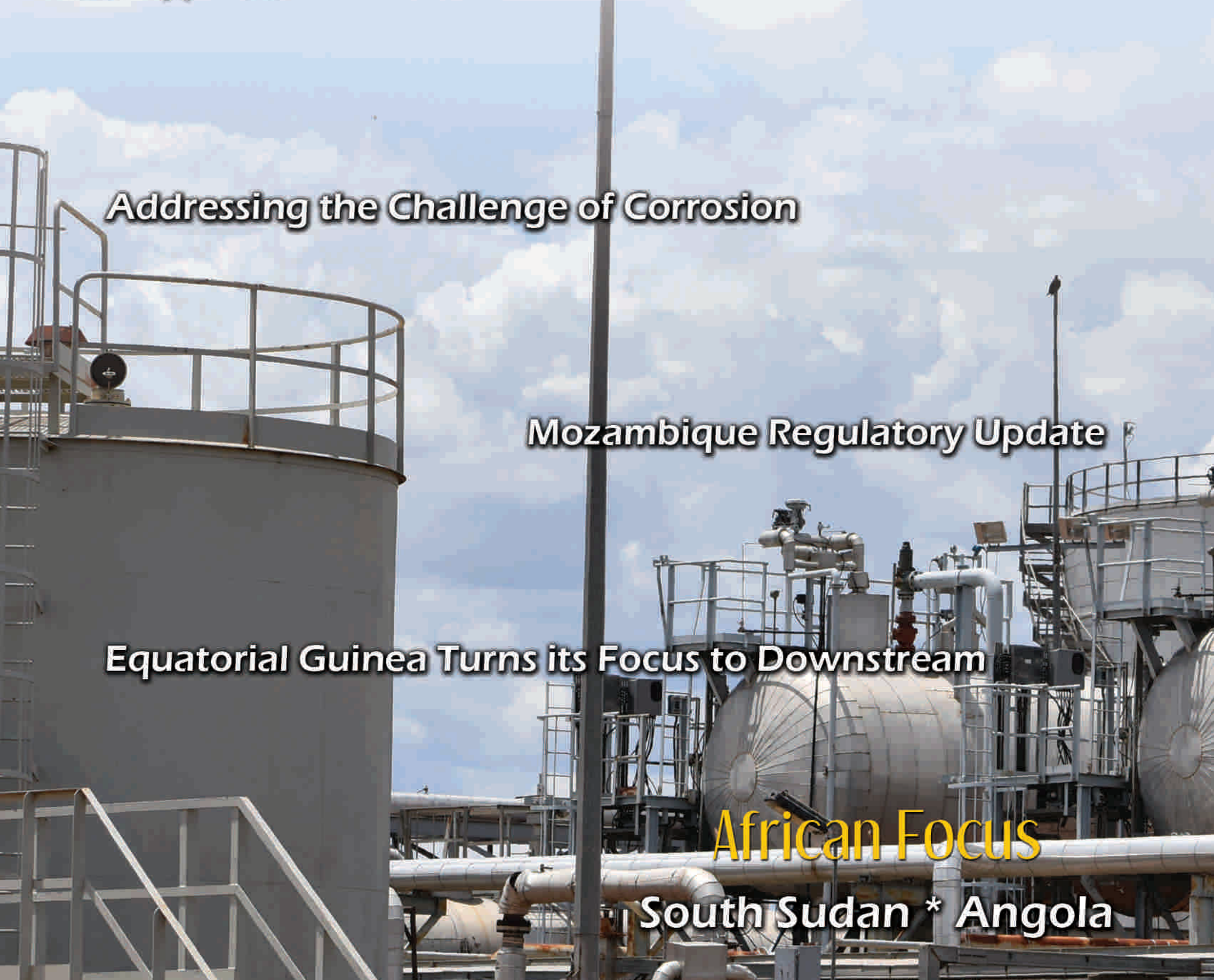
Petroleum Africa

Issue 3, 2020

SINCE 2003
2003-2020

Continental Focus, International Reach



Addressing the Challenge of Corrosion

Mozambique Regulatory Update

Equatorial Guinea Turns its Focus to Downstream

African Focus

South Sudan * Angola

www.petroleumafrica.com

Accra * Bonn * Cairo * Genoa * Lagos * London * Houston * Moscow * Nairobi


THE FUTURE IS HERE
It's been said that the best way to predict the future is to create it. The CTICC offers the ideal platform to do just that. Every aspect of the centre's offering has been considered – from the more than 140 000m² of flexible space across two state-of-the-art buildings to world-class technology, delicious cuisine, and service-driven staff. Turn your knowledge and vision into potential with events that shape your future at the CTICC.
CTICC
Call +27 21 410 5000, email sales@cticc.co.za or visit www.cticc.co.za and connect to possibilities.
NURTURE OUR WORLD
we are a green conscious convention centre
Experience Extraordinary
Cape Town International Convention Centre

Vol. 17 Issue 3

Contents

Monthly Focus
Mozambique Regulatory Update — 18

New Products & Services
POLYSTOPP® Quick Connect System Increases Safety and Speed of Gas Distribution Pipeline Isolations — 20

Intertek Launches Remote Video Inspection — 20

Weatherford Production Optimization Platform Delivers Multimillion-Dollar Savings — 21

Halliburton Launches Real-Time Wireless Depth Correlation System — 21

Technology and Solutions
Addressing the Challenge of Corrosion — 22

Augmented Reality in Plantweb Optics — 24

Local Impact
How Egypt Banks on Renewables to Meet Expected Surge of Energy Demand — 26

African Focus
South Sudan — 28

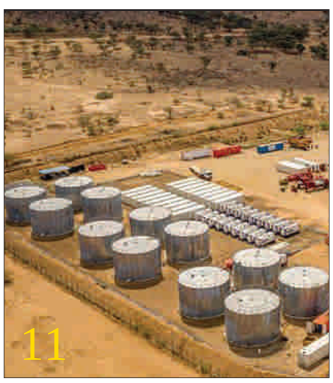
Angola — 30

Downstream Focus
Equatorial Guinea Turns its Focus to Refining and Downstream Projects — 32

Africa's Big Five — 8
Section Highlight

Sonatrach Consortium and Maire Tecnimont Ink EPC for Bir Sebaa

Source: Sonatrach



Source: Tullow

Africa at Large — 11
Section Highlight

Tullow's Force Majeure Likely to Delay FID on Turkana Project

DEPARTMENTS
Moving On — 4

African Politics — 5

Message from the Editor — 6

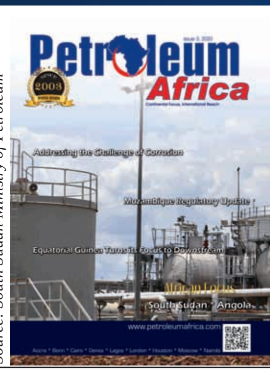
Downstream News — 14

Power & Alternatives — 16

Market Movers — 34

Around the World — 36

ON THE COVER



Source: South Sudan Ministry of Petroleum

Facilities on South Sudan's Toors Oil Field

MOVING ON

Gillian King

Tendeka's VP for Europe, Russia, CIS & Africa, Gillian King, has joined the board of the Oil & Gas Technology Center (OGTC). In her new position, Gillian will work with CEO Colette Cohen and new Chair, Martin Gilbert to shape the overall strategic direction and long-term success of the OGTC.

Weatherford International announced that Karl Blanchard, EVP and COO, will assume the role of Interim CEO, reporting directly to the board of directors, until a permanent president and CEO is appointed. In addition, Christian Garcia, EVP and CFO, has decided to leave the company following the filing of the company's second quarter financial results on August 5. The company will announce Mr. Garcia's successor at a later date.

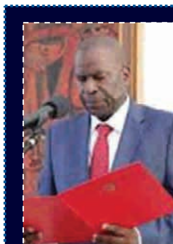
Tareck El Aissam

In late May OPEC welcomed a new minister to its ranks representing Venezuela, HE Tareck El Aissam. He previously served the country as its Minister of Industries and National Production and Minister of the Interior and Justice. Further, Amir Hossein Zamaninia, Iran's Deputy Oil Minister, was named as Iran's OPEC Governor, replacing Hossein Kazempour Ardebili who died in early May.

GP Global announced the appointment of four experienced industry professionals. Newly appointed to further develop oil trading in its UAE office is Maleek Mostapha, a seasoned bunkering expert with over seven years of experience in the field, who has joined the group as Senior Bunker Trader. Neethu Varghese has also joined the UAE office as Bunker Trader, bringing with her a wealth of trading expertise.

Source: Federal Ministry of Information and Culture

Nigerian President Mohammadu Buhari approved a new board of directors for NNPC. The new members are the Hon.Minister of State for Petroleum Resources, Timipre Slylva who doubles as the Alternate Chairman of the Board, Mallam Mele Kolo Kyari, GMD of NNPC, Senator Magnus Abe, Dr. Isah Dutse, Permanent Secretary Ministry of Finance, Dr. Tajudeen Umaru, Dr. Steven Dike, Mrs Lami Ahmed, Chief Pius Akinyelure, Malam Mohammed Lawal and Secretary of the Board, Mrs. Hadiza Commassie.



Estevao Pale

Mozambique's national oil company, Empresa Nacional de Hidrocarbonetos (ENH), has secured a new chairman, Estevao Pale. He comes to ENH from Ncondezi Energy Limited where he served as a board member and non-executive director.

The new appointments in GP Global's Singapore office include Sascha Khan Lulla as Bunker Trader, bringing with him over seven years of trading experience, and Travis Tey as Bunker Trader, with over eight years of trading experience.

Mehdi Bouguetaia

Neptune Energy announced that Mehdi Bouguetaia will be joining the company to take on the role of Algeria Managing Director, based in Algiers. Mehdi joins Neptune from Shell where he most recently held the position of Technical Support and Subsea Operations General Manager with the company's Rashpetco JV business in Egypt.

Sonatrach's chief Toufik Hakkar terminated a number of key executives over his first five months on the job. Those losing their positions include Faiz Zane, head of engineering and management; Mohamed Hadj, human resources manager; Toufik Hamdane, head of Sonatrach's partnerships division; and Farid Ghezali, former vice president in charge of strategy. It was further reported that Hadj Djilali Abouda resigned his position as vice president, finance.

Taelo Mojapelo

BP Southern Africa has a new CEO, Taelo Mojapelo. She succeeds Priscillah Mabelane who was the first woman in South Africa's oil history to head up a multinational company. Mojapelo has previously held several leadership roles in multinational companies including, Mondelez International, Kellog's and DHL.

Maikanti Kachalla

Dr. Maikanti Kachalla Baru, the former group managing director of the Nigeria National Petroleum Corp. (NNPC), unexpectedly passed away. Baru died on May 29 after a brief illness; he was only 60 years young. Baru, an engineer, served as the MD of NNPC from July 4, 2016, to July 7, 2019. He also served previously served as the group general manager of National Petroleum Investment Management Services.

Petroleum Africa sends its condolences to his family, friends, and supporters for the loss of such a great man and larger than life character.

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.

Burundi Elects New President

Voters in Burundi turned out in good numbers to cast their ballots to replace the country's long-reigning, autocratic president. Burundi's election commission declared the governing party's candidate, Evariste Ndayishimiye, the winner of the country's presidential election amid accusations of irregularities by the leading opposition challenger.


Evariste Ndayishimiye

Ndayishimiye, a retired army general, won 68.72 percent of the votes. The main challenger, Agathon Rwasa, reportedly garnered 24.19 percent, according to the electoral commission. There was a turnout of 88 percent. The vote was preceded by political violence, including the arrest, torture and murder of opposition activists, according to a local rights group, and it was the first competitive presidential election in Burundi since a civil war erupted in 1993.

UN and US Supervise Negotiations for Resumption of Libyan Oil Production

Libya's National Oil Corp reported that there have been ongoing negotiations to resume oil production over June between the GNA, NOC and regional countries, under the supervision of the UN and the US. The corporation is hopeful that those regional countries will lift the blockade allowing NOC to resume its vital work for the benefit of all the Libyan people.

"NOC is determined that the agreement will guarantee transparency and that oil revenues will achieve social justice for all Libyans. The corporation also intends the agreement will include solutions to protect the oil facilities and make sure they are never used as a military target or a political bargaining chip again," a statement on NOC's website read.

Top Terrorist Leader Killed in Mali

The Minister for the French armed forces, Florence Parly, announced in early June that French armed forces, with the support of their partners, killed the emir of the Al-Qaida in the lands of the Islamic Maghreb (AQIM), Abdelmalek Droukdal, and several of his close collaborators, during an operation in northern Mali.

Droukdal served as the emir of AQIM and was involved in all aspects of the organization to include financing, planning, and the facilitation and execution of terrorist attacks. The operation permanently eliminated the most senior decision-maker of AQIM and the likely architect of the Sahel-based jihadist movement.

Insurgents Killed in Mozambique

According to the Mozambican Ministry of Interior, security forces killed around 50 insurgents in the northern Cabo Delgado region that has been plagued by violence for several years.

"On May 13 the insurgents were surprised by our forces on a road that connects Chinda to Mbau ... in the confrontation 42 terrorists were killed," Interior Minister Amade Miquidade said at a news conference.

He added that security forces had killed another eight insurgents who were attacking the Quissanga district, also in Cabo Delgado.

Initial attacks were claimed by a group known as Ahlu Sunnah Wa-Jama although recently, Islamic State has claimed responsibility for a number of attacks.

New Evidence of Russian Aircraft Active in Libyan Airspace

According to U.S. Africa Command, Russian aircraft delivered to Libya in late May are being actively flown in Libya. Africom stated Russia's

Source: Africom

introduction of manned, armed attack aircraft into Libya changes the nature of the current conflict and intensifies the potential of risk to all Libyans, especially innocent civilians.

"These Russian aircraft are being used to support private military companies (PMCs) sponsored by the Russian government. U.S. Africa Command has photographic evidence of a Russian aircraft taking off from al-Jufra, Libya. A MiG-29 was also photographed operating in the vicinity of the city of Sirte, Libya," a release on Africom's website stated.

"Russia's sustained involvement in Libya increases the violence and delays a political solution," said U.S. Marine Corps Brig. Gen. Bradford Gering, USAFRICOM director of operations. "Russia continues to push for a strategic foothold on NATO's southern flank and this is at the expense of innocent Libyan lives."

In late May, USAFRICOM reported that at least 14 MiG-29s and several Su-24s were flown from Russia to Syria, where their Russian markings were painted over to camouflage their Russian origin. These aircraft were then flown into Libya in direct violation of the United Nations arms embargo.

"We know these fighters were not already in Libya and being repaired," said Col. Chris Karns, director of USAFRICOM public affairs. "Clearly, they came from Russia. They didn't come from any other country."

CONTACT US

Deputy Editor
Jennifer Nickle
jnickle@petroleumafrica.com

Senior Correspondent
Mark Pabst

Contributors
Catarina Távora
Diogo Xavier da Cunha
Joana Gonçalves
Toufik Khitous

Operations Manager
Alan Younes

Art Director
Mario Saad

Client Relations and Digital Media Manager
Frederick Caccamo Jr.

Circulation Manager
Silvia Rafaat

Distribution Coordinator
Amira A.Wahab

Database Coordinator
Olabisi Ijeh

Senior Accountant
Said Adly

Advertising/Sales
Jina Sellers

IT and Social Media
Farrah Younes

Administrative Assistant
Dalia Abd El-Wahab

Africa Headquarters
10G Ahmed Abd El-Aziz St.,
New Maadi, Cairo, Egypt
Tel/Fax: +2 02 2517 7454
egypt@petroleumafrica.com

Advertising Representatives

Austria, Germany, Switzerland
Eisenacher Medien
Erhardt Eisenacher
Tel: +49 0228 2499 860
info@eisenacher-medien.de

Ghana
Research Development & Financial Consultants Ltd.
Tel: +233 302 767 919
kacquah@rdfcafrica.com

Italy
Ediconsult Internazionale
Anna De Bortoli
Tel: +39 02 477 100 36
energia@ediconsult.com

South Africa
Antonette Benting
Tel: +27 82 414 8191
advertise@petroleumafrica.com

North America
Farrah Younes
Tel/Fax: +1 713 867 9394
fyounes@petroleumafrica.com

Rest of Africa/Middle East
Farrah Younes
Tel: +254 20 243 0825
fyounes@petroleumafrica.com

United Kingdom
Jina Sellers
Tel: +1 713 867 9394
advertise@petroleumafrica.com

Global Inquiries
Jina Sellers
Tel: +1 713 867 9394
advertise@petroleumafrica.com

Subscriptions
subscribe@petroleumafrica.com
or visit **www.petroleumafrica.com**

Petroleum Africa Magazine is a
Texas, United States-registered company.
PO Box 1571 Montgomery, TX 77356

MESSAGE
FROM THE EDITOR

It looks like four months of the Covid-19 pandemic and weak oil demand has provided the impetus for many oil companies to advance plans toward a sustainable energy future. News on the E&P front has indeed become sparse since March, however, announcements on new corporate strategies for greening operations and reducing carbon output are becoming the new norm, from European quarters at least.

The European oil giants - BP, Eni, Shell, and Total – have all announced over the previous few months, their intentions to become "Net Zero" energy companies by 2050. They have also, over time, begun rebranding to be known as energy companies rather than oil companies.

