf of itself and partners Lukoil, GNPC, and Fueltrade. The PDO was submitted and presented to Ghana’s Minister of Energy, John Peter Amewu, on March 28.

The integrated PDO presents an overall plan for a phased development and production of the resources in the DWT/CTP contract area. The phased development plan will start with the development of the Pecan field as a firm phase one, being the largest of several discoveries in the area.

The PDO is subject to approval from relevant Ghanaian authorities. Upon PDO approval, the partners will initiate a process to make the FID. First oil from the Pecan field is estimated 35 months after the FID is made.

The main Pecan field will be developed with a FPSO vessel and a subsea production system (SPS). The development of the Pecan field will comprise of up to 26 subsea wells. It is planned for 14 advanced, horizontal oil producers and 12 injectors with alternating water and gas injection (WAG), and the use of multiphase pumps as artificial lift, to maximize oil production.

Total reserves from the Pecan field development are estimated to 334 million barrels of oil, and plateau production is estimated to 110,000 bpd. Production from the field is expected to last for more than 25 years. The total capex to develop these reserves are estimated at $4.4 billion, excluding the charter rate for a leased FPSO.

The Pecan field center will have the flexibility to tie-in subsequent development of resources. In addition to the reserves to be developed in the first phase, the area holds discovered contingent resources (2C) of 110-210 million barrels of oil equivalent (mmboe), Total resources in the area have the potential to increase to between 600-1000 mmboe, provided successful appraisal drilling activity. Data analysis and appraisal drilling are currently ongoing at Pecan South and Pecan South East.

Aminex and APT Extend Farm-out Agreement
Aminex revealed that all parties to the previously announced Ruvuma farm-out agreement have agreed to an extension to the longstop date to July 31. According to Aminex, it and ARA Petroleum Tanzania Limited (APT), have made good progress on closing out the conditions precedent, including all JV partner approvals, and are actively engaged with the government of Tanzania to close out the remaining conditions.

The principal conditions still to be met are the extension of the Mtwaru License and approval by the Tanzanian government of the transfer of the interest and operatorship. Aminex and APT continue to work closely with the Tanzanian authorities to close out these conditions as soon as possible.

South Sudan Aiming for Production Boost
South Sudan is targeting an over 50,000 bpd increase in oil production in the coming months. According to the country’s Minister of Petroleum, Ezekiel Lol Gatkuoth, the government is targeting an increase of 70,000 bpd.

Aiding South Sudan in reaching its goal will be the El Nar, El Toor, and Manga oil fields, which will resume production near the end of April.

While touring the oil fields, Gatkuoth encouraged the China Petroleum Engineering and Construction Corp. to fast-track the rehabilitation process at the El-Nar and El-Toor fields in order to meet the deadline.

Having set a goal to increase its oil production to 270,000 bpd by the end of 2019, this new target will see the country’s current output rise from 160,000 bpd to 230,000 bpd in Q2.
interpretation of 3D data, including economic modelling.

Lastly, the contracted firm will assist in activating the proposed upgrade of the existing National Petroleum Data Center system as a platform for data marketing.

Kenya’s NOCK Seeks Drill Partner for Kaijado
State-run oil and gas firm, National Oil Corp. Kenya (NOCK), has turned its oil exploration focus to Kaijado. NOCK plans to drill on the oil block in the next two years. The company hopes to follow in the footsteps of Tullow and Africa Oil who have encountered oil resources estimated at nearly a billion barrels in Blocks 10BB and 13T in Turkana South.

The state-run firm, which has traditionally concentrated on its less-expensive downstream oil business, is seeking a partner to inject cash in drilling in exchange for an undisclosed stake in Block 14T.

The company said the results from its interpretation and integration of its 2D seismic data in the block where it has been undertaking geological and geoscientific studies with its partner, Japan Oil and Gas Metals Company, have been positive.

Equa G Launches Licensing Round at CAPE VII
Equatorial Guinea launched 26 onshore and offshore blocks during the presentation of its open licensing round at the APPO CAPE VII Congress & Exhibition on March 4. The licensing round covers 24 offshore and two onshore blocks.

Of the blocks on offer, two of the blocks host existing discoveries including Ophir Energy’s former Block R, which encompasses the currently stalled Fortuna FLNG project. The former Ophir block is now on offer as Block EG-27.

The other block with an existing discovery is Block EG-23. This block is located directly northwest of Marathon Oil’s Alba gas-condensate field and adjacent to the maritime boundary with Nigeria, it contains the Esturolita gas discovery. The block also holds the Tsavaria oil discovery and the non-commercial Sodalita West oil find.

Six blocks – EG-07, 08, 12, 14, 25 and 30 – surrounding Bioko Island are up also on the auction block. Atlas Petroleum previously operated EG-30 (known as Block J) while Starc used to operated EG-25 (formerly Block X), but the companies have been forced to relinquish these assets having done little or no work on them for years. EG-07 holds the Langosta gas and condensate discovery.

Other deep-water acreage available includes EG-05, 9, 10, 13, 15, 16, 17, and 22. Glencore previously operated EG-22 (then Block V) and EG-05. Blocks EG-03 and EG-04, previously controlled by Elegance Power, are on offer onshore Rio Muni, while shallow water assets EG-19, 26 and 29 (the former Block N) are also being offered to the industry.

The former Corisco Deep block, also known as Block K and now called EG-28, is also available. Four areas around Annobon Island, EA-01, 02, 03 and 04 are also included in the tender.

Noble Approves Alen Development
Noble Energy approved the Alen natural gas development offshore Equatorial Guinea. Natural gas from the Alen field will be processed through the existing Alba Plant LPG processing plant and EG LNG’s liquefied natural gas production facility located at Punta Europa on Bioko Island.

The Alen gas monetization project will utilize the existing three high-capacity production wells on the platform, with minor modifications necessary to deliver sales gas from the platform to the Alba Plant and EG LNG facilities. A 24-inch pipeline capable of handling 950 million cubic feet of natural gas equivalent per day (Mmcf/d) will be constructed to transport all natural gas processed through the Alen platform approx. 70 kms to the onshore facilities.

Gross capital expenditures for the development are estimated to be $330 million. Capital expenditures for the project will be incurred in 2019 and 2020, and these amounts have already been included in Noble’s previously communicated capital expenditure guidance.

The Alen field straddles Equatorial Guinea’s Block O and Block I, in which Noble holds stakes of 95% and 5% respectively. It operates the Alen field with a 45% interest. Other Block O interest owners include Glencore with 25% and GEPetrol
with the remaining 30%. Other Block Interest owners include Glencore with 23.75%, Atlas with 27.55%, GEPetrol with 5% and Gunvor with the remaining 5.7%.

**SeaBird Wins West Africa Job**

SeaBird Exploration was awarded two new contracts, one of them for work offshore West Africa. The company received a letter of award for a niche 3D survey in West Africa. The total value of the contract is estimated at approximately $6.5 million.

The survey is expected to commence in Q2, with a total duration of about 80 days. The total duration includes associated vessel transit. Due to fleet positioning and other contract opportunities, SeaBird will time-charter the Nordic Explorer for this survey and will also bid the Nordic Explorer for subsequent opportunities in H2 2019. In connection with the charter agreement, SeaBird will receive nine kilometers of ION Digi STREAMER from the owners of the Nordic Explorer.

**AAOG Updates TLP-103C**

Anglo African Oil & Gas (AAOG) updated the ongoing analysis of its TLP-103C well located on the Tilapia field offshore the Republic of Congo. The well targeted several horizons, including the Djeno, a prolific producer on neighboring licenses. Having encountered oil shows in all target horizons and additional areas, drilling operations at TLP-103C were completed on January 26.

After leaving TLP-103C to stabilize for a period of 45 days, the well was opened to release pressure which was building in the tubing. On opening the well, oil was produced. A sample of this oil was collected and sent to the Congolese state refinery for testing. The results of this test confirm that the oil collected has an API of 43 and that the source of the oil is the Djeno reservoir.

This result therefore confirms the CPI calculations made by Schlumberger in January 2019 which concluded that TLP-103C had encountered oil in the Djeno reservoir. The test also confirms the reservoir’s characteristics and indicates that this oil has moved to surface under its own pressure. This new information will be included in the CPR that is due to be published in the coming weeks.

AAOG also commented on funds owed to it by state-run SNPC. The company revealed that SNPC had agreed to pay monthly instalments, commencing during April of $600,000. These payments will be applied in settlement of monies owed by SNPC to AAOG. Before any upcoming payment during said month, the sum owed amounts to approximately $9.5 million and mostly relates to SNPC’s share of the costs of drilling TLP-103C. SNPC has undertaken to send the company a signed payment schedule confirming the payment plan.

SNPC has also asked the company to re-open negotiations to exchange a portion of SNPC’s equity interest in the Tilapia field in exchange for the forgiveness of the remainder of the debt outstanding once agreement is reached. SNPC has confirmed that it intends to continue making the monthly payments during the negotiation, and on that basis the company has agreed to restart negotiations.

**Tلو picks up new CBM acreage**

Tلو Energy was awarded a new coal bed methane prospecting license by the Department of Mines at the Ministry of Mineral Resources, Green Technology and Energy Security in Botswana. The new license, PL011/2019 designated “Boomslang” is valid for an initial term of three years.

The license area is approximately 1,000 sq km and is situated adjacent to the company’s existing licenses. The Boomslang area is located on-trend with the encouraging results observed to date at the Lesedi project and is considered to be highly prospective.

With initial development operations ongoing at the Lesedi gas field, the award of the adjacent Boomslang area along with the Mamba area provides the company with further flexibility and optionality.

**Bashir Meets with Foreign Operators**

Sudan’s oil minister, Isaac Adam Bashir, met with officials from CNPC, ONGC, and Petronas to explore the possibilities of joint cooperation in exploration. The government’s plan is to organize these three companies in a consortium to explore and develop new exploration blocks to increase its oil supply.

At the meeting, Minister Bashir said he is fully aware of the challenges faced by oil companies operating in Sudan and vowed to eliminate these obstacles. Among the issues addressed by Bashir was security, he did not say how this would be addressed, however.

**Chariot Picks Up New Acreage in Morocco**

Chariot Oil & Gas picked up new acreage in Morocco with the award of a 75% interest and operatorship of the Luxus Offshore License. Morocco’s ONHYM holds a 25% carried interest in the license.

The Luxus License covers an area of approximately 2,390 sq km, 30 km north of Chariot’s existing Moroccan acreage, with water depths ranging from the coastline to 850 meters. The area has been subject to earlier exploration with legacy 3D seismic data covering about 1,425 sq km and four exploration wells, including the Anchois gas discovery.

The Anchois discovery is in Tertiary-aged turbidite reservoirs that occur above a nappe emplaced during the Alpine orogeny and the pay sands have a characteristic and anomalous seismic signature. The company has identified five satellite prospects to Anchois that have tie-back potential, three of which have been audited by NSAI, and Chariot estimates that Anchois and the satellites are holding remaining recoverable resources in excess of 900 Bcf. An additional five prospects have been identified in Luxus in similar geological settings as Anchois but currently without the appropriately conditioned 3D seismic data to confirm comparable anomalous seismic signature, and these prospects have gross mean prospective resources ranging from 66 Bcf to 330 Bcf, as estimated by the company. Seismic reprocessing will be undertaken to reduce the risk for these additional prospects. NSAI will be preparing a Competent Persons Report on these prospects and on Anchois N and Anchois NW. Chariot is also evaluating leads identified in the section below the Nappe which has the potential for giant scale prospective resources.

The initial license commitment, for which Chariot is fully funded, includes a technical program of 3D seismic reprocessing and evaluation to access the additional exploration potential of Luxus. Chariot will also further evaluate the gas market, test development concepts through a feasibility study and seek strategic partnerships and alliances to progress towards a development of the Anchois discovery.
Roll Group Wins Total Ethane Transport Job
Roll Group won a contract to transport 24 modules for the Total Ethane cracker project in the US. The transport will cover seven single voyages, using both RollDock and BigRoll vessels. The first voyage took place in March and the other transports are scheduled to be undertaken between April and August. The modules are currently in the process of building in the UAE. After completion, Roll Group will roll the modules on board of its vessels for transportation to Port Arthur, Texas.

This is the first time that Roll Group will complete the transportation from the fabrication yard to the job site of such a large project - including the land transport, according to Wiebe Broeksma, Roll Group Project Manager. “This was one of the reasons our client awarded the contract to us, since we have the ability to load and discharge the majority of the cargo directly from the quay onto our RollDock vessels and vice versa, due to the limited draft of our vessels.”

Due to the size of the modules, the BigRoll Module Carriers will be utilized on two voyages. Broeksma stated: “When unloading the BigRoll vessels in Port Arthur, the intermediate transport will be arranged by our sister company Roll-Lift USA. A good example of our ‘Factory to Foundation’ ability.”

Dangote Fertilizer and Chevron Sign Supply Deal
Dangote Fertilizer entered into a long-term agreement with Chevron Nigeria Limited (CNL) for the delivery of LNG from Chevron’s supply portfolio to the fertilizer plant. The contract, under the Gas Sale and Aggregation Agreement (GSAA) is part of Chevron’s gas obligation to the domestic market through the Gas Aggregation Company Limited (GACN).

Speaking at the signing ceremony in Lagos, Group Executive Director, Strategy, Capital Projects & Portfolio Development, DIL, Devakumar Edwin, commended the Managing Director of GACN for his role in the new business relationship between Dangote Fertilizer Limited and Chevron Nigeria Limited.

He said the company is looking forward to having a long-term relationship with Chevron Nigeria Limited as well as synergies in other upstream and wider areas of operations in the oil and gas sector.

Chairman/Managing Director, CNL, Jeffrey Ewing said: “We are looking forward to working with Dangote Fertilizer and maintaining a good relationship with the company. This agreement is very important for the country and Chevron is committed to Nigeria’s economic development.”

Tanzania LNG Talks to Begin in April
Tanzania’s Energy Ministry says that talks with foreign operators on the development of its planned LNG facility should conclude in September. Talks are expected to begin early next month.

Construction of an LNG export terminal near huge offshore natural gas discoveries in Tanzania’s deepwater arena have been delayed by regulatory issues for a few years.

“The government has officially decided to begin talks in early April for construction of the LNG project,” Tanzania’s energy ministry said in a statement. “We are keen to implement this key project for the economy and we plan to … conclude the talks in September this year.”

The talks are aimed at negotiating a host government agreement, which is seen as a crucial step towards reaching a FID for the project. The decision to push talks forward was reached following a meeting on March 22 between the African country’s energy minister, Medard Kalemani, and Mette Ottoy, a senior VP at Equinor.

Equinor, alongside Royal Dutch Shell, ExxonMobil and Ophir Energy, plan to build a $30-billion onshore LNG plant.

FID on Nigeria’s Train 7 Expected in Q4
The final investment decision (FID) on Train 7 of Nigeria Liquefied Natural Gas Co.’s LNG plant in Nigeria is expected to be taken by Q4 of this year. The company said that funds for the seventh train were being sourced in order to actualize the project.

Train 7 will grow NLNG’s production capacity from 22 mtpa to 30 mtpa, once completed.

MD of NLNG, Tony Attah, said that the company’s shareholders, which consist of Shell Total, Nigerian Agip Oil Co., and NNPC, are supportive of the Q4 FID.

Maire Tecnimont Units Win Port Harcourt Refinery Rehab
NNPC’s subsidiary, Port Harcourt Refining Co. Ltd. (PHRC), contracted subsidiaries of Maire Tecnimont SPA to provide services as part of the first leg of a long-planned rehabilitation project at the Port Harcourt refining complex. The complex includes a 60,000-bpd hydro skimming refinery and a 150,000 bpd full-conversion refinery.