In April, Shell became the largest company to commit to being a Net Zero company by 2050. CEO, Ben van Beurden, explained the decision succinctly: "Society's expectations have shifted quickly in the debate around climate change. Shell now needs to go further with our own ambitions, which is why we aim to be a net-zero emissions energy business by 2050 or sooner. Society, and our customers, expect nothing less."

Total, in May, announced its ambition to get to net-zero emissions by 2050, together with society, across its global production chain and energy products used by its customers. It also announced that it has joined the Getting to Zero Coalition to support the maritime industry's decarbonization by collaborating with companies across the maritime, energy, infrastructure, and finance sectors.

Eni has gone bolder, launching a new business structure to be a "leader in the energy transition." The new Eni will have two business groups – Natural Resources and Energy Evolution. The Natural Resources division will have the objective of reducing its carbon footprint by scaling up energy efficiency, expanding production in the natural gas business, and focusing its actions on the development of carbon capture and compensation projects. The Energy Evolution side will focus on the evolution of the businesses of power generation, transformation, and marketing of products from fossil to bios, blue and green. In particular, it will focus on growing power generation from renewable energy and biomethane.

BP, the first major out of the gate to commit to Net Zero, admits it does not have all the details worked out, but says it will create four divisions: production and operations; customers and products; gas and low-carbon energy; and innovation to help it reach its target. The firm has also said it will provide more details in September and that its strategies will evolve over time.

While not a super major, Spain's Repsol beat them to the punch, announcing its net-zero commitment late in 2019, laying out goals of a 10% reduction by 2025 and 20% by 2035 along the way to 2050's 100%. Further, it is noteworthy to mention that Repsol was the first oil company to recognize the 1997 Kyoto Protocol. And other European independent oil companies are moving forward to become Net Zero as well, including Lundin Petroleum of Sweden which has given itself a tall target of 2030 to realize carbon neutrality.

So, the Europeans have shown up, now it looks like the hands of the American supermajors will be forced. Chevron and Exxon have sidestepped the Net-Zero commitment, opting for independent carbon emission reduction targets instead. However, in today's green climate, public perception and shareholder pressure will demand they come to the table more fully. Sooner, rather than later.

Now on to this issue…be sure to catch the latest updates out of Angola and Gabon in the Africa Focus section. Meanwhile, although upstream projects are not at the top of the list for Equatorial Guinea in light of Covid-19, the country does have big downstream plans that it is pressing on with, read more in Downstream Focus. And finally, Technology & Solutions section looks at how Emerson has integrated augmented reality into Plantweb optics software, enhancing remote collaboration and workforce effectiveness. As always, your comments and suggestions are welcome and can be sent to *info@petroleumafrica.com*.

Dianne Sutherland
Chief Editor

United Oil & Gas High on El Salmiya-5 Well Results

United Oil & Gas (UOG) provided an update on the El Salmiyah-5 development well on the Abu Sennan concession in Egypt, in which UOG holds a 22% working interest. The company reported that early analysis of logging and testing suggests that the well significantly exceeded pre-drill estimates, further building on the success of the last 12 months which has seen UOG's share of production increase significantly.

Source: United Oil & Gas

Abu Sennan

El Salmiyah-5 was spudded on February 3, and reached total depth of 4,400 meters MD (3,911 meters TVDSS) on April 17. The well was targeting previously undrained reservoirs of the El Salmiyah Field, with the primary focus being the Kharita Formation, and secondary objectives in the Abu Roash C and Abu Roash E. Net pay was encountered in all of the targeted intervals, totaling in excess of 120 meters for the well and exceeding pre-drill expectations significantly. The main Kharita target interval was encountered some 16 meters shallow to prognosis, indicating a larger than expected undrained area updip of the existing wells in the field. This was further supported by the encouraging well-test results, which achieved flow rates of 4,100 bopd, with a further 18 mmscf/d gas (c. 8,700 boepd in total).

With further testing planned, it would be premature to draw any further conclusions on the oil volumes associated with the well. United's expectations are that although the well may initially be brought onstream close to the headline test rate, in the longer-term, it is likely to be choked back to lower levels for sustainable production through the existing facilities. Production from El Salmiyah-5 is expected to generate solid operating margins even at low oil price levels due to Abu Sennan's low operating costs of around $6.5/bbl.

Nigeria's Marginal Field Bid Round Underway

Nigeria's Department of Petroleum Resources (DPR) announced the commencement of the 2020 Marginal Field Bid Round. The bid round is open to indigenous companies and investors interested in the exploration and production business in the West African country.

A total of 57 fields located on land, swamp and shallow offshore terrains are on offer. The exercise, which will be conducted electronically, will include expression of interest/ registration, pre-qualification, technical and commercial bid submission and bid evaluation.

According to the DPR guidelines on the 2020 oil bid round, payment by interested bidders shall include non-refundable chargeable fees as follows: application fee of N2 million per field, bid processing fee of N3 million per field, data prying fee of $15,000 per field, data leasing fee of $25,000 per field, competent persons report of $50,000 and $25,000 for field specific reports. In total, the fees amount to $115,000 in statutory fees and another N5 million in local currency.

Interested parties can visit the DPR dedicated portal – marginal.dpr.gov.ng – to access the Guidelines for the Award and Operations of Marginal Fields in Nigeria 2020, and the requirements for participation.

Wellhead Burns on Nigeria's OML 95

According to Nigeria's National Oil Spill Detection & Response Agency (NOSDRA), the well head of the Ororo-1 on OML 95 caught fire on May 16. Guarantee Petroleum engaged Haliburton and Chevron Nigeria Limited to assist it in extinguishing the fire. NOSDRA estimated it would take at least six weeks to extinguish the inferno on the Grace-1 hydraulic workover rig.

A Joint Investigation was carried out because of the nature of this emergency situation, NOSDRA reported. Thankfully, there were no reported injuries from the explosion.

Transglobe Updates Egypt Ops

Transglobe Energy reported that on its Western Desert – South Ghazalat asset (100% WI) that the SGZ-6X well continued to produce from the Upper Bahariya reservoir at a rate restricted to a field estimated 200 – 250 bopd of light and medium crude to evaluate the well, manage the reservoir and optimize the separation of oil, gas and water.

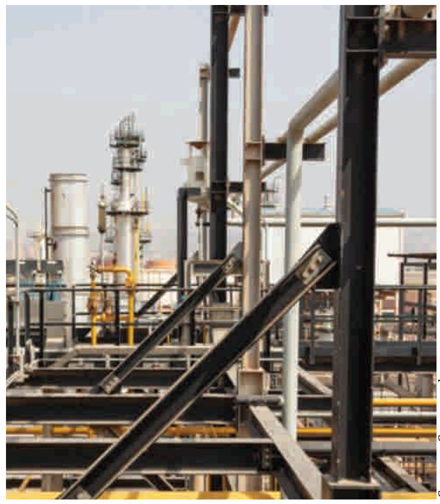
On its 100% held Eastern Desert asset, the company said there had been no drilling activity during Q2 2020, consistent with its revised 2020 budget. Discussions with the joint venture operating partner continued to further reduce operating expenditures. Material operating cost reductions in Egypt require the assistance of the JV partner, the Egyptian General Petroleum Corporation (EGPC).

Despite restrictions on travel, constructive negotiations with EGPC to amend, extend and consolidate the company's Eastern Desert concession agreements have continued throughout the quarter.

Business continuity plans have been implemented in all of Transglobe's locations and operations continue as normal. The company has had three reported cases of COVID-19 in its joint venture operating partner in Egypt, which were managed according to established company and local national quarantine guidelines. All three have recovered and returned to work with no onward infection spread reported.

Sonatrach Consortium and Maire Tecnimont Ink EPC for Bir Sebaa

A consortium made up of Sonatrach and its two partners PTTEP and PVEP signed an Engineering, Procurement & Construction (EPC) contract for the completion of a second oil treatment train (CPF) at the Bir Sebaa field, 40 km from Algeria's Hassi Messaoud operations, with Italian company Maire Tecnimont.



Source: Sonatrach

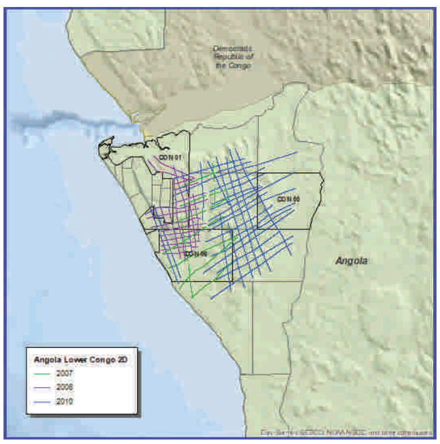
This project, whose contract was awarded in March 2018 following a call for tenders, constitutes the second phase of development of the Bir Sebaa field which will allow the processing of an additional production of 20,000 barrels per day (bpd) of oil in order to increase the production of these fields up to 40,000 bpd, according to a press release issued by the company. Under this EPC contract, Maire Tecnimont will provide detailed engineering studies, the supply of equipment and materials, construction as well as commissioning tests.

The project involves the construction of an oil treatment train, associated gas compression unit, gas lift unit, water injection unit for maintaining pressure, a third turbo-generator (18 MW), as well as the connection of 33 wells, 19 of which are oil producers and the remaining 14 being water injectors.

Angola Delays Bid Round

Angola's National Agency of Petroleum, Gas and Biofuels (ANPG), the country's national concessionaire and holder of mining rights for the prospecting, research, evaluation, development and production of liquid and gaseous hydrocarbons, announced that the schedule of the planned bid round will see a delay due to the effects of the COVID-19 pandemic.

"According to the Schedule of Activities of the Bidding Process 2020, all conditions were created so that by the end of May, the announcement of the intention to launch the public tender was made, pursuant to Presidential Decree No. 86/18, of 02 April. However, due to the current economic constraints caused by the COVID-19 pandemic, this date may undergo minor adjustments," a statement on the state entity's website read. ANPG went on to stress that despite the adverse situation, "the objectives of previously scheduled bids have not changed. The need to streamline and continue petroleum operations in the country remains valid, with emphasis on exploration activities."



Source: GeoPartners

Angola Bid Round

ANPG will publish information on the evolution of the process on its portal and in the national and international media, as well as the announcement of the intention to launch the public tender, pursuant to Presidential Decree No. 86/18, of April 2.

Previously, ANPG announced that the Data Package for blocks for oil exploration in the Terrestrial Basins of the Lower Congo (CON1, CON5 and CON6) and the Kwanza (KON5, KON6, KON8, KON9, KON17 and KON20) was available.

Libya's Erawin Field Development Plan on the Books

On June 11, 2020, the National Oil Corporation (NOC) and Zallaf Libya Company for Exploration and Production of Oil and Gas (Zallaf) held a meeting where a series of long-term tests for the field in order to optimize the field development plan was proposed. Both NOC and Zallaf agreed in principle on the long-term testing plan. Issues at hand include the field location and addressing security challenges and logistics difficulties. Other considerations are the impacts of COVID-19 and the war in Tripoli.

At the end of the meeting, it was decided that more meetings will be held for the NOC's specialists and Zallaf Company for further clarification and strategy that guarantees the best results out of this long-term testing plan.

OXY gets the OK to Maintain Anadarko Contract in Algeria

Algerian authorities have given Occidental Petroleum Corp. (OXY) the go-ahead to maintain Anadarko's contract in the North African country, according to a release on state firm Sonatrach's website. Algeria had previously blocked Occidental Petroleum's deal to sell Anadarko assets in the country to France's Total following Occidental's acquisition of the US-independent. Occidental Petroleum has informed the Ministry of its new strategic approach and its "commitment to continuing Anadarko Algeria Corporation activities in Algeria," and it will seek new partnership opportunities, the statement said.

Zenith Announces Participation in Nigeria's 2020 Marginal Field Bid Round

Zenith Energy announced its participation, in the capacity of technical and financial partner to a Nigerian registered energy company, in the 2020 bid round for marginal oil and gas fields organized by the Nigerian Department of Petroleum Resources (DPR).

Further, the company has also entered into negotiations with two pan-African financial institutions for a loan facility that will be used to fund the acquisition and development of Zenith's growing portfolio in West Africa.

Andrea Cattaneo, Chief Executive Officer, commented: "Among the 57 Marginal Fields included in the 2020 Bid Round, there are specific assets which are particularly appealing to Zenith, especially on account of their compatibility with our development objectives. Indeed, the near-term production potential of certain assets is expected to facilitate the achievement of financing agreements to support our expansion. We expect the potential award of a Marginal Field, following the 2020 Bid Round process, to happen within six months of bid submission."

El Feel Oilfield Offline Due to Security Situation

Following the restart of production at the El Feel oilfield, just a few days later production at the field came to a halt again. According to National Oil Corp (NOC), the commander of the "Khalid bin al-Walid Battalion", Yousif Hassan al-Tabawi, coerced workers at El Feel oilfield to stop production at the field again, only a few days after the Hamada valve was reopened.

NOC charges this is a serious criminal act against the Libyan people and its interests. "It demonstrates again the failure of the Petroleum Facilities Guard (PFG) to carry out their legal duties of protecting the oil sector's facilities and workers. The PFG has become like a militia that carries out orders of illegitimate leaders in order to serve foreign interests.

"NOC again warns that it will prosecute criminals and take all legal procedures against them. Whoever works to destroy the economy and the future of the country must pay the price of their crimes."

A similar situation was seen over the same time frame at the Al-Sharara oilfield which began production only to stop again a few days later due to militant activity.

The Chairman of the Board of Directors of NOC, Eng. Mustafa Sanalla, met with board members to discuss the situation. During the meeting, the safety of workers and the current security conditions in the oil field of Al-Sharara were discussed in light of the deteriorating security conditions at the field and the entry of dozens of armed men with weapons and ammunition, some of them were intoxicated, in a flagrant violation of the precautionary measures of the Corona pandemic. Also, developments were discussed regarding the suspension of production operations carried out under armed gunmen, under command of the so-called 166 Battalion.

Sonatrach to Adapt Gas Strategy to Face Global Competition

Algerian Minister of Energy Mohamed Arkab announced that state oil firm Sonatrach is currently working on adapting its marketing strategy in the gas sector to the demands of increasing market competition. "Sonatrach is changing its commercial strategy" in light of changes in the global market, Arkab said in a press statement on the sidelines of a plenary session at the Council of the Nation.

Further, Arkab stated, "Several countries inject large quantities of gas, in particular with the development of the production of shale gas and liquefied gas … the world changes and so do we." He assured that Algeria aimed to "remain the preferred supplier" of European countries and pointed to the pipelines as the means for guaranteeing direct connection to customers as this is an advantage the county has over many other nations in order to economically supply its European customer base.

Neptune Wraps-Up Seismic Shoot Offshore Egypt

Neptune Energy announced that it has successfully completed an ocean bottom nodes (OBN) multiclient survey in the North West El Amal block, offshore Egypt, delivering promising results for further analysis. The project, prefunded by Neptune, was carried out by WesternGeco, the seismic and geophysical data solutions division of Schlumberger, under a contract with the Egyptian General Petroleum Corporation (EGPC), sponsored by the Egyptian Ministry for Petroleum and Mineral Resources. WesternGeco acquired the survey using third-party vessels.

Source: Neptune Energy

The survey employed innovative OBN technology to overcome the challenge of acquiring improved imaging in the complex salt geometries of the Gulf of Suez. It was the first ever OBN seismic survey to be conducted in Egypt and the most detailed survey of the block since the first acquisition in 1988, providing an in-depth data set for processing, image analysis, and planning for potential exploratory wells in the future.

The North West El Amal offshore concession covers 365 sq km and is located in the central part of the Gulf of Suez, approx. 42 km south of Ras Gharib and 105 km north of Hurghada. Neptune was awarded the exploration license in February last year, including the acquisition of 100 sq km of 3D seismic data.

The project involved placing large numbers of autonomous sensors on the seabed to acquire seismic data, then retrieving them for analysis. The process acquires more detailed data than standard technologies and is less sensitive to weather conditions which can impact traditional seismic survey vessels.

Cheiron Sees First Oil from the GNN Discovery in Gulf of Suez

Cheiron announced that the GNN-4 well in Egypt's Gulf of Suez, which was drilled to appraise the recent GNN oil discovery, has been completed and successfully tested at initial rates of over 2,000 bopd. The well was drilled as a high angle wellbore from the existing Geisum D platform and has been placed on long term production using the existing field infrastructure. The discovery, which contains an estimated 260 MMbbls of oil in place, is located on the Geisum and Tawila West Concession in which Cheiron (through its PICO GoS affiliate) holds a 60% participating interest and operatorship and Kufpec a 40% participating interest.

The Concession is managed by a Joint Operating Company owned by the Egyptian General Petroleum Company, Cheiron and Kufpec and called PetroGulf Misr which is technically supervised by South Valley Egyptian Petroleum Holding Company. The Concession contains the mature Geisum oil field (with 32 active wells, extensive offshore infrastructure and onshore plant at Zeit Bay) which has been on production since the 1980s.

The GNN-4 well will be followed by two further wells to be drilled from the D platform in the southern area of the discovery. Subsequently, the development focus will shift to the northern area of the discovery where additional drilling is planned, along with the tie-back of the GNN-3 well for early production. The full field development will leverage the existing Geisum facilities to accelerate production and minimize costs and will also involve the installation of new platform and pipeline infrastructure.

The discovery is the first to be made in the Nukhul formation in the Geisum area and will open up further exploration potential, both within the Concession and in the neighboring acreage. It comes after the implementation of an extensive, multi-year exploration and development campaign by PICO GoS and its partners, designed to maximize the economic reserves recovery from the Concession. From a more regional perspective, the oil find has again demonstrated that, while the Gulf of Suez is a relatively mature hydrocarbon province, the region still has significant remaining exploration potential.

New PGS Seismic and Well Data for Extended Gabon License Round

A recent expansion of the Gabon MegaSurvey coverage has significantly increased access to 3D seismic over the 35 open blocks on offer. The Direction Generale des Hydrocarbures (DGH) and PGS now offer over 65,000 sq. km of 3D seismic and over 21,000 km of 2D seismic data.

An extension to the tender submission deadline for the Gabon 12th Offshore Licensing Round provides further opportunity to integrate new data into evaluations of open blocks.

The Gabon MegaSurvey is a cost-effective tool for regional evaluation and visualization of plays and migration pathways. In addition to the seismic data, well data is now available for 167 wells within the MegaSurvey area, to support the evaluation of the blocks on offer. Value-added composite logs used in conjunction with the regional seismic dataset will help the assessment of prospectivity and play evaluation.

Sangomar On-Track for First Oil in 2023

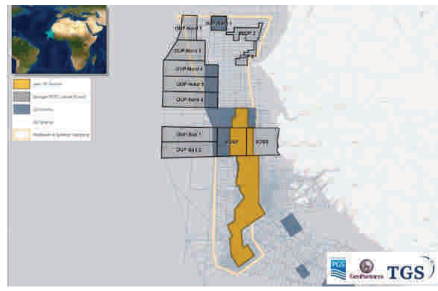
Woodside addressed recent media reports stating that Senegal has been forced to delay its first oil and gas projects by up to two years because of the COVID-19 pandemic. Woodside reiterated that first oil from the Sangomar Field Development Phase 1 remains on track for 2023, in line with previous guidance.

Woodside and its joint venture partners took an unconditional final investment decision for the Sangomar Field Development Phase 1 and commenced execution phase activities in January 2020.

Since then, Woodside has taken early action to proactively manage the emerging impacts of COVID-19 on the supply chain and project schedule. "We are working with project contractors, the Government of the Republic of Senegal and our joint venture partners to optimize near-term spend while protecting the overall value of the investment and deliver first oil in 2023," Woodside stated.

TGS Completes Vast Jaan 3D Seismic Program Offshore NW Africa

TGS announced the completion of its flagship Jaan 3D seismic survey covering the MSGBC Basin in NW Africa acquired in partnership with PGS and GeoPartners. Comprising over 28,000 sq km, this vast survey spanning offshore Senegal, The Gambia, AGC and Guinea-Bissau has been specifically designed to map the Cretaceous Palaeo Shelf-Edge Trend (PSET) and to shed light into the untapped Jurassic potential. This has been the setting for the FAN and SNE discoveries, Africa's most successful play of recent times.



Source: TGS

Tullow's Force Majeure Likely to Delay FID on Turkana Project

Following Tullow Oil's May announcement that it would declare *force majeure* on its Turkana oil development in northern Kenya, hopes for a final investment decision in 2020 have been considerably dimmed. FID had previously been pushed back from 2019 to 2020.

Besides the low-price oil environment and the impacts of the Covid-19 pandemic, Tullow is also looking to farm-down its stake in the project as it has been hit hard over the last year with production issues arising on its Ghana project and less than stellar drilling results in Guyana, resulting in a greatly devalued share price leaving the company with less expendable cash. Tullow has also faced in-country challenges such as environmental, community and security concerns, as well as the impacts of January flooding on the roads meant to support the early oil production pilot scheme.

Speaking during the "Moving Kenya Forward: Oil Production and New Exploration Under COVID-19" webinar hosted by Africa Oil & Power, several regional industry experts cast doubt on the FID on the Turkana project being reached this year.

Commenting on the topic, Brian Muriuki, Managing Director & Country Chair, Royal Dutch Shell Ghana, said "we are still waiting to see government response to the *force majeure*, but there will be clock stopping, commercial and technical. Clearly everything will shift including FID and project execution."

Source: Tullow Oil

Toks Azeez, Sales and Commercial Director for Sub Saharan Africa, Baker Hughes, concurred. "We have to recalibrate our plans including very detailed discussions and negotiations with Tullow. FID was meant to come by the end of this year but perhaps it will be next year in light of this *force majeure*.

Doris Mwirigi, Chief Operating Officer, Energy Solutions Africa says the implications for the Turkana project depend on the clause that Tullow is invoking. "We are waiting to hear government's response and what Tullow actually cited as their circumstances and what the clause is in the PSC."

Hon. Dr. Elly Karuhanga, Chairman, The Uganda Chamber of Mines & Petroleum believes it will be difficult to reject the *force majeure* in any case "as times are difficult even without Covid and low oil prices," referring to other on-the-ground challenges in the region. "Kenyans should remain hopeful though as the oil is in the ground there," he added.

Jaan 3D consists of both newly acquired (over 12,000 square kilometers) and recently reprocessed seismic surveys, processed and harmonized to create a seamless 3D PSTM and PSDM volume which allows explorers to obtain a holistic understanding of this prolific basin and its unique geological features of the shelf edge trend across borders. It is also the current setting for anticipated and ongoing bid rounds, including the Senegalese 2020 License Round, which offers acreage on-trend with the FAN and SNE discoveries. Meanwhile, in The Gambia, Jaan 3D covers significant prospectivity similar to the FAR/Petronas targets in adjacent blocks.

Rune Eng, Executive Vice President, Global at TGS, said, "Recent and significant success in the MSGBC Basin demonstrates the importance of the province in terms of exploration not only in Africa but also worldwide. Learning from these giant discoveries and cross-border exploration success, the Jaan 3D survey has been specifically designed to highlight key play fairways and provide a vital exploration volume to enable E&P companies to unlock the next giant discovery."

In addition to the Jaan 3D volume, the TGS subsurface data library in the MSGCB Basin includes over 82,000 km of 2D seismic and a further 16,000 square kilometers of 3D seismic (including newly acquired deepwater The Gambia and Senegal 3D surveys). This extensive and expanding seismic footprint is complemented by well data products and a vast 114,000 square kilometers Multi-Beam and Seafloor Sampling (MB&SS) survey covering Senegal to Guinea-Bissau.

Equatorial Guinea Adopts New Petroleum Regulation

The Ministry of Mines and Hydrocarbons (MMH) of the Republic of Equatorial Guinea has announced the adoption of the new Regulation of Petroleum Operations, Regulation No. 2/2020 of June 15th, 2020. The new Regulation modernizes Equatorial Guinea's existing regulatory framework and is intended to maintain the country's attractiveness for foreign investors.

It notably covers key matters such as the extension of the productive life of mature fields though mechanisms allowing operators to generate greater value from these assets; the exploration of marginal and onshore fields along with investments in deep and ultra deep water acreages; the monetization of gas and the development of the petrochemicals industry, along with further integration of the national workforce and local companies across the value-chain.

The new Regulation is seen as a pillar of Equatorial Guinea's recovery strategy post Covid-19 and clarifies several aspects of petroleum operations in the country. It also comes as Equatorial Guinea pushes for additional local participation across the value-chain and is developing several gas monetization and downstream projects. The Regulation notably stipulates that refining, petrochemicals and commercialization activities can be realized under a specific license granted by the MMH (Article 93) on the basis of technical and financial capabilities notably.

It also strictly prohibits gas flaring, except under very specific circumstances, and stipulates that Field Development and Production Plans must always be designed in such a way as to allow the use, conservation or commercial exploitation of associated gas (Article 149). It also clarifies new rules and frameworks on exploration and production from mature and marginal fields, defining the former as a field that has entered into decline and is no longer economically viable, and the former as a field that has produced 90% of its proven hydrocarbons reserves (Article 41). Such fields will benefit from 10-year contracts, which can be renewed every five years after study and assessment by the MMH.

Aker Energy Working on Solution for Pecan Field Development

Aker Energy Ghana Limited (Aker Energy) reaffirmed its commitment to finding a solution that will allow for the commencement of a phased development of the Pecan field offshore Ghana.

"In a time when most other E&P companies are putting development projects on the shelf due to the COVID-19 situation and historic low oil prices, Aker Energy and our partners, Lukoil, Fueltrade and GNPC, are working closely with the government of Ghana, and are actively pursuing a development concept where we can commence phase one of a phased development of the Pecan field," said Håvard Garseth, CEO of Aker Energy. "Although we have an altered timeline, we are on our way to finding a development concept with a breakeven price that is sustainable and resilient also in a low oil price environment."

In March, Aker Energy announced that a final investment decision (FID) for the Pecan field development project had been placed on hold, postponing the project. While no new date has been set for the FID, the company is working actively to confirm the feasibility of a phased Pecan field development by executing conceptual studies.


Source: Aker Energy

The phased development of the Pecan field and the utilization of a redeployed FPSO vessel will substantially reduce the CAPEX and, hence, reduce the breakeven cost. In addition, it will increase the possibility of reaching a commercially feasible project that will allow for an investment decision. Aker Energy and partners are currently assessing several FPSO candidates for redeployment, and the final selection will be based on technical capabilities and cost.

Aker Energy Ghana Ltd., a subsidiary of Norwegian-based oil exploration and production firm, Aker Energy AS, is the operator of the Deepwater Tano Cape Three Points (DWT/CTP) Petroleum Agreement, with a 50% participating interest in he license. Its partners are Lukoil Overseas Ghana Tano Limited (38%), the Ghana National Petroleum Corporation (GNPC) (10%) and Fueltrade Limited (2%).

SDX Updates Plans for Morocco's Lalla Mimouna

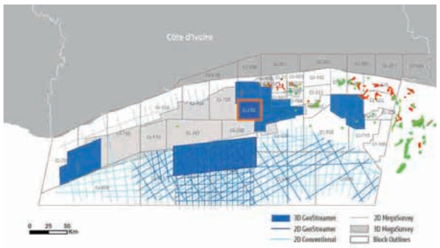
SDX Energy reported that post-drill analysis of the LMS-2 well at Lalla Mimouna, (where it holds 75% and is operator) in Morocco has identified similarities with the LAM-1 discovery made by the previous operator of the concession which flowed gas and condensate in 2015. Subject to successful testing, management estimates that LMS-2 could contain c.1.5 Bcf and has the potential to de-risk a further 6.0 Bcf in separate compartments within the same feature.

Management also estimates that a further 3.4 Bcf of close by prospective resources will be de-risked if LMS-2 tests successfully, increasing the overall prospective resource potential to 10.9 Bcf. LMS-2 will be tested after the COVID-19 restrictions in Morocco enable perforation and testing crews to re-enter the country. The company hopes that this will be late Q3/early Q4 2020.

In addition to the 10.9 Bcf of prospective resources that could be de-risked by LMS-2, management has identified a further 25.5 Bcf of prospective resources in multiple prospects across the concession.

PGS Releases New Multi-Azimuth GeoStreamer 3D for Cote d'Ivoire

PGS announced that it has released its new multi-azimuth broadband seismic survey covering 900 sq km that provides increased resolution and sharper imaging of prolific Upper Cretaceous plays in Côte d'Ivoire Block CI-706.



Source: PGS

Recently completed final depth processing has improved illumination of the block, adding a second azimuth to existing GeoStreamer data. The latest north-south acquisition, which covers the majority of the block, was processed with the underlying east-west-acquired data. The combined azimuths benefit from the GeoStreamer broadband frequency bandwidth and a comprehensive depth imaging flow.

The combination of two data azimuths has resulted in increased resolution of complex faulting in the syn-transform section, to enable a greater understanding of the distribution of Albian sandstone targets hosted in tilted fault blocks. The imaging of the prolific Upper Cretaceous play is also improved, with a clearer delineation of turbidite channel and fan complexes. Heightened imaging of the geomorphology of stratigraphic pinch-out traps can also reduce the risks associated with hydrocarbon migration and trap integrity.

A further 7,000 sq km of GeoStreamer broadband data will be available in July 2020.

Renaissance Oil Signs LoI for Vast Botswana Acreage license

Renaissance Oil, traditionally a Mexico-focused player, has entered into a binding letter agreement to acquire an option for a 50% working interest, in all rights from surface to basement, in a large petroleum license, comprising 2.45 million acres in the Kavango sedimentary basin, in Botswana.

Pursuant to the Letter of Agreement, a private company controlled by Mr. Steinke, CEO of Renaissance, has agreed to assign its interest in a farm-out option agreement with a subsidiary of Reconnaissance Energy Africa (ReconAfrica), for C$100,000 cash and the issuance of 30 million common shares of the company at a deemed price of $0.04 per share (using the 30 day volume weighted trading average) for an aggregate purchase price of C$1.3 million.

The Option Agreement will provide Renaissance with the option to acquire a 50% working interest in the License, exercisable at any time for up to a period of 36 months upon: (i) payment of C$1M, if exercised within 18 months, or C$1.5 M if exercised after 18 months; and (ii) the approval of the Botswana Department of Mines and Ministry of Mineral Resources, Green Technology and Energy Security.

"The option will provide Renaissance with an important and potentially high impact oil and gas play, through the opening of the Kavango Basin, a previously unrecognized, deep sedimentary basin in northwestern Botswana and northeastern Namibia. Botswana is considered a stable, industry friendly jurisdiction which offers some of the most attractive fiscal terms worldwide. "This low-cost three-year option provides excellent value for Renaissance shareholders," said Ian Telfer, director of Renaissance.

The key terms of the license will give Recon a 100% working interest in all petroleum rights from surface to basement covering 2.45 million acres in northwestern Botswana. The deep Kavango Basin offers both large scale conventional and non-conventional play types. It will also have an initial 4-year exploration period, with renewals up to an additional 10 years, in accordance with the Botswana Petroleum (Exploration and Production) Act. Upon declaration of commercial production, the License holder has the right to enter into a 25-year production License with a 20-year renewal period.

NLNG Train 7 EPC Contract Awarded

Saipem, in joint venture with Daewoo E&C Co. and Chiyoda Corporation (SCD JV), has been awarded by Nigeria LNG Ltd (NLNG) the contracts for the Engineering, Procurement & Construction of the Nigeria LNG Train 7 Project to be executed at Nigeria's Bonny Island LNG complex.

Source: NLNG

The overall value of the contracts is more than $4 billion and Saipem's share amounts to around $2.7 billion. Saipem holds a 60% share in the SCD JV. This award follows the signature of the Letter of Intent communicated via a press release on September 12, 2019

NLNG is a limited liability company whose main shareholders are the Federal Government of Nigeria represented by the Nigerian National Petroleum Corporation (NNPC), Shell Gas B.V., Total Gaz Electricité France and Eni International (N.A.) N.V.S.a.r.l.

The NLNG Train 7 Project consists of the construction of one complete LNG train and one additional liquefaction unit with a total capacity of approximately 8 Mtpa, plus other extensive associated utilities and infrastructures.

Stefano Cao, Saipem's CEO, commented: "This new project in Nigeria – where we have been operating for over 50 years – confirms our ability to build solid relationships, qualifying Saipem as a global company. It also proves the validity of the management methods of Covid-19 emergency thanks to the flexibility of our organizational model and the practice of our people to work remotely. The investment decision by Nigeria LNG Limited, which includes several important energy companies, demonstrates that natural gas, in whose value chain Saipem has a recognized leadership, will be pivotal to the energy transition. The award of this contract contributes to increase the portion of non-oil-related backlog and confirms the overcoming of the link between Saipem's share value and oil price."

VFuels Wins Bid for a Modular Refinery Study in Equatorial Guinea

Equatorial Guinea's Ministry of Mines and Hydrocarbons, supported by its strategic partner Marathon Oil Corp., awarded North American Company VFuels Oil & Gas Engineering (VFuels) the feasibility study for the construction of a modular refinery in Punta Europa, Malabo. VFuels, which turned out to be the winner of the tender, will be in charge of the feasibility study that will include the engineering and design of a 5,000-bpd modular refinery to supply refined products for domestic consumption. The study is expected to be delivered within 12 weeks of the contract's signature.

This project is part of the initiative of the Year of Investment 2020 promoted by the Ministry of Mines and Hydrocarbons, which is seeking investments for a modular refinery in the continental region, storage tanks and the promotion of other projects derived from methanol, among others.

"This is an important step when it comes to implementing this project with an important goal to prevent stock outs, and provide refined products of higher quality to economic operators and the general public," stated H.E. Gabriel Mbaga Obiang Lima, Minister of Mines and Hydrocarbons.

Sonatrach Increases Stake in Medgaz Pipeline

Sonatrach announced the completion of a transaction to acquire 19.10% of the shares held by the Spanish company CEPSA Holding in the company Medgaz SA. With this major international operation, Sonatrach increases its stake in Medgaz SA, and the Medgaz pipeline, by 8.04%.