The Maire Tecnimont SPA subsidiaries, Tecnimont SPA and Tecnimont Nigeria Ltd. (TNL), will carry out a complete integrity check and equipment inspections of the complex under the $50-million contract, Maire Tecnimont said.

Tecnimont and TNL’s scope of work under the Phase 1 Rehabilitation program will involve a six-month assessment at site, including relevant engineering and planning activities in preparation for the second phase of the refinery modernization project, which will entail a full rehabilitation of the complex aimed at restoring the refining capacity to a minimum 90% of capacity utilization according to the company.

Subject to successful completion of the integrity check, Tecnimont and TNL, in collaboration with an unidentified partner, also will execute the EPC for the project’s second phase, Maire Tecnimont said.

Wood Wins USA Pipeline Project
Wood was awarded a $34 million contract from RH energytrans LLC to construct 28 miles of new pipeline designed to carry natural gas from Pennsylvania to Ohio, through a competitive tender process. Wood’s scope also includes the
construction of the North Kingsville meter station in Ashtabula County, Ohio.

The Risberg pipeline will connect to approximately 32 miles of existing pipeline, originating in the Meadville, Pennsylvania area, extending in a northwest direction and terminating at the North Kingsville Meter Station. Approximately 16 miles of new pipeline will be installed in Pennsylvania and 12 miles in Ohio. The project is underway and is expected to be completed in summer 2019.

MHI Selected to Supply Turbines for Rovuma LNG
Mitsubishi Heavy Industries, Ltd. (MHI) reached an agreement with ExxonMobil and its co-venture partners to supply H-100 gas turbine and compressor packages for the Rovuma LNG Phase 1 project in Mozambique. Subject to FID on the project, Mitsubishi Heavy Industries Compressor Corporation (MCO) will supply the main liquefaction compressors, and Mitsubishi Hitachi Power Systems, Ltd. (MHPS) will provide dual-shaft, 120-MW H-100 gas turbines as the mechanical drivers.

MHI said it is pleased to be selected for the Rovuma LNG project, which plans to utilize the Air Products AP-X® process to build one of the world’s largest natural gas liquefaction plants in Mozambique’s remote northern area. The project plan is for two liquefied natural gas trains, each expected to produce at least 7.6 million tons per annum.

$30 Billion Injection into African Downstream
According to the African Refiners and Distributors Association (ARA), the significant achievements in the current massive $30 billion investment push into the African downstream have been in logistics, distribution, storage terminals, import facilities and retail marketing. The investment is most evident in countries such as Nigeria, South Africa, Morocco and Angola.

Africa has been identified as arguably the only place in the world where demand is steadily growing, at around 4% a year in gasoline and diesel, because of the massive growth in the continent’s economies. The growth is attributable in part to a significant increase in population, while efficiency, communications, and growth in GDP are leading to more expenditure on energy.

In the refining sector, that has faced many challenges, there are green shoots of investment; most notably the huge Dangote Refinery in Nigeria, which is progressing fast, with refining units soon to be installed. On completion, this facility will massively alter the profile of fuel supply in Africa, but it will, in effect, just slow down the level of imports that remain essential as the continent continues to grow. But Dangote is not the only investor in refining.

In Egypt, Africa’s largest refiner, EGPC outlined its massive investment program for its eight refineries in addition to the imminent start-up of the privately financed $4.5 billion project at the Egyptian Refining Company (ERC). Algeria, too, has been investing heavily in upgrading its refining system.

Keynote speaker at the conference, Minister of Energy of Cote d’Ivoire Abdourahmane Cissé, presented the €600 million new finance package for the SIR refinery in Abidjan and announced the planning for upgrades to meet the ARA’s AFRI-4 specifications. Also under the spotlight was the rapidly progressing Uganda Refinery.

Other topics extensively discussed by the active 600 participants were an idea presented by Tope Shonubi, CEO of Sahara Energy, to develop an African ‘brand’ to encourage tearing down of barriers to trade; and the endorsement of ARA’s ongoing work with regional economic communities and the African Union, to harmonize gasoline and diesel specifications.

Presentations by the African Development Bank, the African Finance Corporation and Standard Bank focused participants’ attention on the critical need to create the right structures to satisfy the massive requirement for finance to meet the growing demand in Africa.

Libya to Restart Petrochem Plant by Mid-April
The Ras Lanuf Oil and Gas Processing Company (RASCO), a subsidiary of Libya’s state-owned oil company NOC, will see a restart of its polyethylene plant by mid-April. The plant had suspended operations in 2013 due to conflicts between armed groups.

Several of its components were particularly affected and destroyed during the fighting and currently a host of maintenance work is being undertaken. According to RASCO, an incinerator has just been replaced.

In April 2018, RASCO reported that the Ras Lanuf ethylene plant, which has been inactive since 2011 for the same reasons as polyethylene, would restart “soon”, without specifying the date. In Libya, industry officials place great hope in restarting the Ras Lanuf petrochemical complex to boost government revenues, diversify them and build a new growth outlet for the NOC.

Southern Libyan Fuel Crisis at an End
Brega Oil Marketing Company confirmed the arrival of 2.8 million liters of gasoline to the southern region, in addition to about 200,000 liters of diesel and 40 tons of liquefied gas.

In a statement, Brega said that the fuel convoys have been sent to multiple cities in the south over the past few days. The statement went on to declare the end of the fuel deficit in the region after providing fuel at gas stations at the official approved price.

It also urged citizens in the south to report any violations with respect to the distribution of fuel, according to the statement.

South Africa Negotiating Refinery with South Sudan
South Africa is negotiating an oil deal with South Sudan, Energy Minister Jeff Radebe said when speaking to the media. The Minister’s statement follows reports that the country was in talks to construct a refinery in South Sudan.

Radebe said the negotiations with South Sudan were not exclusive and it was also looking at securing deals in other countries like Nigeria and Equatorial Guinea.

Reports of a $1-billion refinery deal with South Africa first emerged earlier this year, saying Cape Town had already spent almost $1.4 million on the refinery project. Radebe and the government were criticized by lawmakers of going about the deal in a secretive way. The Energy Minister dismissed the criticism saying it was “above board” in South Africa’s oil and gas negotiations with South Sudan.

Braskem Contracts Siemens for Sao Paulo Petrochem
Braskem entered into an agreement with Siemens to modernize a cogeneration power and steam
plant at its petrochemical complex in Sao Paulo, Brazil. Completion of the project is expected in early 2021.

Siemens will be responsible for implementation and the 15-year operation of an electric and steam cogeneration plant. The plant’s state-of-the-art technology solutions will combine high energy efficiency and extreme operational reliability with low emissions. Project deployment is already underway, whereby Siemens will implement a fully integrated and redundant equipment solution, including two SGT600 gas turbines, an E-house, as well as an extension of the existing high-voltage substation, three reciprocating compressors, an advanced load-shedding system, and associated software for plant control.

Braskem’s project involves the complete overhaul and technological update of the existing cogeneration plant, which provides steam and power to the petrochemical complex’s cracking unit. The unit has an ethylene production capacity of 700,000 metric tons per year (kta) and produces raw materials for the chemical and plastic sectors. The optimized design leads to an increased efficiency of the ethylene plant. Braskem estimates that the upgrade project will reduce the cracking unit’s water consumption by 11.4 percent and CO2 emissions by 6.3 percent.

The power output of the SGT-600 turbine is 24 MW. For this application, each turbine will provide 19 MW of power and 80 tons per hour (t/h) of steam. In addition, they will feature third-generation dry low emissions (DLE) technology and run on residue gas with high concentrations of hydrogen. The DLE technology will reduce CO2 emissions, and NOx levels from the turbines will be low at just 25 parts per million (ppm). A load shedding system ensures safe operation of the plant by managing all loads depending on the available power supply.

The entire electric and steam cogeneration plant will be engineered, deployed, operated, and maintained by Siemens for a period of 15 years under a long-term contract that includes performance guarantees for reliability, availability, efficiency, costs, maintenance, and emissions.

Baru Reveals Algeria Pipeline Plans
Nigeria is considering taking its planned northern corridor gas supply pipeline further north. NNPC, the state-run oil and gas firm, plans to extend the ongoing Ajaokuta-Kaduna-Kano (AKK) gas pipeline system across the Sahara to Algeria. NNPC indicated more than six months ago that it was working with a Chinese consortium to finalize the term sheet for financing of the 614-km pipeline project estimated to cost $2.8 billion.

Baru also revealed that the government plans to extend the WAGP to Morocco, reaffirming the government’s plan to the WAGP to Morocco, and commended PETAN for its contribution to the development of the Nigerian petroleum industry. The NNPC chief confirmed the company was making progress in its search for oil in the northern part of the country, adding that the Kolmani River-II well, which spud last month, has recorded a drilling progress of 6,700 ft. According to a statement, Baru made the disclosures when he received an award from executives of the Petroleum Technology Association of Nigeria (PETAN). The statement signed by NNPC’s Group General Manager, Group Public Affairs, Ndu Ughamadu, quoted Baru as saying that the target of the corporation for the Kolmani River drill was 14,200 ft, even as he added that the depth could be longer, depending on findings.
Weatherford International brought to market the world’s first remote-activated, single-trip deepwater completion system. By combining the upper and lower completions in one trip, the system has been shown to reduce installation time between 40-60 percent and to reduce rig time by four to six days.

Using radio-frequency identification (RFID) technology, the field-proven TR1P system delivers 100 percent intervention-less operation in both producer and injector wells. The industry has already taken note of TR1P’s deepwater capabilities: It has been named a Spotlight on New Technology® Award winner by the Offshore Technology Conference (OTC) ahead of their 2019 event to be held in Houston, May 6-9. TR1P also received a Meritorious Award for Engineering Innovation from Hart Energy publishing. Both awards are presented for break-through innovation products impacting offshore exploration and production.

Rigworld Training Center (RTC), out of Ghana, signed an agreement with the Ecole Superieure de Dakar (ESP) to introduce oil and gas specific courses aimed at meeting demand for local expertise in Senegal. RTC’s new agreement with ESP is expected to upgrade local skills in order to shape young professionals to engage in the oil and gas and mining sectors.

Daba Dieng, Rigworld Group West Africa Manager stated: “This model of partnership between African structures (Ghana and Senegal) comes at the right time to meet the challenge of vocational training adapted to new jobs emerging in oil & gas, mining, etc.”

The agreement follows Senegal inaugurating a National Petroleum Institute (INPG) to shape oil and gas engineers in Q4 2018. In order to increase numbers and training options, the private sector is also taking on the challenge. Dubai-based Dermon Oil & Gas announced the launch of an academy just a few weeks ago.

Smart Data Solutions, part of CGG’s Geoscience division, has opened a new state-of-the-art reservoir fluids and gas sample storage facility in Schulenburg, just west of Houston, Texas. To ensure the integrity of stored sample assets, the purpose-built 60,000 cu. ft. facility is securely enclosed and video-monitored. It also offers the latest in automated fire protection security and spill containment, all delivered in a cost-effective, state of the art storage solution.

Combined with the existing 23 storage buildings and laboratory, CGG offers oil and gas companies over 4 million cubic feet of storage capacity and associated services for long-term, high-volume oil and gas asset sample storage, all under one roof. The facility design prioritizes lower storage costs and optimized storage allocation in a variety of controlled conditions (frozen, chilled, A/C and ambient environments), making these facilities an excellent location for E&P companies to locate their entire sample inventories.

Instant data access, online searching, reporting and ordering of samples is enabled by CGG’s PleXus system, an integrated system of record with associated chain of custody tracking.

Kamal Al-Yahya, SVP, Geoscience Software & Smart Data Solutions, CGG, said: “With over 40 years of experience in sample management and analysis, CGG understands the true business value of these assets for our clients and their highly specialized needs. Our new world-class Schulenburg storage facility offers clients a complete, cost-effective and convenient solution for all critical true source asset storage.”
**Finnish-Russian Firm Tests Solution to Boost Production, Eyes Africa**

ZYFRA Group, Finnish-Russian AI and IIoT solutions developer has successfully tested an Electrical Submersible Pump (ESP) software unit, designed to enhance the efficiency of oil extraction by boosting oil well production rates by 1.5 percent without any additional capital investment.

The ESP software unit is now operational for more than three months in 500 oil wells in Western Siberia, Russia, which makes an additional profit of $2 million and the growth in production is 1.5 percent.

It is equipped with artificial intelligence to provide recommendations based on historical Big Data analysis. The unit recommends a mode of well operation that will ensure maximum oil flow rate for a certain period of time and provides for stable operation during that period by analyzing current frequency, gauged oil flow rate, periods of intermittent pump operation and other operating parameters.

The highest demand for the ESP software unit is expected from Russia, US, China as well as from African markets like Sudan, Libya, Algeria, and Egypt.

“Scientists regularly claim that the era of oil will end soon and that readily available hydrocarbons are almost exhausted. The digitalization of the oil and gas industry will help simplify extraction of hard-to-recover oil while at the same time extending the lifespan of the oilfield by more than one decade,” said Dmitry Krikunov, ZYFRA’s AI team leader in the oil & gas sector.

“The primary motivation for investing in digitalization is to improve efficiency. According to Gartner, the ‘smart oil deposit’ concept could help oil companies to cut costs by 5 percent and enhance production volumes by 2 percent. CERA calculates that ‘smart oil and gas deposits’ could cut production costs by 1-6 percent, shrink oil-well downtime by 1-4 percent and reduce labor intensity by up to 25 percent,” said Krikunov.

ZYFRA has cumulatively earned more than $3 million from India-related deals. The company plans to enhance its presence in the Indian market and reach the target of $50 million in deals by 2021.

**Emerson/Repsol Cooperate on Advanced, Cloud-Based Exploration & Development Software**

Emerson and Repsol announced recently that they have established a strategic alliance to deliver advanced subsurface geophysical technologies to significantly reduce the time to prospect and produce first oil.

To achieve this critical industry goal, Emerson will work collaboratively with Repsol to implement and deploy advanced subsurface imaging technologies, with core technologies developed by Repsol as part of Kaleidoscope, its 10-year innovation project. These advances will be used by a broad range of the geoscience community within Repsol and in all oil and gas companies that choose to license the technologies. The solution combines the latest in high-end visualization, high-performance computing and cloud delivery.

These technologies have contributed to the exploration success ratio of Repsol, with special significance in settings of complex geology in countries like Brazil, Peru and Bolivia.

“Emerson is helping the energy industry implement the latest digital technologies to realize significant performance improvements,” said Lal Karsanbhai, executive president of Emerson’s Automation Solutions business. “We’re proud of our collaboration, to help Repsol bring this subsurface reservoir imaging innovation to the geoscience community. It is a great example of how technology and collaboration can deliver business value for the oil and gas industry.”

The partnership, which includes a joint investment of both research and development, will enable Repsol and Emerson to produce commercially available software products for license to help other oil field operators and service companies.

“The strategic partnership between Emerson and Repsol will enable the oil and gas industry to benefit from the deployment of our proprietary core technologies related to the enhancement of seismic processing and interpretation,” said Tomás García Blanco, executive managing director of exploration and production for Repsol.

“Our collaboration will build technology bridges between the domains of seismic imaging and interpretation, bringing high-end technology awareness and access to a broader geoscientist community.”

The first phase of the collaboration will provide advanced solutions for velocity determination, including full waveform inversion and advanced solutions for seismic imaging developed in the Repsol Technology Lab. In addition, the collaboration can be extended to a broader range of Repsol subsurface technologies.