Sonatrach's stake thus goes from 42.96% to 51% in Medgaz SA, which manages and operates the offshore gas pipeline directly connecting Algeria, departing from the Compression Station located in Beni-Saf, to Spain at the Arrival Terminal located in Almeria.

With this acquisition, Sonatrach becomes a 51% shareholder in the new shareholding of Medgaz SA with its historic partner Naturgy at 49% and thus strengthens its position as a major and reliable supplier of Algerian gas to importing customers of Europe, in particular, the Iberian Peninsula through the Medgaz gas pipeline.

The offshore pipeline is 24• in diameter and 210 kilometers long with an annual transport capacity of 8.2 billion cubic meters, which will be increased during the first quarter of 2021 to 10.2 billion cubic meters by adding a fourth Turbo-Compressor at the Beni-Saf Compression Station in Algeria.

Egypt's Urea Plant now Online

Recently the performance test of the newly built ammonia-urea complex of Egyptian Chemical & Fertilizers Industry – KIMA – was successfully completed and the plants were handed over to the customer.

Source: KIMA

The construction was a joint project between Tecnimont and Stamicarbon – two sister companies within the Maire Tecnimont Group – as EPC contractor and urea technology licensor respectively.

The fertilizer complex consists of a 1,200 tpd ammonia plant, using KBR's Purifier technology; a 1,575 tpd urea melt plant, using Stamicarbon's Pool Reactor Design; and a 1,575 tpd urea granulation plant, using Stamicarbon's Granulation Design. The plants are situated in the Aswan Governorship in Upper Egypt.

While working in the difficult conditions caused by Covid-19, Stamicarbon employees supported KIMA in such a way that they were able to run the plant properly and meet the guarantee figures, while Stamicarbon staff returned home just before the lockdown and assisted them further via digital communication tools. The Tecnimont team stayed onsite and had to take special precautions and find new solutions to secure the health and safety of personnel.

With this project Stamicarbon now has 10 urea plants licensed and in operation in Egypt, with the next one already being designed.

Oil Tank Collapses, Infrastructure Compromised at Sharara Field

Libya's National Oil Corporation (NOC) expressed its deep concern about the continued forced-closures of oil facilities, negatively impacting surface facilities, transport pipelines, and crude oil tanks, which led to the collapse of one of the tanks at Al-Sharara field.

In addition to the almost daily leaks of transport pipes and their negative effects on the surrounding environment, NOC specialists predicted dangerous consequences for the millions of barrels stored as they are vulnerable to explosions and mass destruction in the event that the fields and ports turn into military operation areas instead of oil areas.

NOC expressed its frustration due to the militarization of the oil facilities but confirms it continues to fulfill its responsibilities as specialized teams conduct many technical consultations, public safety inspections, and implement process safety and precautionary measures in anticipation of any emergency, in coordination with partners.

Experts from NOC and its partners concluded the need to empty all crude oil stocks, and also to provide storage capacities to store condensate associated with the produced gas so that the gas production does not stop after a few days. This gas is used to generate electricity to all regions of the country.

The National Oil Corporation also implored all those responsible for the closures of its facilities to neutralize the oil sector from any bargaining, and impressed the need to end the ongoing closure of oil facilities immediately to allow the resumption of oil exports. These measure are to ensure the achievement of the minimum revenues that will guarantee Libyans the continuation of salaries and services and maintain the country's foreign exchange reserves.

Clariant Introduces New Phthalate-Free Performance Catalysts for Polypropylene

Clariant is launching its next-generation phthalate-free olefin polymerization catalysts, expanding its portfolio to include a new offering to meet the most demanding customer toxicity requirements. Developed in partnership with McDermott's Lummus Novolen® Technology, the new PolyMax 600 Series catalysts answer the market's increasing need for safer polypropylene solutions.

Stefan Heuser, Senior Vice President & General Manager at Clariant Catalysts, commented, "Performance is the key difference with our new PolyMax 600 Series catalysts. We have successfully developed a phthalate-free solution that adds significant value to our customers' businesses. The innovative technology, which allows customers to achieve higher productivity rates and reduced process fluctuations, is delivering excellent results – with one major polypropylene producer now estimating economic benefits to exceed $8 million annually."

The improved performance is due to a new proprietary technology that increases catalyst activity up to 25% compared to phthalate-based catalysts. This new technology results in not only higher plant productivity, but also superior polymer properties, such as increased impact strength for better durability.

PolyMax 600 Series catalysts are a drop-in replacement for phthalate-based polyolefin catalysts and are designed to suit a broad range of process requirements, in applications ranging from food packaging to engineered automotive parts. Considering the rapid growth of the polypropylene market, the catalysts come at an opportune time to help producers meet both increasing demand and stricter regulations.

Sonatrach and Total Renew LNG Agreement

Sonatrach, Algeria's state oil and gas concern, and the French energy major Total have concluded an agreement to renew their partnership in the field of liquefied natural gas (LNG) for an additional three yeara, Sonatrach announced in a statement.

This agreement will supply the French market with 2 million tonnes per annum of Algerian LNG, with deliveries to the LNG terminal at Fos Cavaou.

The two parties stressed the importance of this agreement which "is part of the long history of cooperation between Sonatrach and Total."

Commenting on this agreement, Sonatrach CEO Toufik Hakkar said that his firm "confirms its status as a reliable partner, respecting its contractual commitments and enjoying a certain credibility on the international energy market."

Oil Spill in Nigeria Caused by Equipment Failure

The National Oil Spills Detection and Response Agency (NOSDRA) of Nigeria reported that the two recent leaks from Nigerian Agip Oil Company (NAOC) oil fields in Southern Ijaw and Brass Local Government Areas of Bayelsa were caused by equipment failure.

The spill occurred on the 24-inch Ogoda-Brass crude oil trunk line and left a devastating mess. Chairman of Okpoama Kingdom Oil and Gas Committee, Percy Wemi-Kwomain, said NAOC made two attempts to fix the leaking pipeline without the usual Joint Investigation Visit conducted by the relevant authorities concerned, but were stopped by youths placed on surveillance in the area, according to a report by Nigerian news outlet Punch.

Egypt's Damietta Restart Deal Falls Through

A deal put together between Naturgy and Egyptian authorities in February that would have allowed the restart of Egypt's 5 M/T Damietta LNG export facility has fallen through. The deal would have seen Damietta, dormant since 2012, restart. The facility is operated and 80% owned by Union Fenosa Gas (UFG), a 50-50 joint venture between Italy's Eni and Spain's Naturgy.

Eni and Naturgy had reached an agreement in February with the Egyptian government that would have seen Naturgy exit the UFG joint venture. Naturgy would have taken $600 million for most of UFG's assets outside Egypt and its equity in the Damietta LNG, with the equity passing to the remaining stakeholders in the plant. Following Naturgy's exit, the plant would have been 50% owned by Eni, 40% by Egyptian Natural Gas Holding Co. (EGAS) and 10% by the Egyptian General Petroleum Company (EGPC).

However, the global Corona Virus pandemic combined with a significant drop in oil and gas prices and market uncertainty, have resulted in the plug being pulled on the deal with the asset now losing significant value in the face of these developments.

Naturgy says it will resume its claim in a $2 billion arbitration case against the Egyptian government but has said it is still open to an "amicable" settlement. The World Bank's International Center for Settlement of Investment Disputes had already ruled in Naturgy's favor in the case in 2018.

KenGen Shortlists 5 Bidders for Okaria VI

KenGen, or Kenya Electricity Generating Company PLC, is in fast forward mode to set up the first phase of its Olkaria VI 140-MW geothermal power plant in Naivasha, having recently shortlisted five bidders for the project.

Sorce: KenGen

Ormat Technologies Inc, ITOCHU Corporation, Sumitomo Corporation, Enel Green Power and a consortium of Engie Energie Services, Toyota Tsusho Corporation, Kyuden International Corporation and DL Koisagat Tea Estate were shortlisted as qualified bidders on May 8.

The Olkaria VI geothermal project will fall under the BOOT model (build, own, operate and transfer). The winning party will enter into a joint venture with KenGen and will finance, construct, own and operate the power plant and the associated facilities and transfer the Project back to KenGen at the end of the operational term. This will be the first Public-Private Partnership (PPP) Project to be developed by KenGen under the PPP Act 2013 and the PPP Regulations 2014.

Eiffage Begins Construction on Côte d'Ivoire's Singrobo Hydroelectric

French firm Eiffage Génie Civil and Eiffage Energie Systèmes was recently issued a Full Notice to Proceed (FNTP) by Denham Capital platform 'Themis' to begin construction of the Singrobo dam and hydroelectric power station in Côte d'Ivoire. Eiffage was awarded the contract to build the Singrobo hydroelectric dam in October 2018.

This project, which is being handled under a design-build contract by Eiffage Génie Civil and Eiffage Energie Systèmes, is located on the Bandama River between Abidjan and Yamoussoukro. It includes the construction of a mixed rockfill and concrete dam, a spillway, a plant housing the turbines, a discharge channel, the switchyard, the line connecting the power plant to the grid, temporary facilities and access roads.

The project is expected to be complete in 34 months and the power plant will produce 44 MW.

Scatec Solar Commissions Hybrid Facility in South Sudan

Scatec Solar has commissioned a combined solar and battery storage plant in Malakal, South Sudan. The plant will power the Humanitarian Hub in Malakal, which is managed by the International Organization for Migration (IOM). The project will reduce the diesel consumption at the Hub by at least 80%.

"We are thrilled to have completed this project for IOM and the Humanitarian Hub in Malakal. This is our second hybrid project for a United Nations (UN) organization in South Sudan, and with a third project to be completed for UNMISS in the next few weeks, we are reinforcing our support of the United Nations in their quest to reduce their use of fossil fuels," said CEO of Scatec Solar, Raymond Carlsen.

Scatec Solar has developed the project in partnership with Kube Energy. The plant, with a solar PV capacity of 700 kWp, combined with a 1,368 kWH battery energy storage system is connected to IOM existing diesel generators. The delivery of solar power will represent 80% of the energy consumed at the hub, greatly reducing the need for diesel, and providing significant reductions in both CO_2 emissions and energy costs. This is a key step in meeting UN targets on abatement of greenhouse gas emissions. Another obvious benefit is the silence already noticed by people at the Hub now that the generators are turned off most of the time.

Sorce: Scatec Solar

The project is provided through a flexible energy supply agreement. Carlsen is convinced of the potential of similar leasing arrangements to support the transition to clean energy in humanitarian operations: "Through providing leasing of solar hybrid plants, we are reducing the barriers for using renewables. The combination of a movable, quickly installed equipment and flexible contract length increases our customer's financial flexibility, allowing them to access clean and reliable solar power through monthly invoices, rather than high upfront investments," he said.

The Humanitarian Hub hosts around 300 workers and 34 organizations. As most remote operations, they rely heavily on diesel-run generators, which are polluting, costly and quite often inefficient. IOM seeks to improve the Humanitarian Hub's environmental footprint, and the project is an ideal step towards reducing IOM's dependence on non-renewable energy.

Tanzania's First Wind Farm Comes Online

Tanzania's energy sector has broken new ground after the country's first ever wind farm started generating electricity as part of its start-up testing procedures. Construction of the 2.4-MW plant was completed in May, made possible thanks to a $1.2 million loan from the Renewable Energy Performance Platform (REPP), which concluded the financial structure for the project.

Sorce: REPP

Following mandatory pre-commissioning tests at the project site in Mwenga, situated in the Mufindi District of Tanzania's Iringa region, the first of the wind farm's three turbines spun into action on June 5. The turbine is expected to initially operate at a pre-set low production rate, before being gradually increased to full capacity in line with the commissioning procedures. The other two turbines were expected to come online in a similar manner shortly thereafter.

Once fully operational, the wind farm will provide much-needed energy security to customers of a rapidly expanding private rural grid network developed and operated by project developer Rift Valley Energy Group.

Until now, the network – which is the first of its kind in Tanzania – has been powered by a 4-MW hydropower plant that has been operational since 2012. The hydro plant provides clean, grid-quality electricity to more than 4,500 homes and businesses across 32 villages, with any surplus power sold to TANESCO under a hydropower purchase agreement.

The wind farm will now enable Rift Valley Energy Group to continue with its network expansion plans and connect an anticipated 1,500 more customers over the next two years. The farm will also serve to ensure there is always sufficient generation capacity available to its growing rural grid, even during the dry season when the hydro plant's generation capacity significantly reduces as a result of the region's seasonality of rainfall.

Kenya's Kipeto Wind Farm Sees Last Turbine Installed

Kipeto Energy report that on May 31 it successfully installed the last of 60 WTG's with no Incidents recorded. GE supplied 60 of its 1.7-103 turbines for the construction of the plant. The new wind farm will provide the energy needed to power 40,000 households in the region.

Source: Kipeto Wind Farm

The 100-MW Kipeto wind power project will provide clean energy to the national grid as a significant contribution to Kenya's Vision 2030 and Big Four Agenda.

"This is a great milestone and we are very proud of the entire Kipeto Energy PLC team, all our shareholders and all stakeholders who have worked tirelessly towards the achievement of this great milestone despite the current Covid-19 pandemic," a statement on Kipeto's website read.

Egypt's NREA Plans Additional 3,170 MW of RE

In line with the Egyptian government's aim to increase the share of renewable energy in the country's energy production mix by 20% by 2022, and doubling it by 2035, the New and Renewable Energy Authority (NREA) said it plans to add 3,170 MW of renewable energy comprised of solar and wind energy projects.

"The projects under consideration are wind farms with a total capacity of 2,200 MW and solar power plants with a combined capacity of 970 MW," said NREA Director Mohamed El-Khayyat.

The country already has a mega project underway with the BenBan solar complex in the south of the country. Benban Solar Park is a solar PV power station with a total capacity of 1650 MWp which corresponds to an annual production of approximately 3.8 TWh.

Cameroon and Chad Electricity Project Slated for $385 Million Loan

World Bank Group subsidiary, the International Development Association (IDA), has approved two loans, valued at $385 million dollars, for Cameroon and Chad. The funds will be used to finance an electricity interconnection project between the two Central African countries. Cameroon will receive $295 million while $90 million is slated for Chad.

The Project development objectives are to interconnect the southern and northern power systems of Cameroon, enabling electricity trade between the two nations, and increasing access to electricity in the Chad capital city of N'Djamena.

Rwanda Gets Serious, Announces Multi-Billion Climate Plan

Rwanda submitted its new national climate plan, dubbed Nationally Determined Contributions (NDCs), to the United Nations Framework Convention on Climate Change (UNFCCC) in early June. The plan aims to create essential tools to implement the Paris Agreement to cope with climate change. The 10 major projects under the plan will amount to $2.4 billion over the next 10 years. The government of Rwanda will be a major financial contributor as well as NGOs, the Rwanda Green Fund and both domestic and international investors.

Some of the projects will focus on solar-powered solutions such as solar mini-grids, solar powered cook stoves, and solar irrigation solutions. Around $900 million is slated for the integration of electric vehicles under an e-mobility program that plans for the phased adoption of electric buses, autos and motorcycles from 2020 onwards. The program also includes an energy-from-waste component to reduce methane gas emissions as well as various agriculture projects to reduce gas emissions from farming and livestock.

By Diogo Xavier da Cunha / Joana Gonçalves
Miranda & Associados

MOZAMBIQUE
REGULATORY UPDATE

New downstream regulations in Mozambique have been set but will they encourage the production of petroleum products for domestic use?

Over the years, Mozambique has been an importer of oil, gas and petroleum products in general. The situation has somewhat changed over the last 15 years or so with the start of natural gas and gas condensate production in the Pande and Temane fields. Still, most of the natural gas production is exported to South Africa by pipeline and only a fraction is used in Mozambique in industrial, gas-to-power and limited local distribution projects.

The country's importer status has been not only the result of its own domestic supply needs, but also a consequence of its strategic geographic location. Several neighboring interland countries – such as Zimbabwe, Zambia and Malawi – are also dependent on oil and gas imports to satisfy their needs and Mozambique is a natural gateway for such imports. Therefore, the Mozambican downstream business, besides the domestic supply, has always comprised a significant component of petroleum products in transit to neighboring countries.

The prospects of change are however very significant. On the one hand, there are plans for some light oil production to be used in the local production of petroleum products. And on the other hand, there is considerable hope that part of the very large natural gas reserves discovered in the Rovuma Basin will not be exported as LNG and will be used domestically in different projects, such as power generation, production of fertilizers and gas-to-liquids (GTL).

The regulation of downstream activities in Mozambique has therefore historically significantly focused on import activities and pricing-related issues. Notwithstanding, activities such as production, reception, storage, handling, transportation, distribution, trading, exportation and re-exportation of petroleum products have also been regulated and liberalized. Duly licensed private entities have been able to carry on these activities for many years now and this was the case under the former Petroleum Operations Regulations, which had been approved by way of Decree No. 45/2012, of 28 December 2012. It was therefore with some expectation that existing and prospective stakeholders viewed the Government's initiative of revision of such statute. Eventually such revision was enacted in the form of Decree No. 89/2019, of 18 November 2019, which approved the new Petroleum Products' Regulations and revoked the former 2012 Petroleum Downstream Regulations.