Emerson’s E&P software portfolio – which integrates and forecasts oilfield data with production and reservoir engineering fundamentals – and its advanced cloud-based platform are designed to help operators increase efficiencies and achieve Top Quartile performance on investment and operational goals within new and established oil and gas reservoirs. Top Quartile performance is defined as achieving operations and capital performance in the top 25 percent of peer companies.
What motivated the recent change in licensing procedures in Angola?

H.E.: Strictly speaking, there was no change in licensing procedures in Angola, but only a reduction in the duration of public tenders, which normally exceeded 365 days, to 224 days. (Decree 86/18 of 2 April). This amendment intends to give greater dynamism and speed to the bidding process, allowing greater frequency in the adjudication of new areas.

Will Sonangol continue to handle licenses and negotiations until the National Oil and Gas Agency is fully established and operational?

H.E.: The ANPG – Agência Nacional de Petróleo e Gás, implementation plan and transfer of the National Concessionaire function was designed so as not to cause disruption in the work of the National Concessionaire. With the amendment by the National Assembly of laws 10/04 and 13/04, Petroleum Activities Law and Taxation Law of oil activities, in particular, the premises are created so that the ANPG can fulfill its duties.

What factors determined the phased production schedule between 2019 and 2025?

H.E.: First, production forecasts are established on an annual basis and forecasts for the period 2019-2025 have been drawn up taking into account the Sector Strategy which aims, among other things, to:
- Ensure the replacement of reserves, promoting the exploitation activity in a rational and adequate manner;
- Initiate measures suitable for the confirmation of the country’s oil potential;
- Provide enough crude oil to meet internal refining capacity, by weighing the economic viability of the export versus import.

The next licensing competition will also include the marginal fields, according to reports. What are these fields and what incentives are there to attract investors?

H.E.: Although the Concession allocation map contained in the General Strategy does not contemplate blocks with marginal fields, the Executive, through its National Concessionaire, has developed legislative and other actions to encourage investment in the development of marginal fields. With the conditions already created, we believe that some proposals of this nature will be developed in the near future.
Are there Angolan companies in the oil and gas exploration and production industry that have the qualifications to participate in the planned competitions?

H.E.: There are some national companies in the country, which we believe have the technical and financial capacity to participate in possible competitions, such as Sonangol P & P, Somoil, etc. Other national companies may also participate if they develop the necessary organizational and technical capacities to capture the investments required for this type of activity.

PA: The Ministry acknowledged that the new exploration programs are waiting for investments to increase production, which is already in decline. Are there ongoing efforts to extend the life of today’s fields with improved oil recovery techniques?

H.E.: The decline in oilfield production is a natural, predictable and quantifiable process, allowing strategies and methodologies to be slowed down, thus increasing the volume and/or the useful life of mature fields. The different operators in the national market have channeled several programs involving improved methodologies and techniques to optimize the levels of recovery of crude oil in their concessions. For example, new seismic studies have allowed to identify areas of reservoirs not properly exploited, facilitating the drilling of new wells with positive results.

PA: In your opinion, what are the most attractive gas monetization projects available in Angola?

H.E.: The country currently produces about 3 billion cubic feet a day of associated natural gas. In the past much of this gas was burned, missing the opportunity of its economic and financial recovery, in addition to the evils caused to the environment. In order to take advantage of this resource in the then discovered deepwater oil fields, it was decided to build a gas liquefaction plant – Angola LNG – which is currently the only project for gas monetization and which can be the example to leverage other industrial projects of gas monetization, such as fertilizer factories, etc. Several projects have been proposed and MIREMPET – Ministry of Mineral Resources and Petroleum – is preparing the Gas Master Plan, which will assist in the definition of feasible gas monetization projects.

PA: Is there any relevant aspect of Angola’s future industry plans that is important to add here?

H.E.: The oil and gas sector is undergoing restructuring with the creation of the Oil Derivatives Regulatory Institute (IRDP) (whose function is to ensure the objectivity of the regulation rules and the transparency of commercial relations between the various agents involved in the segment of downstream) and of the National Oil and Gas Agency (ANPG) (new national concessionaire). A restructuring program for Sonangol is underway to focus on its core business of exploration, production, refining and commercialization.

Several legislative initiatives have been produced to improve the business environment, encourage investors and increase the availability of petroleum resources. As an example, Presidential Dispatch no. 290/17, of 13 October, stands out; Presidential Legislative Decree No. 2/16 of 13 June and the new Diploma on the principle of tolerance and contractual flexibility in order to meet the current requirements of the oil market to promote the development of marginal fields.2

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Many medical protocols are written for the Oil & Gas industry relating to countries and areas where access to hospital care is relatively easy. They vary from country to country and some are stricter than others but, in the main, they are proven for the areas in which they are used. Such protocols, however, have not necessarily been considered for use in regions such as remote parts of Africa; isolated, harsh industrial environments, or offshore installations. To ensure high quality care and to avoid unnecessary medevacs or recordables in these places, medical guidelines need to be environment-specific.

Medical protocols are a set of guidelines followed by an emergency medical technician or nurse that is responsible for a group of oil & gas workers. They provide a clear, logical structure for clinical management and are a vital part of ensuring consistent, high quality patient care. For Emergency Medical Services (EMS) they are now an excepted and proven method of increasing the level of medical care in a community by providing paramedics with a way to administer medicines and make best choices without the support of a fully qualified doctor. For medical support in some of the most remote parts of our planet, however, it is vital these protocols reflect the options and conditions that are available to the clinician.

When definitive hospital care is distant from the oil & gas operations, even seemingly simple medical concerns can be complicated and quickly escalate if not handled correctly. “Cookbook” medicine, which prescribes specific responses to scenarios, is not a practical approach and to ensure best outcomes, paramedics may need to go beyond their normal limits of practicing medicine as seen in cities and developed countries. Having the correct, location-specific, Remote Health Care Provider (RHCP) protocols in place standardizes the quality of medical care provided, regardless of what resources are available locally, and helps ensure highest quality, evidence-based patient care while avoiding unnecessary case escalations and evacuations. These guidelines, combined with expert remote medical support via telemedicine, result in safe implementation of treatments to the same level as a physician and to modern care quality standards.

In remote regions, local medical care may already be in place, but the standard of treatment may vary dramatically. In such circumstances, experts in remote medical services can offer an HSE oversight and provide appropriate, workable, RHCP guidelines so local physicians can provide the necessary level of care. Through oversight, auditing, 100% chart review, and providing guidance to local doctors, local resources can be fully integrated into a comprehensive, high quality care package of an assured standard.

RHCP guidelines need to be available for different patient presentations and provide onsite medics the information they need to make the right decisions. These guidelines, however, should not be prescriptive and require appropriately trained medical staff in place who can use the guidelines, interact with the patient and make an active judgement on the required course of action. With the right protocols and suitable medical providers available locally, patients can be placed into well-defined risk groups, additional telemedicine support sought if needed.
and evacuation to hospital only becomes an option when it is appropriate to do so. Generalized or outdated protocols and poorly trained staff, on the other hand, often make medical evacuation the default option, even if it is not required.

Of course, this approach only truly minimizes escalation and evacuation if onsite medics have the telemedicine support of experienced, board-certified physicians trained in both emergency medicine, occupational medicine, injury management, and operational medicine. RHCP guidelines need to clearly advise when tele-consultation is required. Circumstances will include the prescription of certain medicines or specific symptoms or injuries that indicate complex cases. Even if not required by the guidelines, the onsite clinician can still obtain a second opinion from these experts if they have any doubts whatsoever. This gives remote, highly-trained, local medical practitioners the freedom to make judgements against the guidelines while setting clear thresholds for consultation. This team approach has been proven to ensure appropriate decisions are made and patient outcomes are consistently improved within the oil & gas industry.

Beside the need for medical protocols to be location-specific, they also need to be continually renewed and updated in line with latest knowledge, ongoing learning from field cases and medical advances. Along with the peace of mind that an employer is working with a remote medical expert, this regular review of guidelines ensures employees working in harsh, industrial settings get the best and most appropriate medical care at that point in time.

Summary - higher quality medical care often costs less overall
For oil & gas companies, using a higher quality medical provider may add additional initial cost. Compared with using a standard medical package, however, a carefully selected combination of bespoke services to suit the needs of the location and the provision of highly trained medical personnel may better meet care needs while actually reducing the overall cost with fewer evacuations. Using remote medical experts, both employers and their employees can have the assurance of consistent, high quality medical support and a partnership that works to continuously improve medical care and outcomes wherever they are in the world.
Each year when *Petroleum Africa* reviews the offshore progress that has been made in bringing oil and gas developments online, a number of top projects stand out; the past year was no different.

**World First**

The feather in Africa’s cap for the period came in the form of offshore natural gas production. The continent saw a ‘world first’ in March 2018 when the first “converted” floating liquefied natural gas (FLNG) vessel came into service, offshore Cameroon.

The *Hilli Episeyo* FLNG vessel was converted from the 294-meter, 1975-built Moss LNG carrier with a storage capacity of 125,000 m3. It was designed for a liquefaction capacity of about 2.4 million tonnes of LNG per annum. This FLNG unit is also the first such facility in Africa, and the second in the world to come online. The first offloading and commercial operations began in May 2018.

The *Hilli Episeyo* is anchored 2 km from the Sanaga 1 platform off Kribi. It is equipped with four liquefaction trains, each to produce between 500,000 to 700,000 tons per year of LNG. The Sanaga South gas fields, the Bipaga complex and the *Hilli Episeyo* were connected by 56 kms of multiphase pipeline to transport gas to the onshore processing plant (CPF) to be separated from its liquids by low temperature treatment, then exported to the floating terminal by three turbochargers to be liquefied and stored. The liquefied petroleum gas is extracted by a series of two columns and stored in two spheres to supply the local market.

Perenco states that these facilities, as a whole, “allow Perenco and state-firm SNH to produce 1,200,000 tons of LNG for export, 26,000 tons of domestic gas for Cameroonian households; and 3,300 bopd stabilized condensates exported on the Ebome field, giving a second life to tanker *La Lobe.*”

**Angola**

*Kaombo*

Last November, Angola saw the inauguration of Total’s Kaombo project offshore the country on Block 32 where the project came on stream in July. The Kaombo is the biggest offshore development in Angola. The project comprises a large subsea system including 59 wells (with over 60% of them already drilled), and two FPSO units which were converted from Very Large Crude Carriers. Kaombo also sets a new record in terms of local content in Angola as 20% of the 110 million project hours were worked locally.
The full Kaombo development consists of six fields spread over an area of 800 sq km. Gengibre, Gindungo and Caril were connected to the Kaombo Norte FPSO which started up last year, while the three fields, Mostarda, Canela and Louro, have now been connected to the Kaombo Sul FPSO.

A total of 59 wells will be connected to the two FPSOs through one of the world’s largest subsea networks. Together, they will develop the resources of all six previously mentioned fields over an area of 800 sq km in the central and southern part of the block.

The first FPSO, Kaombo Norte, came on stream in July 2018, with a production capacity of 115,000 bpd and the start-up of the second FPSO of similar capacity, Kaombo Sul, came in March of this year. The overall production will reach an estimated 230,000 bpd at peak and the associated gas will be exported to the Angola LNG plant as part of the Group’s commitment to stop routine flaring.

"Leveraging the experience of Kaombo Norte, Kaombo Sul started up in the best possible conditions. This second FPSO stands out as an excellent example of standardization to reduce costs and improve efficiency. Its start-up will contribute to the Group’s cash flow and production growth in 2019 and beyond," stated Arnaud Breuillac, President Exploration & Production at Total. "This achievement demonstrates once again Total’s commitment to Angola, as the Group develops short cycle projects on Block 17 in parallel ..."

**West Hub/East Hub**

Italian major ENI operates Block 15/06, which lies around 350 km north-west of Luanda and 130 km west of Soyo. Production from the Vandumbu field came onstream in December. The Italian firm started production from the field through the West Hub N’Goma FPSO.

First oil from the Vandumbu field was achieved in late November 2018, three months ahead of schedule. This, along with the start-up of a Subsea Multiphase Boosting System (SMBS) achieved in early December, is boosting the oil production from Block 15/06 by 20,000 bpd. The ramp-up of Vandumbu was completed in Q1 2019 with the start-up of the VAN-102 well which achieved an initial production rate of 13,000 bpd. This, together with the start-up of another production well in the Mpungi field, will bring the production of Block 15/06 to a total of about 170,000 boepd, further extending the production plateau.

ENI’s CEO, Claudio Descalzi revealed that the company was on track to see production from the Zohr field reach 2.9 Bcf/d by mid-2019. He also confirmed that by mid-2019, seven trains would be processing the production.

And the company is well on its way to achieving its goals. In April 2018 the start of T-1 increased the field’s production capacity to 800 Mmcf/d, and then a few weeks later the third production unit (T-2) increased the installed capacity to 1.2 Bcf/d. This outstanding result was achieved only a few months after the first gas in December 2017 and one year before the schedule of the Plan of Development (PoD). By September 2018, the field was producing 2 Bcf/d, equivalent to approximately 365,000 boepd. This level of production was achieved thanks to the start-up of the fifth production unit (T4), backed by the eight gas producers and a new 30” x 218 km sea line, commissioned in August. In February 2019, Zohr had reached 2.1 Bcf/d.
By early April of this year, ENI had launched work on its seventh natural gas processing plant at the Zohr field, following the completion of the sixth processing plant at the end of March. The plant is set to boost the field’s production capacity to 2.7 Bcf/d by the end of July.

According to Egypt’s Ministry of Petroleum, investments by the partners over the 2019/2020 fiscal year will “intensify development activities in the Zohr area.” Zohr development costs in fiscal 2018/2019 (to end-June) were put at $3.2 billion, the Ministry said, adding Zohr partners plan to invest an estimated $1.2 billion during the 2019/2020 fiscal year.

**Nigeria**

**Egina**

Production started from Nigeria’s latest mega offshore development in December. Total, the operator of the development, brought the Egina field on to production on December 29. At plateau the Egina is expected to produce 200,000 bpd.

The Egina field is located at water depths of between 1,400 and 1,700 meters, 200 kilometers offshore from Port Harcourt. The project is based on a subsea production system connected to a FPSO designed to hold 2.3 million barrels of oil. Weighing close to 220,000 metric tons and measuring 330 meters long by 60 meters wide, the Egina FPSO is the largest ever built by Total. The FPSO is connected to 44 subsea wells at a depth of 1,600 meters.

This project has involved a record level of local contractors. Six of the 18 modules on the FPSO were built and integrated locally, and 77% of hours spent on the project were worked locally. Startup was achieved close to 10% below the initial budget, which represents more than $1 billion in capex savings, due in particular to excellent drilling performance where the drilling time per well has been reduced by 30%.

Arnaud Breuillac, President Exploration & Production, at the time, stated, “Furthermore, some upside potential nearby remains to be developed and we are studying in particular Preowei discovery tie-back to the Egina FPSO.”

The Egina field is the second development in production on OML 130 following the Akpo field, which started-up in 2009. The Preowei field is another large discovery made on this prolific block for which an investment decision is scheduled to be taken this year.
While market dynamics have changed repeatedly over the past decade-and-a-half on concerns the market is either over- or under-supplied, the long-term outlook for other natural gas producing countries to successfully monetize their resources as LNG is good. At present Australia and Qatar are leading the LNG export race but with recent analysis bullish on demand growth, the door is seemingly open for new entrants.