The expectation among industry players was not however the same across the entire value chain. While the majority of existing stakeholders were mainly concerned with the impact of changes on ongoing activities and these essentially related to import and pricing, prospective investors looking at future production activities were hoping to see some evolution on how the use of oil and gas of Mozambican origin would be treated by the lawmaker. It is fair to conclude that not all expectations were adequately addressed by the Government, as we will further discuss below.

By way of initial observation, we would say that the 2019 Petroleum Products' Regulations represent a relatively light evolution of the legal framework set forth in the 2012 Petroleum Downstream Regulations. The focus appears to have been to clarify certain matters that were not previously fully addressed, while preserving a similar structure to the regime now repealed. A number of changes were introduced, most importantly in connection with the licensing procedure: while production and distribution licenses remain standardized, specific subtypes for retail and storage are now available for downstream players, as well as a new license for exportation. A new register for petroleum downstream facilities is created and the registration and inspection requirements and procedures are detailed. Comprehensive provisions on the transfer of petroleum facilities are also included.

Bunkering activities are again regulated, as is also the case of the supply of petroleum products to platforms, support vessels and other facilities used in petroleum upstream activities. Such supply continues to be exclusively reserved for distributors licensed in Mozambique.

IMOPETRO is once more entrusted with the role of Liquid Fuels Procurement Operator for LPG, gasoline, jet fuel and diesel. Although the importers of record will be distributors or other eligible licensed entities, IMOPETRO acts as their agent in purchasing the petroleum products from abroad.

"…there is considerable hope that part of the very large natural gas reserves discovered in the Rovuma Basin will not be exported as LNG but will be used domestically in different projects, such as power generation, production of fertilizers and gas-to-liquids (GTL)."


Source: Sasol

Currently, Sasol's operations in the Pande and Temane fields feed the country's downstream exports via pipeline

An important variation is that the share capital of IMOPETRO will no longer have to be held in at least 51% by the State-owned fuels company, PETROMOC – Petróleos de Moçambique, and that such capital shall be held by the licensed distributors *prorata* to their market share and taking into account the geographic coverage of their business. Among the detailed provisions on the conduct of IMOPETRO's business activities, it is worth highlighting that its management shall be entrusted to a General Manager hired pursuant to a public tender, although subject to homologation of the Minister of Mineral Resources and Energy.

To ensure the transparency and competitiveness in procurement procedures, a Liquid Fuels Procurement Committee (CACL) is also foreseen and its composition and powers are thoroughly addressed. This evidences a particular concern in monitoring the cost of imports in view of their impact on the price structure. This is further evidenced by the provisions on international public tender requirements and procedures relating to supply contracts to be entered into by IMOPETRO.

Price regulation is also once more one of the key matters detailed in the 2019 Regulations, including in terms of the margins of distributors, storage retailers and general retailers selling products to end consumers. ARENE (Mozambique's Energy Regulatory Authority) is responsible for determining the sales prices for end consumers to be practiced throughout the Mozambican territory.

Another matter that carries on being thoroughly dealt with pertains to the security of supply and the creation of strategic reserves. Safety standards for petroleum facilities and technicians are also provided for, as well as the specifications for petroleum products and associated inspection mechanisms.

Lastly, one must also stress the concern evidenced in multiple provisions of the Regulations in connection with anti-competitive practices. In most cases, these provisions stand on their own, but it will always be necessary to take into account the general legal framework applicable to competition matters.

Overall, one can say that the 2019 Petroleum Products Regulations are a positive evolution of the 2012 Downstream Regulations. Notwithstanding, the lawmaker has not been particularly concerned in creating a more robust regime for the local production of petroleum products, in particular on the basis of oil and gas originating from Mozambique. It is true that the preference for the procurement of locally produced products is expressly provided for, but there is no distinction between products deriving from imported oil and gas and products originating from oil and gas extracted in Mozambique. This is also reflected in various pricing-related provisions.

Still, the more relevant issues that prospective investors in sizeable downstream activities face arise from other pieces of legislation. There is no specific tax regime for production activities, for instance. The same applies to investment and foreign exchange matters, which are typically delicate. Furthermore, certain larger projects, as would be the case of a refinery, would have to tackle the challenges presented by the legislation on public-private partnerships, large scale projects and business concessions, but it is unclear to which extent such legislation could also apply to other entities involved in downstream activities. It is probably too harsh to state that the lawmaker has lost a good opportunity to fix all these issues, but it is fair to acknowledge that with regard to the production and use of petroleum products deriving from oil and gas extracted in Mozambique, the new Regulations have not quite lived up to the industry expectations.

"Overall, one can say that the 2019 Petroleum Products Regulations are a positive evolution of the 2012 Downstream Regulations. Notwithstanding, the lawmaker has not been particularly concerned in creating a more robust regime for the local production of petroleum products…"

About the Authors

**Diogo Xavier da Cunha is the Managing Partner and Global Head of the Energy and Natural Resources Practice at Miranda & Associados. Diogo frequently advises oil &gas companies in setting up and carrying out their operations in Africa. Joana Gonçalves is a member of the Energy and Natural Resources Practice at Miranda & Associados. Diogo and Joana may be contacted at Diogo.Cunha@mirandalawfirm.com and Joana.Goncalves@mirandalawfirm.com.*

POLYSTOPP® Quick Connect System Increases Safety and Speed of Gas Distribution Pipeline Isolations

T.D. Williamson (TDW) has introduced its latest isolation innovation for the gas distribution market, the POLYSTOPP® Quick Connect system. Lightweight and easy to use, it allows operators to isolate a polyethylene (PE) line twice as fast as other methods while preventing the damage associated with squeezing.

According to HT&P senior product manager Ryan Ragsdale, it takes less than 10 minutes to tap and isolate a pipeline with the POLYSTOPP Quick Connect system. The technician can install the tapping, plugging and completion machines onto the valve in about 20 seconds each, and removal is just as fast.

"Faster isolation dramatically decreases job time and increases efficiency while preserving pipeline integrity, which maximizes value to the operator," Ragsdale said.

The POLYSTOPP® Quick Connect system is extremely lightweight compared to previous solutions. All components are made of aluminum, including the valve and tapping, plugging and completion machines. That makes it light enough for a one-person lift operation.

POLYSTOPP Quick Connect technology allows TDW to meet the needs of the PE market with something the industry has never seen before.

"Because we understand that the gas distribution industry is truly a lifeline for everyday citizens, TDW is constantly looking to develop technology that will enable operators to enhance pipeline integrity and do it faster, easier and more safely," Ragsdale said.

This is the second cutting edge isolation product TDW has brought to gas distribution operators in recent months. The ProStopp™ DS isolation tool is the first and only low-pressure double block and bleed technology specifically designed for that market.

Source: T.D. Williamson

PolyStopp Quick Connect System-Completion

Intertek Launches Remote Video Inspection

Intertek, a Total Quality Assurance provider to industries worldwide is increasing the availability of its innovative Remote Video Inspection (RVI) service, a technological solution driven by its Total Quality Assurance experts, to ensure business continuity of critical vendor inspection services across the oil and gas supply chain during the current health and safety site restrictions.

With the unprecedented global spread of Covid-19, governments and businesses around the world are taking steps to respond to the outbreak and to protect the health, wellbeing and safety of their people. These actions also impact International Oil Companies (IOCs) and National Oil Companies (NOCs) based in the Middle East and North Africa region and their regional and international vendors that have implemented policies to restrict the access of third parties to their sites to undertake crucial audit and inspection services.

As a leading global provider of third-party vendor inspection solutions, Intertek's Technical Inspection Services business is well-prepared and has rapidly adapted to the constantly evolving environment by digitalizing some of its processes to become contactless, while continuing to help global customers maintain critical business continuity, supply chain requirements and manufacturing schedules.

Through remote live video streaming and smart phone technology, Intertek's technical specialist inspectors can remain home-based during travel and access restrictions while still leading the inspection activities within the client premises. Customers in the UAE, Saudi Arabia, Bahrain, Iraq, Kuwait, Oman, Qatar and Egypt can interact with the Intertek technical specialist to ask questions and visualize the experience. As the inspections are undertaken in real-time, in the event that potential issues are identified during the inspection, follow-up actions can be discussed without delay, resulting in productivity gains and faster issue resolution times.

Intertek's RVI solution has been deployed to companies throughout the world, including the Middle East, so that the company's vendor inspection activities can continue to deliver the essential value that protects end-user clients and their supply chains from exposure to quality defect risks. Driven by Intertek's global network of expert and experienced technical specialists, and supported by security protocols and standard operating procedures, the RVI solution enables quality control, inspection, and quality assurance activities to continue without compromising safety and quality and irrespective of location.

Hussain Al Atrakchi, Vice President of Intertek Industry Services for Middle East, North Africa, and West Asia, explained: "Health and safety restrictions are real challenges for Intertek's clients who wish to safeguard business continuity whenever authorized access is limited. The remote inspection team helps clients ensure their equipment comply with the required specifications and that their projects stay on schedule by minimizing disruptions to their supply chain. When measured in hours saved by technicians, the RVI solution can lead to up to 70% productivity gain. The issue resolution time also becomes 20% faster by using the Intertek RVI App and smart technologies in real-time."

Weatherford Production Optimization Platform Delivers Multimillion-Dollar Savings

Weatherford International plc has announced its ForeSite® Production-Optimization Platform demonstrated $18 million in annual savings for a Fortune 500 producer by delivering measurable improvements in efficiency, uptime and production. The compelling combined results persuaded the operator to order a global rollout of Weatherford's field-wide intelligence platform to maximize production across their U.S. and international operations.

Weatherford, in tandem with the West Texas operator, successfully implemented the ForeSite production-optimization platform enterprise-wide, leveraging existing field-data streams as a path to improving efficiencies for multiple forms of artificial lift. Demonstrated improvements included savings in equipment life and personnel gain through management-by-exception techniques.

"The customer's objectives were clear," said Manoj Nimbalkar, Global Vice President, Production Automation and Software, Weatherford. "One, the solution must accommodate multiple forms of production,

Source: Weatherford

including natural flow, rod lift, gas lift, and electrical-submersible pumps (ESPs). Two, Weatherford must create an enterprise-wide, data-agnostic optimization system to reach across multiple software systems and companies. Three, the solution must leverage historical data from the outgoing software and integrate real-time feeds from the existing Weatherford CygNet® SCADA platform, as well as a competitor's field-allocation and well configurator."

The Weatherford production-optimization team collaborated with the operator to assess the production strategy and data needs across thousands of wells. Together, Weatherford and the operator agreed to a phased rollout of the ForeSite production-optimization platform, starting with an initial pilot that was governed by KPIs that would lead to further, enterprise-wide adoption.

Following the complete rollout, the operator expects an annualized savings of $18 million per year. These projections include a savings of $6 million in personnel efficiency, $7 million in increased equipment run-life, and an additional $5 million in revenue garnered from wells transitioned more quickly from natural-flow lift to artificial lift.

ForeSite was installed on a subset of wells – including natural flow, reciprocating rod lift, gas lift, and ESPs – and the platform seamlessly integrated all existing and historic data-management and planning systems into a single production-optimization platform. The resulting real-time efficiencies empowered the operator to manage all pilot wells, both productive and underperforming, by exception, leading to the multimillion dollar savings in both production and uptime.

"The ForeSite pilot exceeded all KPIs and as a real result, the program was expanded to include nearly 1,000 wells in a Phase 1 rollout, which will be adopted enterprise-wide over the next two years," said Nimbalkar

Halliburton Launches Real-Time Wireless Depth Correlation System

Halliburton introduced the DynaTrac Real-Time Wireless Depth Correlation System, a new technology that reduces uncertainty and saves rig-time by enabling operators to accurately position packers, perforating guns and the bottom-hole assembly without running wireline or moving the work string.

The DynaTrac system takes static measurements to determine the position of the BHA before and after setting the retrievable packer. Operators can measure depth at any time while tracking changes in position to improve operational efficiency.

"We developed DynaTrac to provide operators with a safer and more accurate position of their BHA depth in real-time," said Daniel Casale, vice president of Testing and Subsea. "The technology reduces downhole uncertainty and improves reservoir insight while saving valuable rig-time."

Source: Halliburton

Through on-demand measurement of tool position, the technology reduces health, safety and environmental risks associated with performing wireline operations. Additionally, operators can configure the system to perform automatic position measurements to track BHA movement over time, which increases the accuracy and reliability of reservoir analysis.

Addressing the Challenge of Corrosion in Downhole Tubing and Casing Applications

Non-metallic Innovation Centre brings together TWI and DNV GL to develop first industry guidelines for composite tubing and casing in downhole oil and gas

Leading players in the oil and gas industry, TWI and DNV GL, have come together under the auspices of the Non-metallic Innovation Centre (NIC) to address the significant challenge of corrosion in downhole tubing and casing applications in the oil and gas industry. For example, the annual cost of this in relation to tubing was estimated by NACE at $463 million in 2018, representing over 33% of the total cost of corrosion in the oil and gas industry.

Fiber reinforced polymer pipes, however, offer an alternative solution because they are corrosion free and provide a number of benefits, such as higher strength to weight ratio when compared to metallic pipes; smoother bore that reduces rig capacity requirements; and the potential to be spoolable making them easier to transport and install than metallic pipes. In addition, the application of non-metallics can lead to cost savings due to reduced workflow and interventions, greater well integrity, improved safety levels and lower environmental risk.

Despite the tangible benefits of using composite materials, there is still a reluctance to use non-metallic tubing in casing in the oil and gas industry but, working together, TWI and DNV GL have identified that the main barrier to their application is the lack of rigorous design and qualification practices, which would serve to minimize the risk of premature failure and provide operators with confidence in technology adoption.

Furthermore, adaptation of the failure envelope approach for steel pipes, as in standard API 5C2/C3 for non-metallic pipes, requires substantial effort and resource as it necessitates a large amount of full-scale testing. This makes qualification of such products impractical, costly and time-consuming.

To address these challenges, the NIC has invested in a TWI – DNV GL collaboration that will see them jointly develop the first industry guidelines for the design and qualification of composite tubing and casing for downhole oil and gas applications. These will lead to a reduction in the amount of full-scale testing required, providing a toolkit with which to optimize associated costs and engender a higher level of confidence in overall product performance.

The guidelines will utilize experience from across the value chain of composite pipes, and state-of-the-art design pyramid practices developed

Source: TWI

An example of plastic pipes

in DNV GL composite standards such as DNV GL-ST-C501 and DNVGL-ST-F119. The design pyramid approach is a multi-scale modeling and testing scheme which includes testing at different scales and connecting them by models. It has been successfully developed and tried in DNV GL-ST-F119 for Thermoplastic Composite Pipes (TCP) in past years with multiple TCP products already fully qualified and in service.

The first phase of this Joint Industry Project (JIP) is due to commence in summer 2020 and will include around 10 participants from the oil and value chain.

Mihalis Kazilas, NIC Program Director said: "TWI is delighted to come together with DNV GL for this project on which we can pool our many years' expertise and experience in the oil and gas industry." "We believe that the guidelines we plan to develop are essential in enabling the deployment and adoption of non-metallic tubing and casing, and will also serve to accelerate and support the development of new products." he added.

Principal Specialist, Fracture Mechanics and Non-metallics, DNV GL Ramin Moslemian said, "DNV GL is happy to work with TWI and other partners in this JIP to expand the use of composite tubulars to downhole applications, using the multi-scale methodology of our standards for composite components."

Augmented Reality in Plantweb Optics

Emerson integrates augmented reality into Plantweb optics software, enhancing remote collaboration, workforce effectiveness

Source: Emerson

Emerson has recently introduced augmented reality (AR) technology to its Plantweb™ Optics asset performance platform, delivering enhanced access to real-time diagnostics and analytics, as well as live remote assistance, to industrial plant workers responsible for maintaining and optimizing plant equipment. With AR technology integrated into Plantweb Optics, companies can improve productivity, collaboration and operational performance, without being limited by shortages of skilled workers or travel restrictions.

"Successful digital transformation programs that lead to Top Quartile performance have people and work practices as a key focus. Adopting innovative technology like augmented reality and institutionalizing best practices enable workers to add more value than ever to operational and business performance," said Stuart Harris, group president for Emerson's digital transformation business. "With these new Plantweb Optics technologies, customers can experience significant improvements in equipment reliability and the safety of their facilities."

Plantweb Optics leverages artificial intelligence, machine learning analytics and data contextualization to provide real-time visibility into plant reliability and operational performance. Unlike standalone AR solutions that require custom engineering, AR is integrated into Plantweb Optics, providing immediate access to a wealth of data and translating into easier, less costly implementation and a faster return on investment. For use by manufacturers in the life sciences, food and beverage, chemical, metals and mining, power and water, pulp and paper and energy industries, Plantweb Optics is part of Emerson's Plantweb™ digital ecosystem of technologies, software and services.

Augmented reality for Plantweb Optics transforms the way field technicians accomplish complex tasks through enhanced situational awareness, live remote assistance and analytics delivered in context of the plant. As a field technician walks an industrial plant with a mobile device, Plantweb Optics uses spatial computing technology to map assets and provide technicians with critical maintenance information relevant to their location. Plantweb Optics overlays real-time analytics, equipment health status and technical support documentation on their field of view, so technicians can safely resolve issues sooner.