Despite the growing supply base of LNG around the world there are a host of reasons that LNG remains a positive bet for investors. Besides the potential economic aspects, one reason in particular stands out: meeting the increased energy demand as the world’s population expands over the next few decades. According to Shell in its “LNG Outlook 2019” report, “by 2070 the world is likely to be using at least 50% more energy than it does today as population grows and people seek to improve their quality of life.”

It is apparent there will be future markets for LNG as fossil fuel usage is not going away any time soon until long-term, sustainable solutions are developed and brought online around the globe. According to Shell, “Strong demand for cleaner-burning fuel in Asia continued to drive rapid growth in liquefied natural gas (LNG) use in 2018, with global demand rising by 27 million tons to 319 million tons.” The report continued, “Shell expects demand to reach about 384 million tons in 2020. Global LNG supply is set to rise by 35 million tons in 2019. Both Europe and Asia are expected to absorb all this additional supply. A rebound in new long-term LNG contracting in 2018 could revive investment in liquefaction projects. Based on current demand projections, Shell still expects supplies to tighten in mid-2020s…” This is good news for countries looking to become LNG exporters.

Africa’s Current Producers

Algeria, Egypt, Equatorial Guinea, Libya and Nigeria are already long-established LNG exporters, and some have plans to increase their exports or add new trains, and expand their capacity for export. Algeria’s Sonatrach, for example, contracted China Harbor Engineering Company (CHEC) in January for port installations and a LNG terminal. Under the $455-million contract, CHEC will provide studies of, and set up a terminal for LNG, plus it will build marine and harbor infrastructure for a fuel terminal at Skikda.

The project is expected to take over two years to complete and will allow for the upgrade of LNG production to 220,000 cubic meters per day and the loading of large capacity methane tankers between 50,000 and 250,000 tons. Part of Sonatrach’s 2030 Strategy includes the construction of a new LNG terminal and the expansion of the oil terminal at Skikda, which will allow the company to increase its production and open up to more international markets.

To the west, the final investment decision (FID) on Train 7 of Nigeria Liquefied Natural Gas Co.’s LNG plant is expected to be taken by Q4 of this year. The company said that funds for the seventh train were being sourced in order to actualize the project. Train 7 will grow NLNG’s production capacity from 22 mtpa to 30 mtpa, once completed. Equatorial Guinea, while having a conventional liquefaction plant, has plans to become a small volume LNG exporter under its LNG2 initiative. These small volumes are targeted to go to its West African neighbors via floating LNG (FLNG). It was announced last year that Togo, would
study the import of LNG from Equatorial Guinea, and its regasification and use for power generation.

Also online are the Angola LNG plant and Cameroon’s floating LNG (FLNG) facility, both are relative newcomers to the African LNG scene. Coming onstream in 2013 at a cost of $12 billion, the Angola LNG project is one of the largest single investments in the Angolan oil and gas industry. Angola LNG’s use of associated gas as a primary feed source is unlike other LNG projects which tend to use non-associated gas. As a result, the plant significantly contributes to the elimination of gas flaring in Angola. The plant is designed to process 1.1 Bcf of natural gas per day and has the capacity to produce 5.2 million tons of LNG per annum – plus natural gas, propane, butane and condensate.

Cameroon made industry news when it brought its FLNG project onstream in March 2018. Perenco and state firm SNH in September 2015 signed an agreement with Golar LNG to develop the remaining reserves of the Sanaga field into LPG for the domestic market and LNG for export through an innovative FLNG vessel to be moored offshore Sanaga. The Hilli Episeyo was converted from the 1975-built Moss LNG carrier with a storage capacity of 125,000 m3, this conversion was a world first and the FLNG facility, and African first. It was designed for a liquefaction capacity of about 2.4 million tons of LNG per annum.

In 2010, Anadarko made its first discovery in the Offshore Area 1 of the deepwater Rovuma Basin. To date, the company and its partners have discovered approximately 75 trillion cubic feet (Tcf) of recoverable natural gas resources in Offshore Area 1 and are working to develop one of the world’s most significant LNG projects. Mozambique’s plans are well underway. The project is progressing towards developing initially an onshore LNG plant consisting of two LNG trains with total nameplate capacity of 12.88 mmtpa to support the development of the Golfinho-Atum field located entirely within Offshore Area 1. With the approval of the development plan in February 2018, ongoing resettlement implementation activities, site preparation and execution of sales purchase agreements (SPAs), the final investment decision is expected in H1 2019.

This past March, ONGC Videsh revealed that the Mozambique LNG1 Company, which is the JV marketing company of ONGC Videsh and the other partners, entered into long-term LNG SPAs with several companies. The SPAs include deals with Tokyo Gas and Centrica LNG Company through a co-purchasing agreement for the sale of 2.6 mmtpa from the start-up of production until the early 2040s. Another agreement was signed with CNOOC Gas and Power Singapore Trading & Marketing (CNOOC) for 1.5 mmpta for a term of 13 years, and Shell International Trading Middle East for 2 mmpta for a term of 13 years.

The latest deals signed for Area 1 LNG are with fellow Indian firm Bharat Gas Resources for 1 mmpta for a term of 15 years, and Pertamina, a state-owned oil and gas company of Indonesia, for 1 mmpta for a term of 20 years. These deals build upon previously executed deals for long-term offtake of LNG from the Rovuma Offshore Area 1 project and take long-term sales to more than 9.5 mmpta.

Meanwhile, Mozambique’s Area 4 saw some big changes when in late 2017 ENI farmed out a stake to supermajor ExxonMobil. The deepwater Area 4 block contains more than 85 Tcf. Other partners include CNPC, Mozambique’s state firm ENH, Kogas, and Galp. ENI’s initial plans for 5 mmpta trains changed in mid-2018 when the Mozambique Rovuma Venture submitted the development plan to the government for the first phase production out of the Mamba fields. The proposed plan now includes the design and construction of two trains which would each produce 7.6 million tons of LNG per year. These would be the world’s largest LNG trains outside of Qatar. In the Coral South field, ENI is leading plans to develop a FLNG facility in addition to the main project. ExxonMobil will lead construction and operation of natural gas liquefaction and related facilities, and ENI will lead construction and
operation of upstream facilities and FLNG. A final investment decision by the Area 4 joint venture parties is scheduled in 2019, with LNG production expected to commence in 2024.

In Tanzania’s Block 2, Equinor and partners are sitting on an estimated 20 Tcf of natural gas which they plan to monetize as LNG. The gas in Block 2 is spread across several reservoirs in locations up to kilometers apart, making the development a bit more complex. The construction of an estimated $30-billion LNG export terminal near the natural gas discoveries has been delayed by regulatory issues for a few years but seems to now be getting back on track. The eventual production is expected to be about 7.5 mmpta. Part of the gas produced will be diverted for domestic consumption.

In March, Tanzania’s Energy Ministry said that talks with foreign operators on the development of its planned LNG facility should conclude in September. “The government has officially decided to begin talks in early April for construction of the LNG project,” Tanzania’s energy ministry said in a statement. “We are keen to implement this key project for the economy and we plan to … conclude the talks in September this year.” The talks are aimed at negotiating a host government agreement, which is seen as a crucial step towards reaching a FID for the project. The decision to push talks forward was reached following a meeting on March 22 between the energy minister, Medard Kalemani, and Mette Ottøy, a senior VP at Equinor.

BP and partner Kosmos Energy will fast-track the development of the natural gas resources discovered offshore Mauritania and Senegal. The Greater Tortue Ahmeyim project will produce gas from an ultra-deepwater subsea system and mid-water FPSO, which will process the gas, removing heavier hydrocarbon components. The gas will then be transferred to a FLNG facility at an innovative nearshore hub located on the Mauritania and Senegal maritime border.

The FLNG facility is designed to provide circa 2.5 million tons of LNG per annum on average, with the total gas resources in the field estimated to be around 15 Tcf. The partnership is also evaluating potential expansion up to 10 mmtpa in subsequent phases. The project, the first major gas project to reach FID in the basin, is planned to provide LNG for global export as well as making gas available for domestic use in both Mauritania and Senegal.
Algeria started off as an autonomous province of the Ottoman Empire until 1830 when the French seized Algiers. The French held on to the territory for more than a century until the collapse of the French and Anglo-American occupation of North Africa during World War II. The country gained independence from France in 1962 and in 1963 Ahmed Ben Bella was elected as Algeria’s first president.

Bella’s reign did not last long, with Colonel Houari Boumedienne overthrowing him in 1965 with a pledge to end corruption. In 1976 Boumedienne introduced a new constitution which confirmed a commitment to socialism and role of the National Liberation Front as the sole political party. Islam was recognized as the state religion. The people of Algeria elected Boumedienne as president in 1976; however, like Bella, his tenure was not long. He died in 1978 and was replaced by another military man, Colonel Chadli Bendjedid.

Bendjedid held onto the office until 1992 when the army forced him to dissolve parliament and resign, replacing him with a Higher State Council chaired by Mohamed Boudiaf. This was followed by the declaration of a state of emergency and the disbanding of the Islamic Salvation Front (FIS) and all its local and regional council administrations. This triggered a decade of bloody conflict with Islamist groups and the assassination of Boudiaf. The next seven years saw nothing but bloodshed until 1999 and the election of Abdelaziz Bouteflika, the former Foreign Minister.

Bouteflika won every election held for almost two decades, until a delayed Arab Spring visited the country this year. The president, who had been ailing for years and rarely seen in public, announced his intention to once again run for office in Algeria’s latest elections. This led to massive street protests, which in the end had prompted President Bouteflika to resign, having earlier postponed presidential elections because of the political turmoil.

Under Algeria’s constitution, the speaker of Algeria’s upper house of parliament is to take over as interim leader for a maximum of 90 days; this put Abdelkader Bensalah in the office of president on an interim basis. The interim president promised to organize free elections within 90 days saying “I am committed to organizing elections.” The army was aligned with the constitution as a pathway out of the crisis, he added in his 16-minute speech. In a televised statement, Bensalah said he would consult with the political class and civil society. While the interim president seems to be saying the right things, protestors are looking for a whole different government. Bensalah is a long-time ally of Bouteflika and seen as part of the ruling caste by the protestors. Promises were made to “set a national and sovereign commission to secure fair elections,” but it is unclear as of yet if the protestors will take a wait-and-see stance when it comes to Bensalah’s promises. Demonstrators are calling for radical change and not more of the same of Algeria’s elite who include veterans of the war of independence against France, ruling party figures, businessmen, the army and labor unions. Elections are currently scheduled for July 4.
Fortunately, as yet, the political turmoil has not upset the country’s main economic driver, petroleum production and exports. That is not to say that the country’s economic picture is healthy, but gains have been made over the past couple of years. According to the World Bank, Algeria’s economy is ranked as the third most important economy in the MENA region and a leader in the Maghreb. It is one of a handful of countries that have achieved 20% poverty reduction in the past two decades. This was achieved by the Algerian government taking significant steps to improve the wellbeing of its people by implementing social policies in line with the United Nations Sustainable Development Goals. Among other major achievements, the country’s oil boom has enabled the authorities to clear Algeria’s debt, invest in infrastructure projects, and improve the country’s Human Development Indicators.

### Oil and Gas Industry

As one of Africa’s ‘Big 5’ producers, the country produces a significant amount of oil and natural gas. However, despite its petroleum largesse the country’s regulations have been hindering investment. This past year the government began a campaign to change its hydrocarbon laws. In June of last year Algeria hired US law firm, Curtis, Mallet-Prevost, Colt & Mosle LLP and other consultancies to help draft the legislation. It is hoped that the new energy legislation will attract much-needed investments into the country. According to Abdelmoumen Ould Kaddour, CEO of Algeria’s Sonatrach, the new energy law was to be ready by H1 2019. Kaddour said that inspiration for the change in legislation may come from Mexico’s energy laws. “A good model of an energy law is Mexico’s as it allowed them to attract $300 billion in investment … definitely this is a good model and I will be very happy to have such a law,” Kaddour said during a visit to the Hassi R’mel gas field. He didn’t elaborate on exactly what he found attractive about Mexico’s legislation other than being impressed with the amount of investment it attracted.

While new investors in the country’s petroleum sector have been slow in coming, Algeria does play host to just about all the major European firms and a number of Asian firms, as well as independents from around the world. In mid-2018 Sonatrach, Total, Repsol and Alnaft (Algeria’s regulatory body in charge of hydrocarbons), signed a new concession contract for a period of 25 years to extend the exploitation of the Tin Fouyé Tabankort (TFT) gas and condensate field.

This new contract, which will become effective upon approval by the relevant Algerian authorities, will give Total a 26.4% interest alongside Sonatrach (51%) and Repsol (22.6%). The partners will carry out the drilling and other activities required to develop additional reserves estimated at more than 250 million boe. These investments will allow them to maintain the production of the field, which is currently around 80,000 boe/d, for six years.

Sonatrach and ENI, one of Algeria’s major producers, signed an agreement that represents a further step towards strengthening their partnership in the Berkine Basin. In combination with the existing assets of BRN (block 403) and MLE (block 405b), the aim is to create a gas hub in the area. The agreement, which is part of the Framework Agreement signed last April at the “Technical Scientific Days” event in Oran, aims to develop an ambitious program to relaunch exploration and development in the area, by optimizing existing infrastructures and putting them in synergy with newer infrastructure – a 180 km line that will quickly connect BRN with MLE’s assets, transforming it into the Berkine Basin’s main gas hub. ENI and Sonatrach also agreed the commercial conditions for the 2018-19 fiscal year, in line with the gas market. Additionally, as part of a strengthening of their cooperation and partnership, the two companies have agreed to begin a negotiation to look into extending the gas supply beyond the contractual deadline of 2019. The two firms also agreed to further strengthen their cooperation in petrochemicals, renewables, and offshore projects in Algeria and in other international cooperation opportunities.

In October ENI signed an agreement with Sonatrach that saw ENI take a 49% stake in three concessions in the onshore North Berkine Basin. The agreement covers three areas: Sif Fatima II, Zemlet El Arbi and Ouirhoud II. Sonatrach will retain a 51% stake. The licenses cover a total area of 8,500 sq km and are located near all the company’s current production assets. The two firms will carry out an exploration program in order to develop the reserves on the three blocks, estimated at 145 million boe. Production is expected to start by the end of 2020. The development will benefit from synergies with existing facilities in the area, as well as new projects and infrastructure that are currently under construction. These include the previously mentioned BRN/MLE gas pipeline that is being fast-tracked.

In addition to the above, ENI, Sonatrach, and Total entered into two agreements on the sidelines of the Algeria Energy Summit. One of the agreements have the three firms teaming up to explore offshore Algeria in a virtually unexplored geological province. Algeria, despite its neighbors having bountiful offshore resources, has seen little interest over the years in its offshore acreage. The agreement signed with ENI and Total could open up a whole new resource base for the country.

In parallel, ENI and Total will also pursue obtaining exploration permits that will allow for the rapid completion of an assessment of the hydrocarbon potential. In March Sonatrach’s director for New Resources, Youcef Khankar, was cited as saying the companies would be drilling on the eastern coast between Bejaia and Skikda. The exploration campaign is slated to begin in H2 and 2D and 3D seismic surveys are currently underway. The targeted region for this new drilling campaign could contain several Tcm of natural gas officials said, and initial results

Algeria has made significant gains in each of the key Human Development Indicators (HDI). The country’s position is now 83rd out of 188 countries, which ranks it among the highly developed cohorts in the latest Human Development Report.

Life expectancy at birth increased by 16.6 years and mean years of schooling increased by 5.8 years. However, the costs of the underlying social programs and subsidies were no longer affordable with low oil prices that hit in 2014. The continued low global oil price necessitated changes in the government’s economic models, which triggered a domino effect of reforms. Structural challenges began constraining growth for the non-hydrocarbon sector and inflation continued to rise, thus leading to the final confrontation with its unhappy citizenry.
from the 2D seismic campaign suggest geological similarities between the east coast and Egypt’s Zohr field.

Algeria’s number one producer, US independent Anadarko Petroleum, is responsible for an estimated 310,000 boepd. In its Q4 operations report, the company said that production averaged 319,000 boepd with the El Merk facility averaging 140,000 boepd. Routine statutory maintenance was completed at the Ourhoud field early in Q1 which required a shutdown of the Ourhoud facility for approximately eight days. A produced-water treatment project commenced operation at the HBNS facility in October 2018, increasing water-handling capacity and improving long-term oil delivery. The company also saw its infill drilling operations continue with positive results, aiding in maintaining the oil plateau at El Merk and minimizing overall field declines at HBNS. While Anadarko has been a staple in the Algerian oil and gas scene for decades, a recent deal between the company and a major E&P firm will see its operations taken over. Just recently it was announced that the independent firm was being acquired by US major Chevron Corp. Sonatrach revealed that Chevron officials would be in the country soon to discuss operations.

Chevron is not the only big US firm to express an interest in Algeria over the past year. ExxonMobil also began showing an interest. However, the US supermajor’s entrance stalled on the back of the North African country’s anti-government protests. Sonatrach and ExxonMobil had been in talks for months to develop a field in the southwestern Ahnet Basin, sources close to the discussions said, according to a Reuters report. The resignation of Bouteflika and the scheduling of new elections could lead to the resumption of talks between Algeria and ExxonMobil once the situation appears to have stabilized.

The Sonatrach-operated Alrar field saw a production increase in mid-2018. According to the company, the field’s production rate went from 16 Mmcm/d to 24.5 Mmcm/d with the extension of the field coming onstream. Kaddour, who was officially inaugurating the field extension, has been encouraging operators, including Sonatrach, to raise output at aging gas fields in an effort to boost Algeria’s revenue from hydrocarbons production. The cost of the extension at Alrar, completed through contracts with foreign firms Petrofac and Bonatti, was $545 million. In November Emerson, in partnership with Fores Engineering, signed a $32 million contract with Sonatrach to modernize its gas processing plant in Alrar. As part of the contract, Emerson will combine its innovative technologies and operational certainty methodology to optimize Sonatrach’s production operations and improve the reliability and security of the Alrar plant’s processes. The project includes the engineering procurement, commissioning and testing of the new integrated control and safety systems, fire and gas systems, boosters and compressor controls, field instrumentation, liquid and gas metering skids, control and isolation valves, and other equipment for improved production efficiencies, equipment reliability and safety.

In an additional effort to increase production on its operated fields, Sonatrach contracted Larsen & Toubro to develop three new gas treatment and compression plants on pre-existing gas fields. The contract covers the fields of Hassi Ba Hamou, Reg Mouaded, Hassi Tidjerane and Tinerkouk. The EPC contract comprises detailed engineering studies, supply management of materials for the construction, trials and commissioning, training of personnel and operational assistance. The total cost of the project is over $1 billion and is scheduled to start operations in June 2024.

Sonatrach also awarded Petrofac a $506 million contract to boost gas output at the Tinhert field by 4.7 Mmcm/d. The value was about $100 million less than originally announced. Sonatrach said the difference in value was because part of the work had been awarded to Algeria’s GCB. The project in the Illizi region is expected to come online in 36 months.
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Last year Sercel delivered a 25,000-channel 508XT land seismic acquisition system and 15 Nomad 65 Neo broadband vibrators to Algeoland, Algeria’s leading private geophysical company. Algeoland will deploy the Sercel equipment to conduct a major 3D seismic survey over a 2,000 sq km area of the Rhourde-Nouss desert region in northeast Algeria, on behalf of Sonatrach.

Cepsa entered into an agreement with Malaysia’s Petronas to buy its 35% stake in the Bir El Msana oil field, located in Algeria’s Berkine Basin, 300 km east of Hassi Massaoud. The Bir El Msana field, which started production in July 2015, currently produces around 12,500 bpd. Cepsa recently saw the Timimoun field come onstream.

BP, Sonatrach and Equinor are partners in the In Salah (BP 33.15%) and In Amenas (BP 45.89%) projects that supply gas to the domestic and European markets. In December 2017 BP and Equinor signed an extension agreement for the In Amenas PSC with Sonatrach, the Algerian state-owned energy company. The agreement was formally ratified in April 2018.

The country has a host of downstream businesses, some revolving around oil, others around natural gas. Most recently, Sonatrach initiated talks with oil majors and trading firms to start a trading JV. Potential partners that have held talks with the state-run firm include BP, Total, Shell, Chevron, and Repsol. The company also held talks with the world’s biggest oil trader, Vitol. Sonatrach signed a contract with Vitol to receive products in exchange for crude, its first such deals in decades, and in May 2018 agreed to buy Exxon’s 175,000 bpd Augusta refinery in Sicily. Sonatrach’s aim at founding this venture is reportedly to supply crude to the Italian refinery and help manage the sale of oil products such as gasoline, diesel and jet fuel to Algeria and other markets.

In H2 2018 Sonatrach signed a contract with Maire Tecnimont for an LPG Train. Maire Tecnimont was provisionally awarded the contract worth $248 million to build a LPG train at the Hassi Messaoud field. The EPC contract is for the LPG Train 4, ZCINA, and will be implemented in the existing ZCINA facility. The new train will have a capacity of 8 Mmcm/d of LPG and condensate extraction from associated gas being pumped from existing plants near the ZCINA facility. The project is slated to be completed within 30 months from the construction commencement date.

Sonatrach contracted China Harbor Engineering Company (CHEC) for port installations and a terminal for LNG, according to the state-run news agency, APS. Under the $455 million contract, CHEC will provide studies of and set up a terminal for LNG and build marine and harbor infrastructure for a fuel terminal in Skikda. The project, which is expected to take over two years to complete, allows for the upgrade of LNG production to 220,000 cubic meters per day and the loading of large capacity methane tankers between 50,000 and 250,000 tons. Part of Sonatrach’s 2030 Strategy, the construction of a new LNG terminal and the expansion of the oil terminal at Skikda, will allow the company to increase its production and open up to more international markets.

On the refining end, Sonatrach will use Honeywell UOP technologies to produce 200,000 metric tons per year of methyl tert-butyl ether (MTBE), a high-octane gasoline additive that reduces emissions in automobile exhaust. Honeywell will provide technology licensing, design services, key equipment and state-of-the-art catalysts and adsorbents for the project at Sonatrach’s refinery in Arzew. Included in the technology package is UOP’s Butamer™ technology, which isomerizes normal butane into isobutane. The package also includes a UOP C4 Oleflex™ unit to dehydrogenate isobutane into isobutylene.

Downstream
C4 Oleflex features low energy consumption, low emissions and a fully recyclable, platinum-alumina-based catalyst system which minimizes environmental impact. This results in a lower cash cost of production, and higher return on investment than competing technologies. The contract further includes a UOP Ethermax™ unit that converts isobutylene and methanol into a high-octane MTBE blending agent that contains no benzene or aromatics.

In late-2018 Algeria entered into a $6-billion phosphate JV deal with a Chinese firm to build a phosphate plant in Tebessa province. The JV deal is between Sonatrach, Algerian firms Manal and Asmidal and Chinese state-owned consortium CITIC Group Corp. According to Sonatrach, the plant is set to come online in 2022 and create 3,000 jobs. The project plans to expand the output of the Bled El-Hadba phosphate mine in the eastern region of Tebessa from 1 million tons annually to 10 million tons. Sonatrach will hold a 51% share of the project while the Chinese partners have a 49% stake.

Algeria’s natural gas export pipeline, the Medgaz, could see its throughput increased. According to reports, Sonatrach is looking to expand the pipeline’s export capacity on its 8 Bcm/year pipeline, while also maintaining supplies through the GME link via Morocco. The feedstock for the boost in exports will come from a number of new gas projects that will be brought onstream in the coming years. Sonatrach began construction work in September on a new 200-km pipeline that can divert gas away from the GME pipeline into Medgaz, but Sonatrach said this did not necessarily mean transit via Morocco would cease — rather that it would give the company more flexibility and optionality in its exports to Spain. The new pipeline will run from El-Aricha on the border between Algeria and Morocco to Beni-Saf, the starting point of the Medgaz pipeline, creating a new “loop” between the export lines. In order to be able to move gas in that direction, however, the capacity of Medgaz will also need to be expanded. According to a Sonatrach engineering source, with the addition of more turbo-compressors, the Medgaz capacity could then be further expanded to 16 Bcm/year by 2020. The new link is expected to be completed by September 2020.

Talk of a pipeline from Nigeria to Algeria is making the rounds again. In March the head of Nigeria’s NNPC, Maikanti Baru, said the state-run firm was considering the extending the ongoing Ajaokuta-Kaduna-Kano (AKK) gas pipeline system across the Sahara to Algeria. NNPC indicated more than six months ago that it was working with a Chinese consortium to finalize the term sheet for financing of the AKK pipeline project.
What is now Cameroon saw European ‘visitors’ on its shores as early as the 1500s in the form of the Portuguese, however, malaria prevented any significant European settlement or colonization in the interior until the late 1870s. The early European presence in Cameroon was primarily devoted to coastal trade.

In mid-1884, all of present-day Cameroon and parts of several of its neighbors became a German colony. Unlike with some other colonial masters, Germany invested in infrastructure in its colony, such as extensive railways and hospitals. Unfortunately, to see these projects fruition the Germans instigated the forced labor system. During World War I the British invaded Cameroon from Nigeria, ousting the Germans by early-2016. Following the war, the colony of Cameroon was partitioned between Britain and France. France gained the larger geographical share, while Britain’s territory was a strip bordering Nigeria from the sea to Lake Chad.

In 1958 French Cameroon was granted self-government with Ahmadou Ahidjo as prime minister. In 1960 the country became fully independent with Ahidjo as president. Ahidjo served as president from 1960 to 1982. He presided over one of the few successful attempts at African unity; the joining of the southern half of the former British Cameroon with the larger, French-speaking Cameroon. In 1982 Ahidjo was succeeded by Cameroon’s current president, Paul Biya.

President Biya is Africa’s oldest head of state, having been in power since 1982. In 2008 parliament amended the constitution to allow Biya to run for a third term in 2011. The opposition condemned the move as a “constitutional coup” but Biya still ran in 2011, winning with 78% of the vote. Recently Biya secured a seventh term in office despite credible allegations of vote rigging, electoral fraud, and targeted threats of violence against opponents. Biya was declared the winner in the October 2018 election with 71.28% of the vote. Maurice Kamto, the opposition leader who had declared himself the winner a few hours after the polls closed, refused to attend the declaration ceremony after his party was said to have taken just 14% of the vote.

According to reports, the voter turnout was 54%, far lower than in previous elections. It was just 10% in English-speaking regions where rebels have been fighting a bitter battle for secession since their demands for English speakers to be appointed in courts and schools have been brutally suppressed by the authorities.

Kamto’s campaign manager said: “We don’t recognize Biya as the president of the republic. We want Cameroonians to know that things will start happening now. We wouldn’t take this lying down.” Kamto was subsequently charged by a military court with rebellion, insurrection and “hostility to the homeland,” after his political party staged peaceful protests in several of Cameroon’s major cities. Having been arrested in January, as of March 25 Kamto was still being detained by the government.

On the economic end Cameroon is tagged as a lower-middle-income country. The country is endowed with rich natural resources, including.

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**CAMEROON**

**Politics & Economy**

**President:** Paul Biya  
(since November 1982)

**Independence:**  
January 1960 (from French-administered UN trusteeship)

**Population:** 25,640,965 (July 2018 est.)

**GDP (purchasing power parity):**
-$89.54$ billion (2017 est.)

**GDP - real growth rate:** 3.5% (2017 est.)

**GDP - per capita (PPP):** $3,700 (2017 est.)

**Director General of SNH:** Adolphe Moudiki

**Oil - production:** 75,200 bpd (2017)

**Oil - consumption:** 45,000 bpd (2016 est.)

**Oil - proved reserves:** 200 million barrels (2017)

**Natural gas - production:**
910.4 million cu m (2017 est.)

**Natural gas – consumption:**
906.1 million cu m (2017 est.)

**Natural gas - proved reserves:**
135.1 billion cu m (1 January 2018 est.)

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Source: CIA Factbook
Cameroon is experiencing an economic crisis triggered by its reliance on its income earned through oil exports. It has, therefore, had to put fiscal adjustment measures in place to adjust to the terms of trade shock and restore macro-stability and confidence in the common currency.

On a more positive note, growth in Cameroon accelerated in the first quarter of 2018 and while the numbers for the year are not in yet, GDP is expected to reach 3.8% for the year. While the drop in oil prices the industry has experienced since 2014 hurt its economy, natural gas is taking up the slack that oil has left. The expected GDP rebound for 2018 is mostly driven by an increase in natural gas, with a new liquefied natural gas (LNG) offshore terminal coming online.

The economy is also being aided by an uptick in agriculture, boosted by stronger demand from neighboring Chad, CAR, and Nigeria; and the start of public works preparations for the 2019 Africa football cup. Unfortunately, Cameroon was stripped of hosting the 2019 Africa Cup of Nations due to infrastructural delays, the Boko Haram insurgency and the Anglogphone Crisis. Cameroon is looking to become an upper-middle-income country by 2035, however, to achieve this the World Bank’s Country Economic Memorandum said Cameroon will need to increase productivity and unleash the potential of its private sector.

Specifically, Cameroon’s real GDP will have to grow by roughly 8% (or 5.7% per capita) over the period to 2035, which in turn will require the investment share of GDP to increase from about 20% in 2015 to 30% in 2035, and productivity growth to reach 2% over the same period from its average zero growth rate over the past decade. These challenges, though daunting, can be met.

The public expenditure review published by the World Bank in February 2018 proposes five ways to achieve these goals: 1) get the macro fundamentals right, with authorities needing to commit to macroeconomic and fiscal discipline; 2) reduce debt and manage public investment well, which includes better management of state-owned enterprises and public investment; 3) improve efficiency in the education sector, with a direct funding mechanism; 4) spend more and spend better in health, with the government needing to rebalance the distribution of health resources; and 5) strengthen social protection and safety net system, by altering the composition of expenditures to develop social assistance.

Hindering it from achieving these goals is the fact that Cameroon suffers from weak governance, which thwarts development and the country’s ability to attract investment. According to Transparency International’s 2018 corruption perception index, Cameroon ranked 152nd out of 180 countries, and 163rd out of 190 economies in the World Bank’s Doing Business 2018 report.

The hunt for petroleum resources started in Cameroon in 1947, with the first commercial discoveries in the Rio Del Rey Basin coming in the early 1970s. Cameroon became an oil producer in 1977 when the Kole field was put on production. Production reached a record level of 186,000 barrels per day (bpd) in 1985. However, beginning in 1986, when the “oil price collapse” occurred, it began to decline. Faced with this situation, incentive measures aimed at reviving exploration/production activities were taken by the government. Thanks to the said measures, and efforts made by the state-run firm SNH to check the decline, international oil companies began showing renewed interest in Cameroon’s mining domain.