The augmented and virtual reality market is projected to grow annually at 40% from 2017 through 2025, according to multiple research reports. Much of this spending will come from manufacturers around the globe using AR technology to help upskill their workforce for digitalized operations.

With live remote assistance, field technicians can be virtually shadowed by experts, either on-site or off-site, from Emerson, their own company or another service provider. Experts can talk, type or augment the technician's mobile display with graphics to guide the next action. Live remote assistance enables technicians and experts to collaborate for safe troubleshooting and repairs, regardless of location and without travel costs. Live remote assistance sessions, best practices and notes from experienced engineers and step-by-step troubleshooting procedures can be logged into a knowledge library for use by all engineers at a site. The knowledge library is a resource for companies to standardize procedures and ensure engineers of all experience levels understand an asset's history and are using best practices for safe, efficient operations.

By Toufik Khitous
Business Development Manager for North Africa
Wärtsilä Energy Business

How Egypt Banks on Renewables to Meet Expected Surge of Energy Demand

To meet its soaring demand for energy, Egypt is turning to renewable sources. Its targets, if accomplished, will see it become a pioneer in the African energy landscape. But are the plans realistic?

Egypt's population has now passed 100 million. As one of the most populous and fastest-growing nations on the African continent, providing electricity to all its citizens is a matter of priority for the Egyptian government.

To ensure continuous security and stability of energy supply, Egypt has launched an energy diversification strategy, known as the 2035 Integrated Sustainable Energy Strategy (ISES), which aims to step up the development of renewable energy and energy efficiency in the country.

Egypt aims to produce 20% of its electricity using renewable sources by 2022 and 42% by 2035. For the second target, the goal is for wind to provide 14%, hydropower 2%, and solar 25%.

Ambition driven by necessity

This is a hugely ambitious energy plan, but it is one that is necessary for Egypt to flourish. In particular, the country wants to diversify its mix of power sources. Egypt has introduced nuclear power and it is also developing a few megaprojects that will bring a massive amount of gas into its energy mix.

This is in stark contrast to 2014, when, due to electricity shortages, Egypt was forced to introduce more coal into its energy mix in order to lower its dependence on imported gas. Rising demands, the falling costs of renewable energy, and the discovery of new natural gas resources have allowed Egypt to both diversify its energy mix and become an exporter of gas.

Furthermore, environmental concerns over the generation and use of coal have reinforced this ecological approach. Egypt has signed up to the United Nations Framework Convention on Climate Change (UNFCCC), meaning that it has no option but to reduce its dependence on fossil fuels.

The spill-over effect

Tapping into renewable energy will benefit Egypt in ways more than one. It will enhance the country's economic growth and bring revenues

in foreign currency. The increased usage of renewable energy is expected to lead to exporting fossil fuels or using them in other areas domestically, such as industrial production.

The transition to renewable energy sources is also expected to help local businesses in Egypt, since the cost of electricity is an essential factor for business owners. While solar power and sustainable electricity are not widely available in the country yet, there is merit in Egypt's plan to tap into renewable energy resources in the long run. More factories will lean towards sustainable renewable energy if it is economical, due to the cost of production and increasing price of electricity.

Need of the hour

But to leverage the benefits of the transition to renewable energy, Egypt needs to overcome a few infrastructural and geographic hurdles.

A report by the International Renewable Energy Agency (IRENA) provides a comprehensive assessment and recommendations for primary measures that Egypt must consider to achieve the goals set out in ISES. The report points out the need to update Egypt's electric power sector strategies to reflect the growing cost advantages and other benefits of renewable energy. It also focuses on reforming the existing market framework to improve the economic feasibility of projects.

Additionally, the country is very much split in two by the fabled river Nile, with many regions in the south still not connected to the national grid. Egypt is very keen to invest in the tourism sector along the Red Sea, meaning there is a need for not only infrastructure but also the power to supply to these regions.

Egypt's situation has changed a lot since 2011. Nowadays, the issue is distribution rather than consumption. Egypt has a tradition of setting its energy distribution vertically. This has a rather negative impact on how the energy is consumed, but this can change since we are starting to see more industries coming into the country as Egypt is encouraging private sector participation.

What lies ahead?

Between 2022 and 2027, Egypt plans to install an additional thermal power plant and two clean coal technology power plants. These initiatives are expected to exceed the nation's peak power and electricity demands. Of the renewable energy targets for 2022, both solar and wind are considered achievable. In particular, the Benban Solar Complex project, which is considered one of the largest solar PV power plant projects in the world, and has a total installed capacity of 1.8 GW, is foreseen to come online alongside a number of utility-scale wind farm projects in Gulf of Suez.

Egypt certainly has a lot of unanswered questions at present, but it does seem to be on the right track. Three big parts – gas, sea turbines and renewables – need to play their part going forward. Egypt has no choice; it must invest in renewables. The sector at the moment only makes up around 2% of the energy mix, but these announcements could raise it to 20% – this is almost a revolution.

OPPORTUNITIES ABOUND IN SOUTH SUDAN

The Republic of South Sudan offers opportunity and potential for those willing to take a chance on this growing nation.

The country gained independence from Sudan in 2011, and after a rocky start, it is finally on a path towards stability and growth. The much-awaited government of national unity, elected in February 2020, is now in place and their focus is on growth and economic stability.

Source: Africa Oil and Power

Shawn Robert Duthi

But just how stable is South Sudan and what opportunities are there?

Shawn Robert Duthie, the Managing Director of Inyani Intelligence, an Africa-focused risk firm offering political risk analysis and due diligence investigations shared his insights into the Republic of South Sudan and the potential for the bold investor.

Canadian born, Duthie is passionate about Africa and explains that one of the main aspects he pushes in his risk consulting is that it's not just about risk but opportunity as well – and Africa abounds with potential and opportunity.

Duthie, who's previously worked in South Sudan, has a keen interest in the region. He says that having a focus on South Sudan is interesting, as it's an area that a lot of companies aren't looking at getting involved in.

He says, "A lot of Western companies are staying away from South Sudan, which is unfortunate and should change. There's a lot of negative imagery around the country, because of the war, but the opportunities here are huge. This is a frontier country – oil and gas is the main thing – but everything needs to be built up, so there are plenty of opportunities for infrastructure, development, retail and manufacturing. Everyone just thinks oil and gas, but it's a blank slate and if you have a service to offer, it could do very well in South Sudan."

Given that the country has come out of a civil war, it's not surprising that political instability is a major risk. The biggest fear for would-be investors is whether the new government of national unity can hold on to the peace and prevent any return to conflict.

South Sudanese Undersecretary in the Ministry of Petroleum, Hon. Engineer Awow Daniel Chuang reassured would-be investors saying, "We think right now the political situation has improved, following the signing of the peace agreement and formation of the new government. We believe the situation for both South Sudan and the hydrocarbons sector will improve in the future. Over the years we have suffered because of political instability, but now the time is right because the political process is going very well. This will help attract more investors to South Sudan."

South Sudan's Toors Oil Field

Source: South Sudan Ministry of Petroleum

Duthie says, “If the new government can govern properly, hold onto the peace, the balance between the different factions, and put forth policies that are good for investors and positive for the country, then it’s on the right track. Investors want to see that oil revenue won’t be wasted on corruption and white elephant buildings but rather it’s put into infrastructure, education and invested into the country – and then the risk profile lowers quite a bit.”

Investors can take heart that there are signs of positive growth in South Sudan. Before the outbreak of Covid-19, the IMF and World Bank expected South Sudan to be the fastest-growing country in the world in 2020, growing by 8.2%, but because of the pandemic, this figure is now reduced. According to the IMF’s Regional Economic Outlook Report on Sub-Saharan Africa (April 2020), the real GDP growth for South Sudan is now 4.9% for the year. This figure is considerably more impressive when one considers that between 2010-2016 the GDP was -7.4. However, the GDP has grown considerably over the years, in 2017 it was -5.5%, 2018 was -1.1% and there was massive growth in 2019 when it hit 11.3%.

Source: South Sudan Ministry of Petroleum

Infrastructure from the Paloch Oil Field

Duthie isn’t surprised by this growth, saying, “Part of the economy’s recovery is rebalancing from the war, as the GDP dropped quite a bit during the war, so it’s this rebalancing and the opening up the oil sector which further pushes up the growth. If the government can get the policies correct, there’s no reason why they can’t sustain 5% + growth for the next five to 10 years. There’s lots of potential and opportunities in South Sudan, especially for smaller companies that have a bigger risk appetite. If a company goes in, makes a long term investment and is willing to work hard it will pay off. If a smaller company, that isn’t so risk-averse goes in with a strong social development stance and is willing to invest long term in the country, then this type of company will see a higher reward.”

Opportunities abound for those willing to invest in the country as Undersecretary Chuang explains that while major oil discoveries have been made in the past, there is now an opportunity for more expansion in the oil sector saying, “The geology for South Sudan’s unexplored reserves is very promising, we believe it’s an even bigger opportunity. This is why we are launching new licensing rounds. We know new companies will make more discoveries in South Sudan once they start to explore.”

The country hopes to launch new licensing rounds early next year.

South Sudan to Launch Licensing Round in 2021

The Republic of South Sudan is moving forward with the launch of a new licensing round early next year. Plans to hold its first licensing round in the first quarter of 2020 were derailed due to the Coronavirus pandemic.

Source: South Sudan Ministry of Petroleum

Daniel Awow Chuang

Undersecretary for the Ministry of Petroleum Hon. Eng. Awow Daniel Chuang, says, “Unfortunately, the Coronavirus pandemic has forced us to postpone the launch. Hopefully, we can possibly launch the licensing round early next year. The pandemic has caused the delay as no-one would have been interested in the launch if we had continued with it.”

Currently, South Sudan can produce oil in three areas but are only producing in two of them. According to the Undersecretary, the country’s total current production is between 170,000 and 172,000 barrels per day (bpd) which is not too far off from the projected target of 190,000 bpd.

According to reports last year, the country had planned to offer 14 northern blocks in the licensing round. The new exploration activities will provide a boost to the country, helping accelerate economic recovery and spur the appetite of international oil investors and services companies. South Sudan is also looking to attract diverse foreign investors to the oil sector.

Currently, there are investors from China and Malaysia, and the country is hoping to encourage more investment from the West. It hopes multinational companies will return, as many left the country when the conflict broke out.

The Undersecretary adds, “We have ambitious plans. We were aiming to achieve our target of around 250,000 bpd by the end of next year, but current circumstances have made it difficult. Within a very short period, we should be able to achieve 220,000 bpd and then 250,000 bpd. But this will not be achieved this year. We have the potential to reach 300,000 bpd by around 2022.”

ANGOLA

The pandemic, the oil glut and resultant barrel price crash in global markets has been a disaster to producing nations in Africa, and Angola has not been spared. Projects are stalled, or progressing more slowly, and there is little investment appetite for oil or service companies to take on new projects.

Before the dual crises for the petroleum industry hit, Angola had an upbeat outlook, with a new bid round scheduled, drilling campaigns scheduled, seismic shoots planned or underway and operators had strategies to ramp up production. Then came the announcement from Angola's National Agency of Petroleum, Gas and Biofuels (ANPG), the country's national concessionaire.

On June 1, ANPG announced that the schedule of the planned bid round would see a delay due to the effects of the COVID-19 pandemic. It did not point to the low oil prices and oil companies rationalizing budgets, but surely it was a factor.

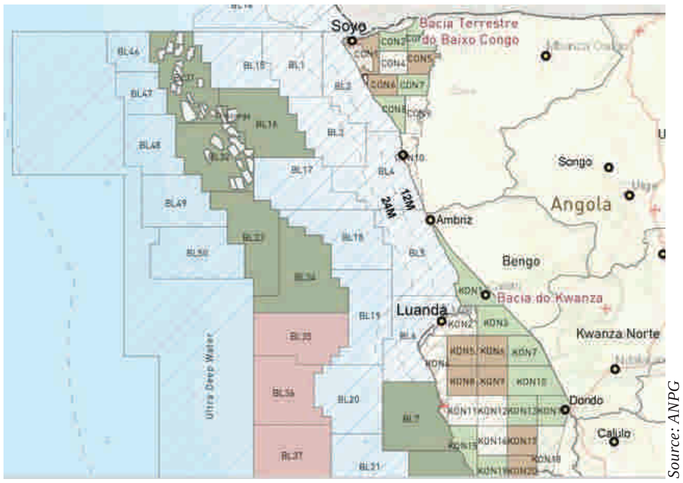
"According to the Schedule of Activities of the Bidding Process 2020, all conditions were created so that by the end of May, the announcement of the intention to launch the public tender was made, pursuant to Presidential Decree No. 86/18, of April 2. However, due to the current economic constraints caused by the COVID-19 pandemic, this date may undergo minor adjustments," a statement on the state entity's website read.

ANPG went on to stress that despite the adverse situation, "the objectives of previously scheduled bids have not changed. The need to streamline and continue petroleum operations in the country remains valid, with emphasis on exploration activities."

The state firm is still interested in hearing from prospective investors and has advised that the Data Package for blocks for oil exploration in the Terrestrial Basins of the Lower Congo (CON1, CON5 and CON6) and the Kwanza (KON5, KON6, KON8, KON9, KON17 and KON20) is available.

Upstream

Prior to the downturn, Angola's E&P sector had a good deal of activity. In January, Eni announced the start-up of its offshore Agogo oilfield, situated in the 15/06 Block in Angolan waters. The start-up took place



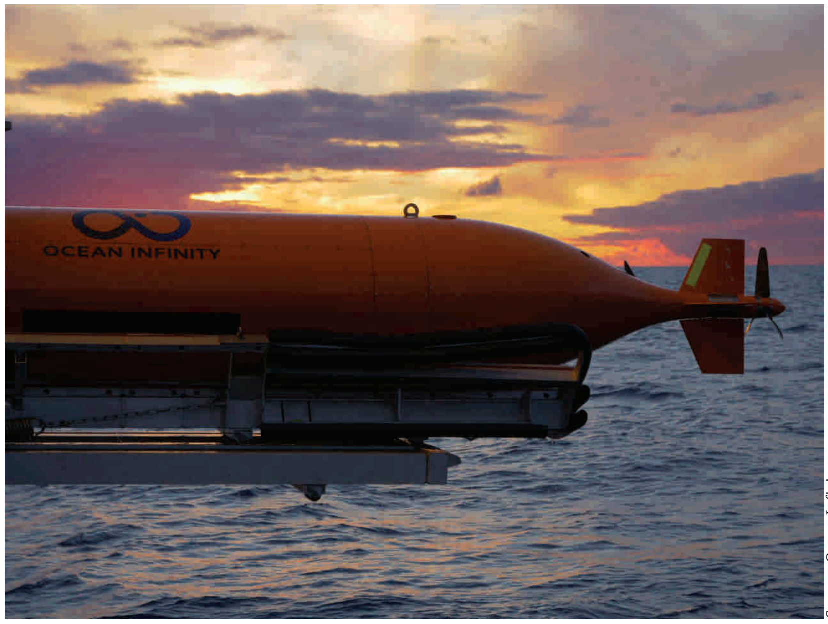
Source: ANPG

in record time, just nine months after its discovery thanks to the operational synergies facilitated by the Floating Production Storage Offloading (FPSO) vessel Ngoma, West Hub production center, situated 15 km from the oilfield.

The start-up was carried out with the drilling of the Agogo-1 well at a water depth of around 1,700 meters. Production at that time was around 10,000 barrels of oil per day (bpd) and was projected to reach 20,000 bpd. According to preliminary estimates, the field holds over 650 million barrels of oil in place, with a further potential that will be verified after the drilling of new delineation wells.

The following month, Eni had more good news with the Agogo-3 appraisal well. This appraisal well, located in a water depth of 1,700 meters, reached a total measured depth of 4,321 meters. Agogo-3 encountered up to 120 meters of net pay of light oil (31°API) in sandstones of Miocene and Oligocene age with excellent petrophysical properties. An intense data acquisition was carried out in the well and the data confirmed the communication with Agogo-2 reservoirs and the further extension of the Agogo discovery to the North. The data acquired indicated a production capacity in excess of 15,000 bopd.

BP took steps to forward its Platina field development, awarding TechnipFMC a significant integrated Engineering, Procurement,



Source: Ocean Infinity

Construction and Installation (iEPCI) contract for the Platina field development, located in Block 18 at water depths ranging from 1,200 to 1,500 meters.

The contract covers the manufacture, delivery and installation of the subsea equipment including subsea trees, a production manifold with associated subsea control and connection systems, as well as rigid pipelines, umbilicals and flexible jumpers.

Other major IOCs had activities scheduled for 2020 prior to the downturnbut subsequently slashed their budgets. Fortunately, they received extensions from ANPG which could ease pressure on both the financial and time fronts. In Block 14, a Chevron, Galp and Sonangol consortium saw its exploration period extended until 2028. Over on Block 17, a Total, Equinor, ExxonMobil and BP partnership signed an agreement with ANPG to extend their license until 2045, while an ExxonMobil-led consortium with BP and Equinor inked a PSA giving it until 2032 to undertake the work commitment activities.