At the beginning of 2018, the country’s petroleum sector was comprised of seven exclusive exploration permits, 19 exclusive mining concessions and/or authorizations, two blocks under negotiation, and eight free blocks. As part of its measures to stop the production decline, SNH launched a licensing round in 2018. The licensing round offered eight blocks; the Bomana, Bolongo, and Bakassi, in the Rio Del Rey Basin; and the Etinde, Ntem, Elombo, Tilapia, and Kombe/Nsipe in the Douala/Kribi-Campo Basin. CGG entered into an agreement with SNH, to promote enhanced multi-client E&P data packages and interpretative products, in support of the licensing round.

Over the past year or so the company has seen an increase in exploration, a discovery or two, and became an LNG producer. Cameroon plays host to a number of global independents. At this time, the bulk of its production comes from one independent however, Perenco out of France. The company has been in the West African country for over 25 years and has a number of exploration and production assets, as well as supporting infrastructure. In 2018 Perenco produced an average of 85,000 barrels of oil equivalent per day (boepd), 51,000 bpd of oil and 24 Mmcm/d of gas. The company operates two FSOs (Floating Storage and Offloading Units): La Lobe, to stockpile Ebome crude oil and FSO Massongo, a 272,000 dwt oil tanker converted into a storage unit for Lokele and Kole crude oils.

Perenco manages four production sharing contracts (PSCs), with two of the four already in production; the Dissoni and the Sanaga. The other two, the Elombo and the Moabi, are in the exploratory stage. In January 2018, Glencore sold Perenco a 50% share of its stake in the Bolongo Block, making the French firm the operator. According to SNH, the transfer of rights was part of the Oak field development and production project. One year later the application for the exploitation of the block was given the green light by SNH through a presidential decree on January 8. The license is valid for 20 years and renewable for one period of 10 years.
In February of this year, the company signed a PSC for the Bomono block. The block is located in the Rio del Rey Basin. Under the PSC, Perenco will be required to carry out exploration activities on the Bomono block for a firm initial period of three years. The minimum works program includes geo scientific studies, reprocessing of 3D seismic data and drilling of an exploration well. The minimum financial commitment for this exploration program is $12.5 million. Depending on the results obtained during the first phase of exploration, the company will be entitled to two renewals of its Exclusive Exploration Authorization for two additional periods of two years each, during which it is planned, for each of the periods, the drilling of one exploration well.

Perenco also operates gas projects and was part of one of Cameroon’s most ambitious developments to date, a liquified natural gas (LNG) development. The Sanaga was the first offshore gas field to be developed in Cameroon. It was developed to feed the Kribi power station and to meet the growing demand for electricity in the country. The firm also made Cameroon the latest African LNG producer. Perenco brought Africa’s first floating LNG (FLNG) project onstream when the Hilli Episeyo came online. In September 2015, Perenco and the SNH signed a 10-year gas agreement with Golar LNG, with the aim to develop Sanaga’s remaining gas reserves for the domestic market and LNG for export. The project began commercial operations in mid-2018, coming online $70 million under budget.

The Hilli Episeyo FLNG vessel was converted from an aging tanker for $1.2 billion. It is the first in the world to be accomplished through this type of conversion. The vessel began producing LNG on March 12, 2018 and exported its first cargo in May to China, after technical issues delayed a ramp up in production. Golar, in a statement at the time, said the commissioning tests included the requirement to produce a set quantity of LNG in a period of 16 days of continuous production from minimum two trains at a level of 7,500 cubic meters per day on average. After the commissioning tests the facility was accepted by Perenco and SNH. The facility receives excess production from Sanaga field as its feedstock. All of the plant’s 1.2-million-ton annual output was sold, via a competitive tender, by Perenco to Gazprom Marketing & Trading for eight years.

Tower Resources had a busy period in Cameroon on the Thali PSC, where it holds 100% interest. Tower was awarded the PSC in September 2015 and was granted an extension to the Initial Exploration Period to September 15 of this year. The Thali Block has the potential to hold at least four distinct play systems, including two established plays in which three discovery wells (Rumpi-1, Njonji-1 and Njonji-2) have already been drilled on the Block. Tower awarded a contract to Oilfield International Ltd. (OIL) to act as Competent Person and prepare a Reserves Report in respect to the Thali license in April 2018. The contract covers a review of Tower’s work on the Thali license to date, including historical well data and regional datasets. The preliminary reprocessed 3D seismic data, which Tower received from DMT was incorporated into the Reserves Report. The report, released in November 2018, identified gross mean contingent resources of 18 million barrels (Mmbbl) of oil across the proven Njonji-1 and Njonji-2 fault blocks with low/best/high estimates of 5/15/34 Mmbbls respectively and a development contingency probability of 80% on the first phase and 70% on the second phase.

Most recently, Tower Resources secured a rig to drill in the Thali. The company signed a contract with Vantage Drilling International for use of the Topaz Driller jack-up rig. The rig will be used to drill Tower’s NJOM-3 well, targeting gross mean contingent (2C) resources of 18 million barrels across the Njonji-1 and Njonji-2 fault blocks. Furthermore, the NJOM-3 well is expected to de-risk an additional 20 million barrels of gross mean prospective resources across Njonji South and Njonji South-West. The objectives of the NJOM-3 well are to test the thickness of reservoirs already identified by NJOM-1 and also to test for other reservoirs which may be present at the new location. It will also provide key flow-rate data for the Njonji reservoirs from a drill stem test (DST), which would allow reclassification of contingent resources into 2P reserves as well as providing critical reservoir characterization data for the potential field development strategy. The well is expected to spud in Q2.

Bowleven plc holds stakes in two blocks in Cameroon, the Bomono with 100% interest and the Etinde Permit partnered with Lukoil and operator New Age Global Energy. The Bomono Permit is located in the onshore extension of the Douala Basin. During Bowleven’s first exploration phase, the company acquired 500 km of 2D seismic and a full set of surface samples for geochemical analysis. Bowleven conducted an extensive update to the interpretation, mapping and volumetrics; evaluation of the data revealed multiple prospects and leads with both Tertiary and Cretaceous aged targets identified. Two exploration wells have been completed by the company to date, the Moambe and Zingana wells, both encountering hydrocarbons. Following extended well tests on the shallower reservoirs on the wells, both were suspended pending development. In January 2017 a two-year extension was awarded and a Provisional Exploitation Authorization (PEA) was agreed on in principal.

On the Etinde Permit Bowleven, Lukoil, and New Age drilled the first of two appraisal wells during 2018. The IM-6 commenced drilling in May using the Topaz Driller. The well had the primary objective of delineating the size of the Intra Isongo-aged 410 channel sand package. The location of the well was tweaked to allow the stratigraphically
higher 510 and lower 310 channel sand packages to be tagged as secondary targets. Drilling was complete in mid-August with mixed results. Two of the targeted sands, the 410 and the 510, had gas and condensate shows but they were water bearing. The gas logging data collected in the 310 intra-Isongo showed gas during drilling. Well log data and reservoir fluid samples taken provide a good indication that, the Middle Isongo sections in particular, are of interest as the two horizons both show condensate-rich reservoir fluid samples.

Based on the results from the IM-6, the partners decided to skip over the drilling of the IM-7 well and relocated the rig to the backup location of the IE-4 well. The IE-4 targeted previously undrilled sand packages, “Drillbit and Crowbar” of Intra-Isongo origin, which is believed to be analogous to the 410 sand package at the IM-5 location. Drilling of the IE-4 well was completed in Q4 with the primary target, Drillbit, structurally higher than the lower, Crowbar sand package, which partially sits below and to the west of Drillbit. Initial interpretation of the data showed that the Drillbit sands were water saturated and the Crowbar data suggests that the Crowbar 410 sand package is partially hydrocarbon charged. In addition, an unprospered sequence of thinly bedded high porosity sand horizons of about 30 meters gross thickness was drilled some 50 meters above the Drillbit 410 sand package. Fluid sampling showed the sands to be light-oil saturated.

Since the partners ended the drilling program, they have continued to undertake an analysis of the data collected on the IM-6 and the IE-4. The analysis program is aimed at extracting the maximum technical value from the two wells and then updating and revising the geological and structural models of the IM and IE fields, with initial priority being given to the IM field. Once data analysis and interpretation are completed, the revised geological model will be used to update the IM and IE field development models and to determine the JV’s view of the license’s resources. Alongside this technical data update, the JV partners are running two parallel work streams. One comprises commencing or continuing commercial discussions regarding gas sales, while the other is focused on engineering design studies for the proposed liquids-based development of the IM field.

Victoria Oil and Gas, through its Cameroonian subsidiary Gaz du Cameroun (GDC), is the only onshore producer in the country. GDC produces a significant amount of gas onshore for domestic consumption from its Logbaba concession. In late-Q4 2018 GDC completed the drilling of the La-107 and La-108 wells; the La-107 is now a production well. The company is in the process of finalizing a well plan for the La-108 to complete the clean-up and testing of the Lower Logbaba Sands. This includes recovery of the spent perforation gun. The company’s production was consumed by offtakers at an average rate of 9.6 Mmcf/d. The company’s production goes to a number of thermal and industrial customers. Cameroon’s state-run utility, ENEO is also an offtaker of GDC’s gas. ENEO had halted its consumption of GDC gas in early 2018 however, shipments of gas resumed to the company on December 22. Currently, about 56% of GDC’s production is consumed by ENEO.

GDC also holds a stake in the Matanda Block, receiving a Presidential Decree authorizing the transfer of interest in the Matanda PSC license assigned from Glencore in early-2016. The approval was granted in December 2018. The terms of the assignment included the transfer by Glencore of 75% of its participating interest in the PSC to GDC and 15% of its participating interest to AFEX, who previously held a 10% interest. SNH has a 25% back in right after an Exploitation License is granted. As consideration for the assignment, GDC became operator and assumed responsibility for carrying out the work program agreed to with the government.

The agreed obligation for the Matanda work program is one exploration and appraisal well plus reprocessing of existing seismic in the first two-year period of the PSC. Matanda is highly prospective for natural gas and gas condensate. It contains the previously discovered offshore North Matanda Field with current 2C recoverable gas resources of 150 Bcf Gross, 6 million barrels of condensate and upside of 1 Tcf of gas. In addition, there are further onshore prospective resources of 1.303 Bcf of gas contained in 23 identified prospects and leads. GDC and AFEX will focus on the onshore prospects located within a few kilometers of the adjacent Logbaba concession. The close proximity of the existing Logbaba gas pipeline network will also allow for new discoveries on Matanda to deliver additional natural gas to industrial users in Cameroon.

In H2 2018, GDC entered into an exclusive agreement with the Turkish firm, Naturelgaz Sanayi, as part of its project to produce and distribute CNG. Under the agreement, the Turkish firm will design, build and operate CNG infrastructure and solutions initially in GDC’s home market of Cameroon with the intention of rolling this out into other African countries. Naturelgaz will also market in Cameroon, the CNG produced by GDC for companies and businesses that need off-grid and off-pipeline energy solutions, as well as CNG for alternative mobility solutions. The two parties are undertaking to produce and operate, in a first phase, 2 Mmcf/d of CNG.

Other than the FLNG project on the downstream end, the Cameroon coast is the end destination for the Chad/Cameroon Pipeline. The company’s focus on the pipeline over the last year revolved around the monitoring of the operation and maintenance of the pipeline. SNH reported that the volume of oil lifted from the pipeline increased, however the transit fees declined slightly due to the fall in the US dollar rate. Cameroon Oil Transportation Company (COTCO), which manages the Chad-Cameroon oil pipeline on behalf of the government, said in November 2018 that it planned to double the volumes of crude oil transported through the line by 2022. The increase in volume will come from newly discovered fields in Chad. There is also the possibility of oil being shipped through the pipeline from Niger if a pipeline is built to connect Nigerien oilfields to the pipeline in Chad.
Chevron to Acquire Anadarko in Mega Billion Transaction

In one of the most high-profile acquisitions in recent years, Chevron Corp. entered into a definitive agreement with Anadarko Petroleum Corp. to acquire all of the outstanding shares of Anadarko in a stock and cash transaction valued at $33 billion, or $65 per share. Based on Chevron’s closing price on April 11 and under the terms of the agreement, Anadarko shareholders will receive 0.3869 shares of Chevron and $16.25 in cash for each Anadarko share. The total enterprise value of the transaction is $50 billion.

The acquisition of Anadarko will significantly enhance Chevron’s already advantaged Upstream portfolio and further strengthen its leading positions in large, attractive shale, deepwater and natural gas resource basins.

The deal is a strong strategic fit with Anadarko’s assets enhancing Chevron’s portfolio across a diverse set of asset classes, including shale and tight gas, deepwater, and LNG. On the shale and tight gas end the combination of the two companies will create a 75-mile-wide corridor across the most attractive acreage in the Delaware basin, extending Chevron’s leading position as a producer in the Permian.

The combination will also enhance Chevron’s existing high-margin position in the deepwater Gulf of Mexico, where it is already a leading producer, and extend its deepwater infrastructure network. On the LNG side, Chevron gains another world-class resource base in Mozambique to support growing LNG demand. Area 1 is a very cost-competitive and well-prepared greenfield project close to major markets.

African Petroleum to Combine with PetroNor

African Petroleum Corp. entered into an agreement to combine with PetroNor E&P Ltd for an all-share consideration of around $16 million shares in African Petroleum. PetroNor is a privately owned, Africa focused E&P independent, that holds a 10.5% indirect interest in the Republic of Congo’s PNGF Sud fields (PNGF Sud) and the right to negotiate entry into a 14.7% indirect interest in an exploration license covering the PNGF Bis fields.

Subject to shareholder approval, and certain other customary conditions, African Petroleum will at completion of the transaction change its name to PetroNor E&P Limited.

The transaction is recommended unanimously by African Petroleum’s Board of Directors and executive management holding shares in the company have provided their pre-commitment to vote in favor of the transaction at a general meeting expected to be held in April.

The combining of the two companies gives African Petroleum diversified, low risk, long life and high-quality producing assets, with current net (working interest) production of around 2,300 bpd and medium-term exploration upside in a well-established operating jurisdiction.

The PetroNor team has extensive experience doing business in Africa, which, together with African Petroleum’s public platform, will be used to grow the company into a leading Africa-focused E&P independent.

PetroNor’s subsidiary, Hemla E&P Congo, was awarded a 20% participating interest in the PNGF Sud in the bid round organized by the ROC’s Ministry of Hydrocarbons in September 2016. The license is operated by Perenco and is currently producing in excess of 20,000 bpd of crude. The license contains the Tchendo, Tchibouella, Tchibouella Est, Tchibeli and Litanzi producing fields.

Eland’s Increased Borrowing Base

Eland Oil & Gas announced a new accordion facility and increased borrowing base. In November 2018, the company announced that it had successfully refinanced its existing reserve-based lending facility (the RBL facility) with a new five-year syndicated RBL facility in an amount of $75 million, with the option to increase it to up to $200 million via an accordion, subject to incremental production and reserves.

Eland said that following a redetermination, the borrowing base amount has increased from $103 million to $134 million and an initial accordion increase of $50 million is being underwritten by Standard Bank of South Africa Limited and Stanbic IBTC Bank PLC, resulting in the commitments under the facility increasing from $75 million to $125 million. Of the commitments, $50 million is currently drawn.

AVEVA Adds to its APM Portfolio

AVEVA made a significant addition to its comprehensive Asset Performance Management (APM) portfolio with the acquisition of the software assets of MaxGrip, subject to approval from MaxGrip’s shareholders. MaxGrip, an AVEVA partner since 2017, is a pioneer in optimizing asset performance with Reliability Centered Maintenance (RCM) solutions.

The combination of AVEVA’s portfolio with the capabilities of MaxGrip enables customers to realize high levels of reliability, availability, safety and efficiency in the operations of their capital assets and closes the loop on managing fault scenarios with prescribed remediation actions based on best practices, moving from reactive and predictive maintenance to prescriptive maintenance.

Petroleum Academy to Open in Senegal

Der Mond Group, out of Abu Dhabi, secured a partnership with Iota Group out of Switzerland, to open a petroleum academy in Dakar, Senegal. The academy will offer training programs and workshops at level with international standards in the energy industry and more specifically in the oil and gas value chain.

The establishment of the academy is aimed at supporting the state of Senegal in increasing the number of qualified and certified local professionals, subsequently providing jobs for the Senegalese youth. The academy’s regional office will be in Dakar, with offices set to open in Mali, Sierra Leone, Guinea-Conakry, and Cote d’Ivoire.

The academy’s first goal is to provide an industrial security certification course in order to establish a long-presence of certified professionals ready to tackle high-level challenges requested by operators, contractors and suppliers present in Senegal. Techma, a subsidiary of Iota Group, will provide its expertise, skills and training programs as well as qualified teachers.

Lincoln Electric Acquires Baker Industries

Lincoln Electric Holdings acquired Baker Industries, Inc. Baker is a privately held Michigan-based provider of custom tooling, parts and fixtures primarily serving automotive and aerospace markets. Baker has extensive in-house design and manufacturing capabilities, including machining, fabricating, assembly and additive manufacturing. Their operations adhere to stringent aerospace quality management standards and are AS9100D certified and Nadcap accredited.
Lincoln Electric’s new metal additive manufacturing service will launch in mid-2019 and provide large scale metal printing of industrial parts, tooling and prototypes for customers.

The Baker organization will complement Lincoln Electric’s automation portfolio and its new metal additive manufacturing service business that will launch in mid-2019. Leveraging Lincoln Electric’s core competencies in automation, software development and metallurgy, the new metal additive business will manufacture large-scale printed metal parts, prototypes and tooling for industrial and aerospace customers. The Baker operation, along with a new Cleveland, Ohio-based additive manufacturing development center, will provide an additive manufacturing platform to help customers improve their lead times, designs and quality in their operations.

ExxonMobil Announces Power Play Awards Highlighting Women in LNG

What started as a series of ExxonMobil networking events promoting diversity in the liquefied natural gas (LNG) industry, has now grown into an awards program. This is designed to recognize and celebrate the accomplishments of remarkable women and the men who uphold the importance of supporting and empowering them in the industry.

The key objectives behind the awards are to shine a light on the newcomers and smaller players in the LNG value chain, in particular, encouraging nominations from resource holders, buyers, partners and FSRU providers.

The three award categories are:
- The Rising Star – presented to an outstanding female professional under the age of 35
- The Vanguard – given to a male or female professional who displays outstanding leadership
- The Rainmaker - awarded to a female professional who has delivered exceptional value and business results.

Anyone is welcome to submit a nomination, but all nominees must be employed within the LNG value chain, in particular, encouraging nominations from resource holders, buyers, partners and FSRU providers.

A signing ceremony was held at the British Embassy in Algiers. The Tokyo 2020 Paralympics is due to be held from August 25 to September 6.

BP Partners with Algerian National Paralympic Committee

BP Algeria signed an agreement with the Algerian National Paralympic Committee (ANPC) which sees it become a top-level partner and the official oil, gas and energy partner through to the Tokyo 2020 Paralympic Games. BP is the first oil and gas business to become an official partner of the ANPC.

BP has supported a number of NPCs, including those of Angola, Azerbaijan, Egypt, Georgia, Germany, Great Britain, the Netherlands, Senegal, Singapore, Trinidad and Tobago, Turkey, the United Arab Emirates and the United States.

Savannah Updates Seven Energy Deal

Savannah Petroleum updated its transaction with Seven Energy. The company said that good progress on the remaining transaction workstreams continues. Following the completion of the recent Nigerian election process, Savannah remains confident that Ministerial Consent will be forthcoming shortly.

Savannah now expects that the transaction will complete during Q2 2019, and the publication of a Supplemental Admission Document will follow in due course. Further updates relating to the Transaction will be published as appropriate.

Egypt Continues to Pay Down Dana G Debt

Dana Gas received a payment of $19 million from its operations in Egypt. This payment is
made up of a $10 million payment from the government in Egyptian pounds and $9.0 million from the sale of a shipment of El Wastani condensate.

The payment is part of the Egyptian government’s ongoing efforts to reduce their payables position to zero in 2019.

In 2018, the company made good progress in reducing its outstanding balance of overdue debt. At the end of 2018, the net payables position reduced by 39% to $140 million, the lowest level since 2011.

Mozambique Backs ENH Eurobonds
The government of Mozambique will grant a State endorsement on the issue of Eurobonds by oil company ENH in order to guarantee its participation in natural gas projects, according to an Economist Intelligence Unit (EIU) report.

ENH has a 15% stake in the Area 1 block, led by the Anadarko Petroleum group, and its involvement in the financing of the project is estimated at $2 billion, which the company intends to raise in international markets.

The EIU writes in its latest report on Mozambique that the project is financially secure, supported by credible oil companies, is transparent and has been approved by the Mozambican parliament.

Sovereign Wealth Fund for Mozambique
The government of Mozambique plans to establish a sovereign wealth fund to manage income from future gas production, according to President Filipe Nyusi during a speech given in Maputo on March 27. The country will also allocate a fixed portion of revenue to the state budget to fund infrastructure development, poverty reduction, and economic diversification.

International operators like Anadarko Petroleum and ENI are developing the massive natural gas reservoirs discovered offshore the East African country in the Rovuma Basin through an onshore LNG scheme and an offshore FLNG vessel.

“Savings will serve as a cushion when gas prices are low,” Nyusi said. The state should manage the funds to avoid effects like Dutch Disease, he said, referring to the phenomenon in which a commodity boom makes a country’s currency more expensive and its other goods less competitive.

Nyusi said it is estimated that the Rovuma Basin, where Anadarko and other operators are present, may contain 270 Tcf of natural gas. The US independent is planning to find the FID on the $20-billion project by June. ExxonMobil Corp. plans to make a decision on an even bigger LNG project in the same area by the end of the year.

Weatherford Sells Rigs in MENA
Weatherford International closed on the last of four deals to sell its drilling rigs in the Middle East and North Africa. Weatherford closed a $32 million deal to sell four of the company’s drilling rigs in Algeria and Iraq.

The firm has been selling its Middle Eastern drilling rig subsidiary Precision Drilling Services Saudi Arabia, or PDSSA, to Dubai-based ADES International Holding Ltd. in four phases.

ADES agreed to buy PDSSA in a $287.5 million deal that was announced in July 2018. Structured into a series of four closings, the first deal closed in November, the second one closed in December and the third in February.

Combined, the four deals included the sale of 31 land-based drilling rigs, contracts and 2,300 employees and contract personnel.

Inspector Capital Acquires Scimitar Production Egypt
Inspector Capital BV acquired Scimitar Production Egypt Ltd., gaining a foothold in Egypt’s oil, gas and energy sectors. Inspector is well prepared to conduct long term projects, Corné Melissen, the company’s spokesman said, underlining his full confidence in the new management team of Scimitar. The company considers the acquisition of Scimitar as the first step towards new prolific investments, Melissen noted.

The company appointed Erik Vollebregt as Executive Chairman of Scimitar Production Egypt. Previously, Vollebregt had served as the commercial and finance director of Shell Nigeria. Scimitar is a private sector exploration and production company operating in Egypt through Issaran concession, in which it owns 100% of its operation rights. The company’s current production rate has reached 2,200 bpd of oil.

Soco Completes Merlon Petroleum Buy
Soco International completed the acquisition of Merlon Petroleum El Fayum Company from Merlon International. As previously announced, SOCO agreed to acquire Merlon in consideration for approximately $136 million in cash and the issue of 65,561,041 new SOCO ordinary shares to the seller. Prior to their issuance, the consideration shares represented 19.75% of SOCO’s issued share capital or 16.49% of SOCO’s issued share capital as enlarged by the consideration shares. Merlon has agreed to pay an assignment fee in respect of the transaction to Egypt’s state-run oil company, EGPC.

The consideration shares will be issued to the seller on completion with an obligation on the seller to distribute such shares to its shareholders within 30 days of completion, save in relation to up to 5.8 million shares (representing less than 1.5% of the company’s enlarged issued share capital) that the seller may retain for up to 18 months following completion.

Production from the El Fayum concession during Q1 2019 averaged 5,692 boepd. Following completion, SOCO will be focused on offsetting the recent decline and then growing production through additional drilling and the implementation of a secondary recovery program in the core El Fayum fields.

ExxonMobil in Nigerian Asset Sale?
Reports out of Nigeria have US supermajor, ExxonMobil, in talks regarding the sell-off of some of its assets in the country. According to a Reuters report, citing industry and banking sources, the US firm has recently held talks on the sale of a suite of oil and gas fields as it turns its focus to new developments in U.S. shale and Guyana.

The potential disposals are expected to include stakes in onshore and offshore fields and could raise up to $3 billion, two sources said.

Exxon officials reportedly have held talks with several Nigerian companies to gauge their interest in the fields. One source in the Reuters report said that the company would soon open a data room – which would provide technical information on the fields, such as seismic and production details – in Nigeria.
Aker Solutions Wins Jansz-1o Field Job

Aker Solutions was awarded a master contract to support the delivery of a subsea compression system for the Chevron Australia-operated Jansz-1o Field offshore Australia. The first service order under the master contract will be for FEED of a subsea compression station that will boost the recovery of gas from the field.

The FEED scope will also cover an unmanned power and control floater, as well as overall field system engineering services. The field control station will distribute onshore power to the subsea compression station.

The gas compression system will boost recovery of gas more cost-effectively and with a smaller environmental footprint than a conventional semi-submersible compressor solution.

Compression will help maintain plateau gas production rates as reservoir pressure drops over time. While such compressors have typically been installed on platforms over sea level, placing them on the seabed and near the wellheads improves recovery rates and reduces capital and operating costs.

ExxonMobil and QP Hit Gas Offshore Cyprus

ExxonMobil and Qatar Petroleum made a natural gas discovery off the coast of Cyprus. The discovery was made with the drilling of the Glaucus-1 exploration well on Block 10. The US firm said the discovery could represent an in-place natural gas resource of 5-8 Tcf, but further analysis will be needed to better determine the resource potential.

The well encountered a gas-bearing reservoir of approximately 436 ft. The well was safely drilled to 13,780 ft depth in 6,769 ft of water.

Glaucus-1 was the second of a two-well drilling program in Block 10; the first well, Delphyne-1, did not encounter commercial quantities of hydrocarbons.

DEA Expands Position in Mexico with Acquisition

DEA Deutsche Erdol AG completed the acquisition of 100% of the shares of Sierra Oil & Gas on March 19, increasing its presence in Mexico. The National Hydrocarbons Commission (CNH) and the Federal Economic Competition Commission (COFECE) of Mexico approved the transaction.

The acquisition has increased DEA’s presence in the Mexican E&P market significantly; comprising of six exploration and appraisal blocks, including a material stake in the world-class Zama discovery.

With the closing of the acquisition, Sierra Oil & Gas has become a subsidiary of DEA Deutsche Erdol AG. DEA will now start to consolidate its two companies in Mexico, Deutsche Erdol México and Sierra Oil & Gas, to create a new business unit.

Via Sierra, DEA holds now a 40% non-operated working interest in Block 7, containing a significant part of Zama, one of the largest shallow water discoveries of the past 20 years globally. As a whole, Zama is estimated to hold 400 million to 800 million barrels of recoverable oil equivalent and is expected to start production by 2022/23. DEA also adds non-operated interests in five highly prospective exploration blocks to its portfolio. Sierra’s exploration blocks cover approximately 9,400 sq km in the core part of Mexico’s Sureste Basin. In addition, DEA currently operates the onshore Ogarrio oil field, in partnership with Pemex, and holds interests in four exploration blocks in the Tampico Misantla and Sureste Basins, three of which as operator.

BP Renews Veolia ME’s Water Treatment Contract in Oman

BP renewed Veolia Middle East’s five-year contract for a reverse osmosis raw water treatment plant in Oman’s Khazzan tight gas field.

Veolia, a global leader in optimized resource management, will continue to handle operations and maintenance (O&M) at the facility, which has a capacity of 6,000 m3/day, split between 4,000 m3/day of processed water and 2,000 m3/day of drinking water.

In line with the government’s economic development strategy, Veolia plans to promote Omanization, raising the proportion of Omani citizens in its workforce to 80% within the contract’s first six months. It will also roll out a tailor-made in-country value procurement program that will prioritize Omani goods and suppliers.

Shell Signs for Two Blocks Offshore Columbia

Columbia’s National Hydrocarbons Agency (ANH) and Shell signed two important offshore E&P contracts for the COL 3 and GUA-Off-3 blocks in the Colombian Caribbean Sea. The investment commitment for these two blocks comes to nearly $100 million for the first phase. The president of ANH, Luis Miguel Morelli, and the president of Shell in Colombia, Ana María Duque, were the signers of the contracts.

In a statement Morelli said, “the signing of these contracts revalidates the confidence of oil investors in the exploration of our offshore resources in the Caribbean. Shell assumes investment commitments of more than 100 million dollars for the first phase of exploration in these two blocks. However, if Shell later decides to continue with the exploratory program of the following two phases, the investment in its entirety may exceed $650 million.”

The exploration project, which corresponds to the blocks will be developed in an area that, as a whole, covers 880,000 hectares. In the contract for the COL 3 block, the commitment is to develop a minimum exploratory program (PEM), which includes the reprocessing of 3D seismic over an area close to 1,000 sq km and the drilling of at least one exploratory well in the first phase. The contract for the GUA-Off-3 contemplates a three phase PEM that includes the acquisition of 2,461 sq km of 3D seismic, the taking of 43 samples of Piston Core and the reprocessing of 3D seismic over an area close to 2,000 sq km, in the first phase.

Just recently, Noble Energy agreed to buy a 40% operating stake in the two offshore exploration and production contracts from Shell for an unspecified sum.

Prosafe and Aker BP Come to Terms on Safe Scandinavia

Prosafe and Aker BP ASA have agreed to restructure the remaining seven one-month options...
for the Safe Scandinavia at the Ula platform in the Norwegian sector of the North Sea, to three one-week options.

In addition, the first of the one-week options has been exercised. The total value of the option is approximately $1 million with operations continuing into early-May 2019.

The Safe Scandinavia will be available for charter from late-May 2019 offering a unique combination of high bed capacity, drilling support services, plug and abandon, well intervention and decommissioning.

Morrison Doubles Pipelay Barge Fleet

Chet Morrison Contractors acquired two pipelay/construction barges and a saturation diving system, effectively doubling the size of its pipelay barge fleet and increasing its saturation diving capabilities.

The company acquired the LB Super Chief, a 265 ft x 72 ft ABS-classed pipelay barge with accommodations for 93 personnel. It is outfitted with a 100 KIP pipe tensioner, is U.S. flagged and provides extended capabilities for pipe size and water depth lay and recovery; and the DLB Subsea Vision, a 415 ft x 100 ft ABS-classed pipelay and construction barge with accommodations for up to 140 personnel. It is outfitted with a PDI Large Diameter Pipelay System with a 100 KIP pipe tensioner, a Seatrax 300-ton crane and a moonpool; a Saturation Diving System, and a 12-man ABS-classed portable IMCA compliant diving system capable of diving to depths up to 1,000 ft.