Meanwhile, a couple of recent seismic programs of note were carried out. PGS announced the completion of acquisition on its MC3D Kwanza Shelf offshore survey in April. Total GeoStreamer coverage in Blocks 6, 7 and 8 and the surrounding areas of the Kwanza Shelf is now 8,300 sq kms. This MC3D Kwanza Shelf survey complements an earlier PGS acquisition, carried out in 2019.The latest Kwanza Shelf survey will provide key data for the Angolan 2021 License Round. A fast-track dataset is now available for viewing. The present-day shelf of the Kwanza Basin has been overlooked in previous exploration cycles. The combination of 3D GeoStreamer technology with modern imaging techniques is expected to unlock plays in shallow Kwanza Shelf open blocks.

Last December, Ocean Infinity announced it had been awarded a contract by Total E&P Angola, to conduct a seismic survey offshore the south-western African country deploying their state-of-the-art technology to conduct 2D Ultra High-Resolution Seismic surveys and Seabed Soil Sampling. The 28-day project, completed in March, was carried out from the host vessel *Normand Frontier* using Ocean Infinity's innovative technology, conducted 2D Ultra High-Resolution Seismic surveys and Seabed Soil Sampling in Block 32 and Block 17.

The project was the first time that geophysical, geotechnical, and seismic data had been gathered at the same time. This was achieved through simultaneous operations of Ocean Infinity's state of the art Autonomous Underwater Vehicles (AUVs) with geotechnical and seismic equipment based from one surface vessel. The successful completion of this project, which was all done from one vessel and on a single cruise out to the project site, is a major breakthrough in maximizing efficiency on sub-sea survey operations.

A New Frontier

While behind the majority of its African counterparts in the renewable energy sector, the Angolan government recently confirmed it is ready to invest nearly a billion dollars in clean and renewable energy in an effort to diversify the economy away from oil revenue dependence.

According to H.E Joao Baptista Borges, Angola's Minister of Energy and Water, the government is prepared to invest around $500 million over the next two years in solar energy projects in the country as part of a strategy to increase clean energy generation, and bring electricity to the entire country.

Additionally, Angola expects to implement a $400 million two-phase project in the clean energy segment, funded by the World Bank and the French Development Agency (AFD). The focus of the project is to improve the distribution of electricity in four Angolan provinces as well as reform the structure of public companies in the sector to increase access to affordable energy for under-electrified communities.

Downstream

Angola currently only has one operating refinery in Luanda, but has plans for more. These plans were put on the back burner when the Angolan government postponed the announcement of the winner of the public tender to construct an oil refinery in Soyo, due to the COVID-19 pandemic. According to the Ministry of Mineral Resources and Oil, the announcement will be made as soon as the Coronavirus outbreak is under control.

Companies and consortia selected and under consideration from the tender include SDRC, Jiangsu Sinochem Construction, Quantem Consortium, CMEC, AIDA and VSF, Tobaka Investment Group, AtisNebest – Angola, Satarem, Gemcorp Capital and CPP.

Construction of the Soyo refinery is part a three-pronged program to expand refining capacity in Angola. There are also plans for the restoration and modernization of the Luanda refinery, to quadruple its capacity.

By Catarina Távora
Miranda & Associados

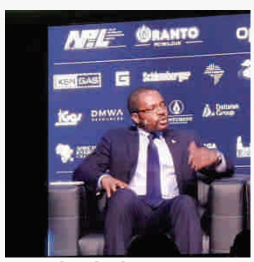
EQUATORIAL GUINEA

Turns its Focus to Refining and Downstream Projects

Some years after the discovery of significant oil reserves offshore Bioko Island during the nineties, Equatorial Guinea became the third largest crude oil producer in sub-Saharan Africa, after Nigeria and Angola. However, replicating a story that is seen in many African oil producers, it does not refine its own crude production. Fuels consumed in the country are all imported and, since the eighties, the distribution of refined petroleum products is mainly secured by Total, which began its operations in 1984, enjoying a long-lasting monopoly currently shared with the National Oil Company GEPetrol, and operating almost all fuel filling stations in the country (approximately 30).

Refining Ambitions

For the past 10 years, the government has wavered as to whether or not to embark on diversifying into refining. In 2010, Gabriel Obiang Lima, then Minister of Mines, Industry and Energy, announced plans to construct a refinery with a capacity of 20,000 barrels per day (bpd) at Mbini on the mainland of Equatorial Guinea, to produce gasoline, diesel, jet A-1 and fuel oil, with the primary purpose to supply the domestic market. KBR was awarded a contract for the design and future operation of the refinery, but the project did not advance and, in 2015, the idea of a refinery had been abandoned. On the one hand, there was the fear that the quantities and qualities of crude feedstock available for in-country refining would not be sufficient to meet the domestic market demand for the various petroleum products. On the other hand, there was a concern with the high operating and maintenance costs of a refinery and a risk of excess production which could be difficult to market due to regional logistics challenges.



Gabriel Obiang Lima

However, Equatorial Guinea has been among the countries worst hit by the crisis that affected all members of the Central African Economic and Monetary Community (CEMAC), which started in 2014 and kept deteriorating with the oil price drop. To restore its external and fiscal imbalances, Equatorial Guinea has been forced to undertake reforms and enter into an International Monetary Fund Staff Monitored Program in 2018, having as one of its goals the reduction of the country's dependence on oil and gas exports, which generate almost 90% of the country's revenues. Minister Gabriel Obiang, who in 2016 became Minister of Mines and Hydrocarbons, losing authority over other energy sources and industry, joined the effort by seeking to diversify Equatorial Guinea's petroleum sector through the launch earlier this year of a campaign to attract foreign investors to downstream projects.

The "2020 Year of Investment" campaign was not abandoned due to the COVID-19 outbreak. On the contrary, the pandemic, coupled with the recent plunge in oil prices, led the Minister to allow the postponement of different upstream projects during March 2020, but also reinforced his belief that the priority of his Ministry for the hydrocarbon sector must be to build a downstream industry in the country with a key focus on refining to stimulate local job growth.

According to the latest news, during the second half of the year, the Ministry expects to receive a feasibility study which will include the engineering and design of a 5,000 bpd modular crude oil refinery in the Punta Europa area, located in Malabo, the capital of Equatorial Guinea. At Kogo, located South of Bata, the main city on the mainland, the Ministry wants to build a second modular refinery, with a 10,000 to 20,000 bpd capacity and, at the end of March, it shortlisted investors for this second project. Other planned projects include the construction of state-owned and managed storage tanks for refined products, a methanol-to-gasoline unit to meet domestic consumption, with the possibility of exporting to neighboring countries in the future, and an ammonia plant, among others.

Regulatory Framework

The 1981 Hydrocarbons Law, which was amended in 2000, did not cover downstream activities, but the Hydrocarbons Law adopted in 2006 dedicated a chapter to the refining, storage, marketing and

Each license granted shall set forth its duration, which cannot exceed 25 years, a term that can be renewed one or more times up to a maximum period of 10 years. Assignments or transfers of any license, right or obligations under a license are subject to the prior written authorization of the Ministry of Hydrocarbons.

In addition to the license, anyone wishing to build or install a refinery will also have to seek the Ministry's approval for its location and design. The Ministry has not established technical standards applicable to the design of refineries, but the final detailed design must be submitted for review and approval by the Ministry, which may propose any required amendments or modifications.

Licensees with the right to store refined products can be required by the Ministry to maintain in storage a minimum level of a specific product, either in their license or through the service of a subsequent notice. Also, in the event of a national emergency, licensees may see all or part of their stored products requisitioned by means of a Presidential Decree, being paid for the requisitioned products in CFA Francs at the price prevailing in Equatorial Guinea at the date of the requisition.

transportation of hydrocarbons. Article 41 of the 2006 Law allows activities related to the distillation, purification and transformation of hydrocarbons, performed for the purposes of adding value and the commercialization of the products obtained, to be performed by the State or other entities either jointly or individually. However, projects for the installation and operation of refineries must be aligned with a national plan and linked with specific projects approved in advance by the Ministry responsible for the petroleum sector, and any companies wishing to perform refining and marketing activities must obtain a license from the Ministry. On the other hand, the right to store, transport and otherwise distribute refined products in the country is reserved for the State and any activities related to the storage, transportation and other distribution of hydrocarbons are also subject to licensing. The price of products for sale in the domestic market is established by the government, considering the price of the crude oil from which the products originate, their refining, storage and transportation costs, the depreciation of investments as well as the profit margins in force for each activity.

The procedure and requirements for the award of licenses for the performance of refining and related marketing activities that are not covered by a production sharing contract or equivalent agreement for the performance of hydrocarbons exploration and production were regulated in 2013 with the enactment of the Petroleum Regulations. Licenses are requested in writing to the Ministry of Mines and Hydrocarbons by applicants that must demonstrate having suitable technical and financial capability, as well as appropriate experience in the petroleum industry to perform the relevant activities. The information to be included in applications should cover the premises and facilities, the applicable technology, the destination of products, the economic resources to be used and, where appropriate, any benefits for the country. Applications must also indicate how applicants plan to source feed stocks and other products, and the Ministry, either before or after the grant of the license, may require that they are obtained from a specified source within Equatorial Guinea.

The 2013 Petroleum Regulations expressly allow the Ministry to set forth and charge fees payable by licensees, with late payment or non-payment allowing the Ministry to withdraw the license, and to impose tariffs on any product manufactured in, imported into or exported from Equatorial Guinea, even though the 2006 Hydrocarbons Law is silent on these matters. Unfortunately, the Regulations contain no guidelines on how these charges will be fixed or changed, leading to some uncertainty for potential operators.

What the Future Holds

Recently, the Minister of Hydrocarbons announced that his Ministry has been working on the Petroleum Regulations to adapt them to these challenging times, which has led to the expectation that in the near future some of the above rules may be clarified or complemented. However, there has been no mention to the modification or replacement of the Hydrocarbons Law, meaning that the principles and limits imposed therein should not change. In any case, the Government's ambitions to diversify the hydrocarbon sector remain solid and, by the end of the year, it should be possible to know if Equatorial Guinea will finally have domestic refined products.

About the Author

Catarina Távora is a Partner and Co-Head of the Energy Group at Miranda & Associados, and coordinator of Miranda Alliance's Equatorial Guinea Jurisdiction Group. She has more than 20 years of experience advising oil & gas companies in setting up and carrying out their operations in Africa, including in Equatorial Guinea. Catarina may be contacted at Catarina.Tavora@mirandalawfirm.com.

South Africa to Create National Petroleum Company, Merge Existing Entities

South Africa held a virtual Cabinet Meeting where President Cyril Ramaphosa's plan to repurpose and rationalize a number of state-owned enterprises to support growth and development was discussed. Under this plan, the ongoing work to rationalize all petroleum (oil and gas) subsidiaries of the state-owned diversified energy company, Central Energy Fund, will be implemented.

The rationalization will result in three subsidiaries (PetroSA, Strategic Fuel Fund and iGas) merged into one single National Petroleum Company. As a result, the Cabinet approved the proposed appointment of a professional restructuring company that specializes in mergers to investigate the most viable model of this single National Petroleum Company.

Eni Launches New Business Structure to be a Leader in the Energy Transition

Eni's Board of Directors, chaired by Lucia Calvosa, has approved a new business structure for the company which sets the evolution of the business over the next 30 years. The key and unique element of this strategy is the combination of growth objectives with financial value creation as well as environmental sustainability, which will lead to a significant reduction in full life-cycle carbon emissions.

The new Eni will have two business groups – Natural Resources and Energy Evolution. Alessandro Puliti will lead Natural Resources and Massimo Mondazzi will lead Energy Evolution. Both were proposed to the Board by the CEO, in agreement with the Chairwoman.

Natural Resources will continue to build up the value of Eni's oil & gas upstream portfolio, with the objective of reducing its carbon footprint by scaling up energy efficiency and expanding production in the natural gas business, and its position in the wholesale market. Furthermore, it will focus its actions on the development of carbon capture and compensation projects.

The business group will incorporate the company's oil & gas exploration, development and production activities, natural gas wholesale via pipeline and LNG. In addition, it will include forestry conservation (REDD+) and carbon storage projects, and sustainability which will continue to integrate across all Eni's activities. The company Eni Rewind (environmental activities), will also be consolidated in this business Group.

Energy Evolution will focus on the evolution of the businesses of power generation, transformation and marketing of products from fossil to bio, blue and green. In particular, it will focus on growing power generation from renewable energy and biomethane, it will coordinate the bio and circular evolution of the company's refining system and chemical business, and it will further develop Eni's retail portfolio, providing increasingly more decarbonized products for mobility, household consumption and small enterprises.

BP Agrees to Sell Petrochemicals Business to INEOS for $5 Billion

BP announced that it has agreed to sell its global petrochemicals business to INEOS for a total consideration of $5 billion, subject to customary adjustments. The agreed sale, the next strategic step in reinventing BP, will further strengthen BP's balance sheet and delivers its target for agreed divestments a year earlier than originally scheduled.

Under the terms of the agreement, INEOS will pay bp a deposit of $400 million and will pay a further $3.6 billion on completion. An additional $1 billion will be deferred and paid in three separate instalments of $100 million in March, April and May 2021 with the remaining $700 million payable by the end of June 2021. Subject to regulatory and other approvals, the transaction is expected to complete by the end of 2020.

Nigeria's DPR Admonishes Oil Companies on COVID-19 Concerns

Nigeria's Department of Petroleum Resources (DPR) has expressed concern over non-compliance to established protocols aimed at containing the COVID-19 pandemic by some oil and gas companies. DPR distributed its warnings via a circular to oil and companies.

The circular commended efforts in implementing stringent measures to contain the spread of COVID-19, but said, "in spite of these efforts, the industry has sadly recorded COVID-19 cases in some offshore and remote locations, many of which are linked to non-adherence to established protocols."

DPR charged that some personnel of government authorities did not subject themselves to the controlled isolation period which forms part of the protocol for the management of COVID-19 by operators prior to embarking to these locations. "Consequently, and pursuant to Regulation 45 of the Petroleum (Drilling & Production) Regulations, 1969, no personnel (including government authorities) shall be permitted to embark to offshore and remote locations in the oil and gas industry without being fully subjected to established protocols. Furthermore, all operators are to ensure that evidence of compliance with the protocols by personnel travelling to offshore and remote locations are duly documented." DPR's statement went on to say that no personnel would be granted a waiver of any sort.

Zenith Energy Delists from TSX

Zenith Energy announced that the TSX Venture Exchange (TSX-V) confirmed that effective at the close of business May 29, 2020, the common shares of the company would be delisted from the TSX-V at Zenith's request.

As announced on April 22 following the company's dual listing on the Main Market for listed securities of the London Stock Exchange (LSE) in January 2017 and the admission of its entire share capital to the Merkur Market of the Oslo Stock Exchange in November 2018, the company has seen its investor base move increasingly towards the UK and Norway, with limited investor support from the Canadian market

Given the aforementioned, and in light of the impact of the COVID-19 pandemic and low oil price environment, the company has been reviewing its corporate structure to maximize cost control and, following this review, has elected to delist from the TSX-V. The benefits of delisting are expected to result in materially lower administrative costs, greater operational efficiency and management time savings.

Earlier in May, Zenith closed a deal with Anglo African Oil & Gas plc (AAOG) to acquire a 100 percent interest in Anglo's fully owned subsidiary in the Republic of the Congo, Anglo African Oil & Gas Congo S.A.U (AAOG Congo); the sale gave the company the Tilapia asset. In April, Zenith acquired a working interest in, inter alia, the North Kairouan permit and the Sidi El Kilani Concession, which contains the Sidi El Kilani oilfield (SLK).

ARGAS to Expand Geo Services Internationally

KSA-founded Arabian Geophysical & Surveying Company (ARGAS), the largest seismic acquisition company in MENA, is to expand its business internationally, further building on a strong track record which has made it a leading regional success story in the oil and gas field services industry.

Industrialization and Energy Services Company (TAQA) and Paris-based CGG jointly announced the signing of a new agreement that will allow ARGAS to expand its offering in integrated marine and land seismic solutions to Oil & Gas industry customers all over the world, giving it the ability to access potential multi-billion dollar markets.

The agreement waives all territorial, technical, commercial exclusivities and any other restrictions previously in place, as well as all other contractual restrictions on CGG or any of its current or previous affiliates.

Reflecting ARGAS's new global ambitions, shareholders also agreed to use this corporate milestone to launch a new ARGAS logo which they believe reflects the company's dynamism and agility.

Equinor Divests its Stakes in Lundin Energy

Equinor ASA has divested its financial shareholding in Lundin Energy AB, comprising around 14 million shares and corresponding to its 4.88% percent of the shares and votes, at a total sale price of approximately SEK 3.3 billion. After the divestment, Equinor ASA will no longer hold any shares in Lundin Energy AB.

"This transaction follows our divestment of a 16 percent shareholding in Lundin in July 2019 and concludes what has been a successful investment for Equinor. We have created significant value and increased our direct exposure in the Johan Sverdrup field. Although we are now no longer a shareholder in Lundin, we continue to consider the company a strong partner on the Norwegian Continental Shelf," said Lars Christian Bacher, CFO of Equinor ASA.

Shell and Eni see Nigerian Lawsuit Dismissed in UK

A UK court has ruled that England has no jurisdiction to try a case against Royal Dutch Shell and Eni brought to bear by the Nigerian government as an Italian court is essentially hearing the same case.