The acquisition complements Morrison’s existing fleet of pipelay barges consisting of the CM-15, CM-9 and Morrison’s two six-man saturation diving systems, a portable system and one installed on the DSV Joanne Morrison, a 240 ft saturation diving vessel and the largest of its class in the Gulf of Mexico with a 70-ton subsea crane. The DSV Joanne Morrison recently completed a major dry dock with upgrades to the vessel and diving systems resulting in enhanced performance for safety and operational assurance.

Crane Collapses Killing One

In early March a crane collapsed at an offshore platform in the Adriatic, killing one platform worker and injuring two seafarers, according to the operator of the field ENI. The accident occurred on the Barbara F platform, which is located about 30 miles off the coast of Ancona, Italy. The crane was carrying out cargo operations over an OSV. When it collapsed, it struck the vessel below, injuring two people. The wreckage then slid below the surface, taking the crane operator with it.

A dive team from the Ancona fire department found the operator’s body in the submerged crane cab, which remained suspended by cables from the platform structure. The victim was identified as Egidio Benedetto. The injured men were both evacuated to the Torrette di Ancona hospital, but their injuries were not life-threatening, according to local media.

An investigation into the circumstances of the accident has been launched, with initial reports suggesting that a structural failure may have been a contributing factor. In a statement, ENI said that it had “immediately started checks to shed light on the dynamics of the event and is giving the maximum cooperation to the coast guard, to the port authorities and to the fire brigades supporting them in the work for the safety of the area.”

Intertek Opens Petroleum Testing Lab in Iraq

Intertek saw the launch of the first independent crude oil, fuel testing and petroleum products laboratory in Iraq. The new hydrocarbon laboratory, located in the port of Khor Al Zubair, will support the increased demand for quality assurance solutions in the petroleum industry across Iraq and will soon be offering octane engine fuel testing of gasoline for the first time in the country.

The launch of the 1,300 sq ft laboratory allows Intertek to offer its services in this fast-growing market and in this highly strategic location. Khor Al Zubair incorporates industrial areas that are home to several petrochemical and other companies that will benefit from the proximity of the laboratory services to their operations. The nine jetties in the port of Khor Al Zubair are vital for fuel imports and exports in Iraq and enable direct access for crude carriers, refiners, distributors and trade companies.

Based within SKA Energy’s new oil storage terminal, the laboratory represents a significant investment in the Iraq oil & gas industry. Offering a wide range of services for the petroleum and related industries, the laboratory will deliver sample testing, and services for the downstream oil and gas and aviation sectors. It will also provide detailed crude oil, naphtha and gasoline quality analysis and testing, which helps clients maintain or improve fuel quality to meet commercial and regulatory specifications. The facility will offer 24/7 operations and troubleshooting support.

GeoPark Enters Ecuador

GeoPark entered Ecuador with its acquisition of the Espejo and Perico blocks. The Espejo and Perico blocks are attractive, low-risk exploration blocks located in Sucumbios Province in the north-eastern part of Ecuador, in the Oriente Basin.

The Espejo block covers an area of 15,650 acres and the Perico block covers an area of 17,700 acres. Both blocks are covered with 3D seismic and are adjacent to multiple discoveries, producing fields and existing infrastructure.

From existing 3D seismic and other relevant data, more than five multilayer, ready-to-drill light oil prospects and leads have been identified. Ongoing geoscience evaluation and field operations are expected to start in late 2019 or early 2020.

The blocks were awarded to the GeoPark and Frontera consortium on a 50/50 basis, in the form of production sharing contracts in the Intracampos Bid Round carried out on March 12.

The winning bid consisted of committing a minimum investment program of carrying out 55 sq km of 3D seismic in the Espejo block and drilling four exploration wells in each block, with a total estimated investment commitment of $60 million ($30 million net to GeoPark) over the next four years. GeoPark and Frontera will have a 70-78% contractor share at approximately $60-70 Brent. The final award is contingent upon regulatory approvals and the execution of the contracts, expected for Q2 2019.

Johan Sverdrup Living Quarters Topside Ready for Sail-Away

The Johan Sverdrup living quarters topside, the fourth and last platform for the first phase of the giant project is now ready for sail-away. The topsides will sail from Kværner’s yard on Stord to the Johan Sverdrup field, where it will be installed in a single lift.
A JV between Kværner and KBR was awarded the NOK 6.7 billion contract in June 2015 for constructing the Johan Sverdrup utility and living quarters topside. Leirvik AS was assigned to construct the living quarters modules for the platform.

On February 15 the JV formally handed over the topside to Equinor. One month later, after further preparations, the living quarters topside is now ready for sail-away to the Johan Sverdrup field in the North Sea where it will be transported on board the lifting vessel Pioneering Spirit.

TechnipFMC Tagged for ENI’s Merakes Project

The award of a contract for the integrated engineering, procurement, construction, transportation and installation for ENI’s Merakes project offshore Indonesia has gone to TechnipFMC. This contract covers five deepwater wells, and their 50-kilometer tie back to the existing Jangkrik Floating Production Unit in Indonesia.

The project scope includes engineering, procurement, installation and pre-commissioning of subsea equipment such as subsea trees, a manifold, large bore deepwater high pressure flexible lines, umbilicals and distribution hardware, flexible risers, flowlines and jumpers.

Eagle Explorer Contract Extended

SeaBird Exploration’s contract for the Eagle Explorer with CGG has been extended for approximately 80 days. The contract is now firm until August 15, with further options for CGG to extend up to 60 days.

The Eagle Explorer has been on a 160-day contract with CGG since acquired in November and completing its 10-year class docking in December 2018 and is currently working as a source vessel in the Gulf of Mexico. The extension is for another survey as source vessel in Northern Europe.
First Floating PV Project in South Africa Complete

South Africa saw its first floating PV project completed. The floating PV farm was undertaken by New Southern Energy, with the installation operating at a dam next to a fruit farm just outside of Franschhoek in the country’s Western Cape province.

The floating PV project has a generation capacity of 60kW and will help produce clean energy to the farm, while also minimizing evaporation from the farm’s dam and saving valuable agricultural land.

The first phase of the installation, which also included the land-based solar installation on the Marlenique farm, will allow the facility to run 90% of its energy intensive cold storage, irrigation and wedding venue facilities off of the traditional electrical grid. A second phase, which features energy storage assets, will remove the farm from the electrical grid entirely.

Sonangol to Invest in Solar

Angola’s state-run firm Sonangol has invested in the construction of a solar power plant. The firm will invest an estimated $33 million to establish the plant in the Namibe province.

The plant will be built in 2020, said Carlos Saturnino, chairman of Sonangol’s board of directors. It will have a first phase with a capacity of 25 MW, but this power will be increased to 100 MW in the future.

Zambia’s Largest Solar Plant Complete

President Edgar Lungu has commissioned a 54-MW solar power plant, as the construction of the Bangweulu plant reached completion. The plant is Zambia’s largest renewable energy project, constructed at a cost of $60 million.

The solar power plant under the Bangweulu Power Company Limited is a JV of the Industrial Development Corporation and Neoen, a French company.

The World Bank Group’s Scaling Solar Project awarded a contract to Neoen to construct a 100 MW solar power plant from the planned 500 MW under the project.

Neoen holds a majority stake in the Bangweulu solar park and will be selling electricity to ZESCO for the next 25 years at a rate of $60.15 per MWh.

The project represents a total investment of $60 million, $39 million of which was contributed by the IFC and OPIC.

During the launch, President Lungu praised the IDC for taking up the challenge to create an energy mix to bring solar power into the national electricity grid in response to the electricity deficit that affected the country in 2015.

Tanzanian Solar-Hybrid Project Breaks Ground

RP Global, an independent renewable energy developer and majority shareholder of JUMEME Rural Power Supply Ltd., announced that construction of the first phase of its ambitious solar-hybrid mini-grid project in Tanzania was in progress. In this first scaling phase, 11 new mini-grids are currently being constructed to bring 24/7 electricity supply to a population of more than 80,000 people.

Built on a cluster of islands in Lake Victoria, these independent solar-hybrid mini-grids, equipped with battery storage technology, will electrify 20 villages. This project was enabled by the European Union, who provided co-financing through the ACP- EU Energy Facility. Commissioning is scheduled to take place in June of this year.

In the upcoming second scaling phase of the project, JUMEME aims to build up to 11 more mini-grids to electrify 23 additional villages, bringing energy services to a population of over 160,000 people. This project extension is well underway, with consents and permits already secured and preparations for the implementation taking place.

Apart from the obvious improvement of living conditions, bringing power to these off-grid communities will set a full virtuous circle in motion; JUMEME’s first mini-grid system, which is in operation since early 2016 confirms the great potential for increased rural economic growth when clean energy starts powering people’s lives and business ventures. This is especially true for women, who are provided with new means to gain economic independence by founding electricity-reliant businesses, such as hair salons or bakeries. In addition, access to electricity will enable the installation of irrigation systems and water pumps, thereby reducing the adverse impact of draughts. It will also improve the production of food and its storage.

The JUMEME venture was made possible through financial support from the European Union under the ACP-EU Energy Facility, and REA, Tanzania’s Rural Energy Agency.

Morocco and Spain Plan 3rd Connection

Morocco has signed with Spain a MoU for the construction of a third electricity interconnection between the two countries. The national electric firms of the two countries will soon carry out the appraisal work for the project, which should come into operation before 2026 and allow the transport of 700 MW of electricity.

The development of the plants includes the installation of energy transfer stations with a capacity of 220 kV. Three of these infrastructures will be constructed, two in Adrar and one in In Salah. They will allow the electrical network which stops at In Salah, to extend towards Timimoune while passing by Adrar. These projects should come to fruition by 2022.

It is also expected that 600 km of high voltage transmission lines will be built over the next four years.

The cost of this new power line has been estimated at €150 million, which will be divided between the two countries.

“The construction of a third electricity interconnection line between Morocco and Spain will allow the integration of renewable energies, mainly photovoltaics into the European electricity system,” said the Spanish electricity company.

The first interconnection between the two countries was commissioned in 1998. The submarine line is 28 km long and has a technical capacity of 700 MW. Another 31.3 km long line was also inaugurated in 2016.
Solar to Power Gambian Schools and Health Centers

Gambia will be the first country in the world to ensure all of its 1,100 rural schools and health centers will benefit from a reliable energy supply using solar and battery technology. This will happen through a 20-MW solar energy and 400 km distribution project to transform energy access and cut costs, brought to Gambia by the European Investment Bank (EIB). This is the EIB’s first engagement in Gambia since 1991.

Access to clean energy in the Gambia is set to be transformed under a new €142 million initiative to harness solar power and supply clean energy across the country, backed by the EIB, World Bank and European Union.

Once operational, the scheme will increase energy supply in the Gambia by one fifth and transform electricity access in rural communities through the construction of a new photovoltaic plant at Jambur near Banjul, new power transmission and distribution infrastructure. The project will increase access to energy, ensure that education and health services benefit from reliable power and help to address current power shortages in the country.

Energy demand in Gambia has grown by 5.5% a year in recent years and the new 20-MW solar power plant to the national energy grid will both significantly increase Gambia’s current generation capacity of 98 MW and enable electrification of rural areas.

Power from Kariba
Hydropower Dam Halved

Due to a drop in the output of water levels in the reservoirs supplying the Kariba hydropower dam, power production has dropped by half. The power station at the border between Zambia and Zimbabwe is supplying both countries with electricity.

According to Reuters, the two countries agreed to the reduction in electricity production on each side of the border, from about 1,000 MW, to 500 MW.

“The Zambezi River Authority has given us an annual allocation of 19 billion cubic meters of water, which means that we will only be able to generate 500 MW maximum,” said a representative of the Zambian power company.

According to a technical bulletin issued jointly by Zambia, Zimbabwe and Mozambique, the water level in the Kariba Dam has dropped to 43%.
**FACTS AND FIGURES**

### African Rig Count

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*Data not available

### Africa Production of Crude Oil

#### (including Lease Condensate, Thousand Barrels/Day)

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#### World Oil Production

#### (in million barrels per day)

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### OPEC Oil Production

#### (Thousand Barrels/Day)*

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<th>Country</th>
<th>2018</th>
<th>2019</th>
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</thead>
<tbody>
<tr>
<td>Algeria</td>
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*Based on secondary sources

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*Source: BHGE, EIA Oil Market Report, OPEC, IEA, OPEC*
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### Oil Prices

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### Gas Prices

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*Data compiled by Petroleum Africa from various sources including OPEC, EIA and others*
### MARCH 2019

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<td>27-28</td>
<td>OPEX MENA 2019 - Operational Excellence In Oil, Gas &amp; Petrochemicals Conference</td>
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<td>2-3</td>
<td>12th Annual Sub-Saharan Africa Oil &amp; Gas Conference 2019</td>
<td>Houston, TX</td>
<td><a href="http://www.energycorporateafrica.com">www.energycorporateafrica.com</a></td>
</tr>
<tr>
<td>27-29</td>
<td>IDW 2019 - International Downstream Week</td>
<td>Sardinia, Italy</td>
<td><a href="http://www.europetro.com">www.europetro.com</a></td>
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<tr>
<td>28-29</td>
<td>BBTC 2019 - International Bottom of the Barrel Technology Conference</td>
<td>Sardinia, Italy</td>
<td><a href="http://www.europetro.com">www.europetro.com</a></td>
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### JUNE 2019

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<tr>
<td>4-6</td>
<td>Angola Oil &amp; Gas 2019</td>
<td>Luanda, Angola</td>
<td><a href="http://www.africaoilandpower.com">www.africaoilandpower.com</a></td>
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### OCTOBER 2019

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<td>1-3</td>
<td>Congo International Oil &amp; Conference and Exhibition (CIEHC 2019)</td>
<td>Brazzaville, Congo</td>
<td><a href="http://www.ametrade.org">www.ametrade.org</a></td>
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<tr>
<td>7-9</td>
<td>Offshore Energy Exhibition &amp; Conference</td>
<td>Amsterdam, The Netherlands</td>
<td><a href="http://www.offshore-energy.biz">www.offshore-energy.biz</a></td>
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<tr>
<td>9-11</td>
<td>AOP 2019 (Africa Oil &amp; Power)</td>
<td>Cape Town, South Africa</td>
<td><a href="http://www.africaoilandpower.com">www.africaoilandpower.com</a></td>
</tr>
<tr>
<td>10-11</td>
<td>3rd Africa Oil &amp; Gas Local Content &amp; Sustainability Summit</td>
<td>Accra, Ghana</td>
<td><a href="http://www.ametrade.org">www.ametrade.org</a></td>
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### NOVEMBER 2019

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<tr>
<td>11-14</td>
<td>ADIPEC 2019</td>
<td>Abu Dhabi, UAR</td>
<td><a href="http://www.adipec.com">www.adipec.com</a></td>
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### DECEMBER 2019

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<td>APPO CAPE VII</td>
<td>April 2-5</td>
<td>Malabo, Equatorial Guinea</td>
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<tr>
<td>ANGOLA OIL &amp; GAS 2019</td>
<td>June 4-6</td>
<td>Luanda, Angola</td>
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<tr>
<td>AOP INVESTOR FORUM</td>
<td>June 11</td>
<td>London, UK</td>
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<td>AOP 2019</td>
<td>October 2-4</td>
<td>Cape Town, South Africa</td>
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<td>SOUTH SUDAN OIL &amp; POWER</td>
<td>October 28-30</td>
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<td>GECF 5TH GAS SUMMIT</td>
<td>November 26-29</td>
<td>Malabo, Equatorial Guinea</td>
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