Nigeria alleges the two supermajor companies knew about bribes in a Nigerian oil deal trying to secure rights to OPL 245 nearly 10 years ago and initiated a $1 billion lawsuit.

In a statement, Shell commented: "We maintain that the 2011 settlement of long-standing legal disputes related to OPL 245 was a fully legal transaction with Eni and the Federal Government of Nigeria, represented by the most senior officials of the relevant ministries," Shell said in a statement.

The criminal proceedings in Italy are not affected by the ruling of the London judge, where Nigeria has a separate legal claim.

Global Petroleum to Delist from ASX

Australian junior independent Global Petroleum Limited, focused on oil and gas, upstream exploration in Africa and the Mediterranean, formally applied to ASX requesting the removal of the company from the official list of ASX pursuant to ASX Listing Rule 17.11 and ASX has accepted its application and resolved to remove the company from the Official List subject to the satisfaction of certain conditions.

Global's securities are currently listed/quoted on two securities exchanges – the Official List and AIM. Following due consideration/and in order to streamline the company's listing and compliance costs, the Directors of Global resolved that the continued listing of the company's securities on the Official List was no longer in the best interests of the company and its shareholders.

Saipem Signs 2-Year Global Frame Agreement with Equinor for Engineering Services

Saipme's new Frame Agreement encompasses feasibility and conceptual studies, FEED, detailed engineering and related follow-on and support for R&D activities, as well as assistance to Equinor for its upcoming projects, including new energy-related projects in the onshore, offshore and floating wind sectors.

The scope of the Frame Agreement extends, but is not limited to offshore trunklines including landfalls and flowlines, onshore pipelines, components, subsea structures, field layout and routing design for products such as umbilicals, cables, static flexibles and power cables.

Saipem and Equinor have been collaborating for over a decade backed by frame agreements, namely those regarding transportation and installation (T&I) as well as Subsea Construction works. Furthermore, in October 2019 Saipem signed a subsea service contract with Equinor, which entails the use of Saipem's Underwater Intervention Drone (UID) Hydrone-R and the all-electric Work Class ROV Hydrone-W in the Njord Field development. Last but not least, recently Saipem and Equinor have signed a cooperation agreement to develop an innovative technological solution for a solar panel floating park for near coastal installations.

Total Nixes Ghana Acquisition Deal with OXY

In August 2019, Total and Occidental Petroleum entered into a Purchase and Sale Agreement (PSA) in order for Total to acquire Anadarko's assets in Africa. Under this agreement, Total and Occidental have since completed the sale and purchase of the Mozambique and South Africa assets.

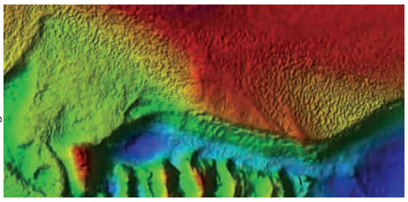
The PSA provided that the sale of the Ghana assets was conditional upon the completion of the Algeria asset sale. Occidental has informed Total that, as part of an understanding with the Algerian authorities on the transfer of Anadarko's interests to Occidental, Occidental would not be in a position to sell its interests in Algeria.

Given the extraordinary market environment and the lack of visibility that the Group faces, and in light of the non-operated nature of the interests of Anadarko in Ghana, Total has decided not to pursue the completion of the purchase of the Ghana assets and, as a consequence, to preserve the Group's financial flexibility.

"This decision not to pursue the completion of the purchase of the Ghana assets consolidates the Group's efforts in the control of its net investments this year and provides financial flexibility to face the uncertainties and opportunities linked to the current environment," said Patrick Pouyanné, Total Chairman and CEO.

Fugro Completes Middle East's First Uncrewed Geophysical Route Survey

In response to increasing demand for remote offshore services, Fugro has completed the Middle East's first fully autonomous geophysical shallow-water route survey. Controlled from their remote operations center in Abu Dhabi, an uncrewed surface vessel (USV) captured a full range of geophysical data across a survey area some 40 km out from the coast of Abu Dhabi to support a client's critical project entirely remotely.



Source: Fugro

Bathymetry showing a possible erosional surface with a hard rugged seabed

The results of the fully autonomous geophysical shallow-water route survey comprised conductivity, temperature, depth and salinity (CTDS) profiles, bathymetry data, seabed imaging, sub-bottom profiles, and ferrous object detection such as pipes, etc. The efficiency gains and material reductions from using Fugro's remote and autonomous solution, rather than a conventionally mobilized and crewed survey, included reduced HSSE exposure and significant client cost savings. Fugro's USVs also have a much lower carbon footprint than a regular survey vessels.

"Witnessing this ambitious concept transformed into reality is a landmark moment in the Middle East that has resulted in the successful delivery of a critical seabed characterization report based solely on our autonomously acquired Geo-data,' said Gerard Ferreira, Fugro's Service Line Director for Marine Geophysics in the Middle East.

LOC Norway Awarded New Scope of Work on Johan Sverdrup Field by Equinor

LOC Stavanger has been awarded a new scope of work with Equinor, the Norwegian multinational energy company. LOC will provide Marine Warranty Surveyor (MWS) services for the SURF (subsea umbilical, risers and flowlines) development on the Johan Sverdrup oil field in the North Sea. The scope of work is for part of the Phase 2 development of the field. The Group has been providing MWS services on the development of the Johan Sverdrup field since 2015.

The Group's scope of work for this contract under existing frame agreement, will include a review of the project, procedural and technical design documentation relating to marine operations, as well as on-site attendances to approve operations for project critical cargo, pipelines, cables, and umbilical. In addition, the SURF development includes substantial subsea infrastructure of approx. 100 kms of rigid pipelines.

Kevin Sirski, Managing Director/Naval Architect at LOC Norway, commented: "LOC Stavanger is very pleased to be continuing its work on the Johan Sverdrup Field with Equinor, a leading global energy company. We have been a long-term provider of MWS services for Equinor on this field and we are delighted that we will continue working on this exciting development through to the completion of Phase 2 in 2022. We see this contract award as a testament to the high level of service that we have provided on the project since being engaged back in 2015. It also demonstrates our leading position as an MWS provider in the North Sea."

Aker Solutions Wins Umbilicals Contract for the King's Quay in US GoM

Aker Solutions has been awarded a contract from Subsea 7 to deliver umbilicals for Murphy Oil's King's Quay development in the U.S. Gulf of Mexico. The work scope includes 22 kms (14 miles) of dynamic steel-tube umbilicals and distribution equipment to connect the King's Quay floating production system (FPS) to the Samurai, Khaleesi and Mormont deepwater developments.

Source: Aker Solutions

Kings Quay

The King's Quay semisubmersible FPS will be located around 280 kms (175 miles) south of New Orleans in the Green Canyon area of the U.S. Gulf of Mexico.

The engineering, design and manufacturing of the umbilicals and distribution equipment will take place at Aker Solutions' facility in Mobile, Alabama in the United States. The work starts immediately and the delivery is planned for the fourth quarter of 2021.

Global Oilfield Services Demand Set for a 25% Decline in 2020

Global demand for oilfield services (OFS), measured in the total value of exploration and production (E&P) company purchases, is set for a massive 25% yearly drop in 2020 as a result of the Covid-19-caused downturn, a Rystad Energy analysis shows. Spending is expected at $481 billion this year and takes the first step on the road to recovery in 2021, when it is forecast to tick up by just about 2%.

The recovery will accelerate further in 2022 and 2023, with OFS spending by E&Ps reaching some $552 billion and $620 billion, respectively. Despite the boost, purchases will not return to the pre-Covid-19 levels of $639 billion achieved in 2019.The comeback will not be visible across all OFS segments from 2021, however. Well services and the pressure pumping market will be the first to see a boost, while other markets will need to get further depressed before recovering.

Dividing OFS into six segments – maintenance and operations, well services and commodities, drilling contractors, subsea, EPCI and seismic – only the first three will manage to rise in 2021, while the latter three will have to brace for another year of falling revenues before they can expect improvements.

In absolute numbers, the maintenance and operations segment is poised for consecutive yearly rises in the next three years after slumping to $167 billion this year from $202 billion in 2019. Ryatad expects spending in this segment to recover to $175 billion in 2021, $193 billion in 2022 and $205 billion in 2023.

The well services and commodities segment is set for a similar recovery, but only after slumping to $152 billion in 2020 from $231 billion last year – the biggest decline among segments in absolute numbers. Here Rystand sees spending at $163 billion in 2021, $189 billion in 2022 and $210 billion in 2023. The same pattern also applies to drilling contractors, with the segment falling to $46 billion in 2020 from $62 billion last year, and then rising to $47 billion in 2021, $54 billion in 2022 and $57 billion in 2023.

The subsea segment, on the other hand, will fall from $25 billion in 2019 to $24 billion in 2020 and decline further to $22 billion in 2021 – before starting to rebound to $24 billion in 2022 and to $29 billion in 2023. Similarly, EPCI is set to fall to $81 billion in 2020 from $105 billion last year. It will slide further to $74 billion in 2021, before rising back to $81 billion in 2022 and growing to $106 billion a year later. Lastly, seismic is poised to decline to $12 billion in 2020 from $15 billion in 2019. It will first keep dropping to $10 billion in 2021, before rebounding to $11 billion in 2022 and to $13 billion a year later.

Source: Rystad Energy

Neptune Energy Completes Safe Removal of Three Dutch Platforms

Neptune Energy has announced the safe removal of the L10-C, L10-D and L10-G platforms from the Dutch sector of the North Sea. The platforms have been providing offshore natural gas to the Netherlands for around 40 years and ceased production in 2016.

Source: Neptune Energy

More than 3,400 tonnes of steel – around half the weight of the Eiffel Tower – were removed as part of the decommissioning program that was carried out by Neptune Energy and Boskalis, using the *Bokalift1* vessel. The steelwork was removed from the seabed and placed on the vessel in a series of carefully executed lifting operations. The removal of rock will return the seabed to a clean state and will mark the completion of this extensive operation.

Lex de Groot, Managing Director of Neptune Energy in the Netherlands said: “These three platforms had come to the end of their economic lives and, as of the 1970s early 1980s, they have been producing Dutch offshore gas to heat our homes and fuel the economy.It’s our responsibility to decommission these platforms, take everything with us and leave the seabed in a clean state. Our teams did a tremendous job, together with our supplier, Boskalis, especially given these turbulent times. The work was completed in a safe and secure way, both for the crew and for the environment. All three platforms were brought onshore and the associated materials will be recycled or reused as much as possible.”

The L10 Area continues to operate with gas being produced from numerous platforms centered around the Neptune-operated L10-A platform.

LUKOIL Starts Drilling at North Caspian Prospects

LUKOIL has started exploration and production drilling at prospects and fields in the northern areas of the Caspian Sea. LUKOIL started drilling of an exploration well at the Shirotno-Rakushechnaya prospect structure, located to the north of the V.I. Grayfer field. As the sea at the point of well is 4.5 meters deep, the well with the target depth of 1,650 meters was drilled from jack-up floating rig *Astra*, designed for shallow waters. The same structural tectonic zone features Yury Korchagin, Valery Grayfer and Vladimir Filanovsky fields, discovered in 2000, 2001 and 2005 respectively.

The company has also begun to study Khazri and Titonskaya features of a new block in the south of the same sea area within the East Sulaksky bank, and is currently drilling the second well to the target depth of 5,200 meters. The sea is 45 meters deep at the point of well. Drilled at Khazri feature from jack-up floating rig *Neptune*, the well will deliver data on oil and gas content and explore for oil and gas deposits in terrigenous and carbonate sediments of the Jurassic-Cretaceous period.

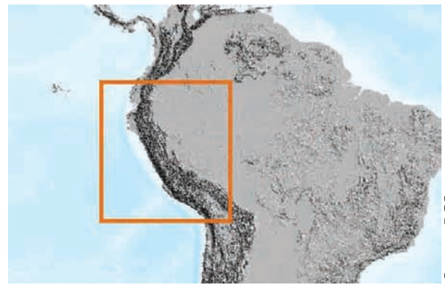
As part of its drilling campaign for Caspian fields, LUKOIL is constructing the sixth well at riser block platform at the Yury Korchagin field. The length of the borehole of this horizontally directed producing well with MultiNode intelligent completion system, used for the first time at Caspian projects is 5,164.79 meters. The drilling is performed from jack-up floating rig *Mercury*. The well’s daily target production rate of 348 metric tons will allow to stabilize the field’s production.

Northern areas of the Caspian Sea has been the domain for LUKOIL’s geological exploration since 1995. The company started deep drilling in 1999. Twenty-six prospecting and appraisal wells were drilled at the company’s license areas. Either independently or as a party to joint ventures, LUKOIL discovered 10 fields in the Caspian Sea with C1+C2 ultimate recoverable reserves of hydrocarbons amounting to 7 billion barrels of oil equivalent. Six of these 10 fields – V. Filanovsky, Y. Korchagin, Sarmatskoe, Khvalynskoye, and V. I. Grayfer are major multi-pay fields.

PGS Peru MegaSurvey - First Seismic Data Now Available

First data is now available on PGS’ Peru MegaSurvey. This large-scale merged and matched seismic dataset, including 2D and 3D data, provides E&P companies interested in South America with an excellent opportunity to evaluate prospectivity on a regional basis.

Targeting the extensive coastline of Peru, this PGS MegaSurvey comprises 21,000 sq km of 3D seismic matched and merged together with approx. 23,000 km of 2D data. A time-processed dataset is now available. Depth processing is ongoing using a seismic-horizon-constrained velocity model through five different basins, from the



Source: PGS

prolific Talara Basin in the north to the frontier basins in the extreme south and depth results are expected Q1 2021. Well control data will be incorporated using rock AVO for forward modeling and QI modeling

MegaSurveys are very large, merged, post-stack datasets consisting of multiple surveys that have been rebinned to a common grid and then matched to produce a phase-balanced and uniformly scaled contiguous regional volume. Their regional nature permits fuller exploration of tectonic and basin developments, leading to a greater understanding of existing and potential petroleum systems.

The PGS Peru MegaSurvey covers both existing discoveries and licensing opportunities in open blocks, revealing analogs of existing interests. It can be used to pick prospects or to evaluate the successes and failures so far across the entire region. Field-scale geological understanding can now be placed in a basin-wide context.

Warrego Confirms Rig Selection for West Erregulla Appraisal Wells

Warrego Energy has confirmed that the EP469 joint venture has secured the Ensign 970 drilling rig for the upcoming exploration/appraisal campaign at West Erregulla, onshore Perth Basin, Western Australia.

The exploration/appraisal plan provides for the drilling of West Erregulla-3, located in the northern area of the West Erregulla gas field, in the second half of 2020 (subject to permitting), followed by the West Erregulla-4 and potentially West Erregulla-5 in 2021.

RISC Advisory, which recently completed the independent third-party certification of the West Erregulla resource for Warrego, agrees with the company’s estimated geological probability of success for the West Erregulla-3 well of 65%.

Warrego is supportive of the Operator’s view that material cost savings can be generated by incorporating West Erregulla-3 and 4, and potentially 5, into the current exploration/appraisal plan.

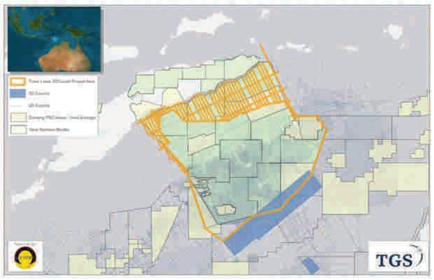
TGS Commences 2Dcubed seismic Project Offshore Timor-Leste

TGS has announced that in collaboration with the ANPM, it has commenced a 2Dcubed seismic data project covering offshore Timor-Leste, in support of the country's ongoing license round. This project is fully supported by industry funding.

The project combines all available open file and TGS multi-client data across an area of over 50,000 sq kms and incorporating over 2,500 lines and existing 3D's within the planned area. The 2D data, from over 45 legacy vintages, covers the entire offshore area south of Timor-Leste where the 11 offshore blocks in the second license round are located.

The final multi-client 2Dcubed data will be unrivalled in its comprehensive coverage, allowing customers to develop structural and geological models in their pre-study evaluation process using a single conformable 3D volume, imparting confidence in their license round decision-making processes and supporting further exploration.

2Dcubed is a unique technology from TGS for generating a 3D seismic migration volume from a set of 2D and 3D seismic lines. It uses an advanced structurally conformable interpolation algorithm to maximize the potential of existing 2D multi-vintage and 3D data. The volume can be used for regional interpretation and optimization of 2D survey designs and positioning. The very high density of the available 2D legacy data offshore Timor-Leste lends itself to maximizing the effectiveness of 2Dcubed, which also merges local 3D surveys, where available. Similar projects have been undertaken in other Asia Pacific basins in Indonesia and Australia to industry acclaim, as well as offshore Sakhalin, Russia, and throughout the Norwegian and UK North Seas.



Source: TGS

Availability of the first deliverables is expected from July 2020, with final deliverables estimated around September 2020. This will allow E&P companies ample time for data evaluation prior to the closing of the license round, which is anticipated to be during the first half of 2021.