Key countries and opportunities in Africa’s oil and gas industry
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Over the past few years economic performance across Africa has varied. To look at 2016 as an example, growth was highest in East and West Africa and lowest in North and Southern Africa. Many resource dependent countries such as Angola and Nigeria — the latter growing at an average of just 0.97% of GDP between 2013 and 2016 — incurred the lowest growth in the last 20 years.

Politically the continent is beginning to look more positive, but there are still a few uncertainties across the regions. The appointment of Nana Akufo-Addo as president of Ghana, and Adama Burrow as the new president of Gambia — both of whom took office in January 2017 — are promising, highlighting the progress that has been made with regard to the legitimacy and transparency of elections. Nigeria’s President Muhammadu Buhari continues both the fight against corruption, and the insurgency of Boko Haram, which have seen equal progress in the past year. In Kenya, uncertainty hovers over the August 2017 election as the opposition National Super Alliance (NASA) coalition gains traction against incumbent President Uhuru Kenyatta. The inconsistency and pragmatic rule of Jacob Zuma of South Africa and John Magufuli of Tanzania demonstrate that political coercion still remains in some of the stronger economic performers.

**Oil and gas**

Since the collapse of the price of oil in June 2014, transactions within the oil sector have in fact increased across Africa, with upstream deals rising from US$1.6bn in 2015 to US$4.6bn in 2016. This was the result of a number of factors.

On the sellers’ side it was:

- either - IOCs shrinking their portfolios to their core area or speciality
- or - smaller, heavily indebted IOCs carrying out fire sales
- either - the search of exiting production rather than long-term exploration
- or - the better financed IOCs or hedge funds taking advantage of the low prices.
Recently much attention has been focused on the promising north-west, with examples including: Woodside’s US$446m acquisition of ConocoPhillips’ 35% stake in three deep-water blocks in Senegal; BP’s farming into Kosmos Energy’s six offshore blocks in Senegal and Mauritania for US$916m. Cautious optimism about the world economy, political responses to combat low growth, and the recent rise in the price of oil, may lead to improved growth in 2017.

Last year’s investment outlook reflected the oil price, which continued to be the main restriction on increasing exploration. Stakeholders have found it difficult to raise the necessary funds for new projects in Africa due to the very limited market capital for African exploration. The majors and larger independents have been the main drivers of activity, but mid-sized firms are now beginning to become more active as confidence about the oil price stabilising at over US$50 a barrel continues.

The 2017 outlook seems encouraging, with North and West African countries likely to attract the most investment. Recent exploration successes in Egypt, Senegal, and Côte d’Ivoire, and renewed stability and political confidence in established producing provinces in Mauritania, Morocco, Ghana, Gabon, and Equatorial Guinea, has encouraged greater optimism about the year ahead.

In the continent’s largest economy, Nigeria, there continues to be significant opportunities for current and new investors, particularly as the majors divest their onshore and shallow water acreage to concentrate on deep-water. Much of this confidence will be tied to President Buhari’s health and stability, his promised fight against the country’s systemic corruption (which has seen positive breakthroughs), and continuing peace in the Niger Delta. Looking east, several African governments — exemplified by the World Bank-funded project in Kenya, Uganda’s 2020 pipeline, and the reforms and legislation introduced in Somalia — have introduced new initiatives aimed at improving the environment for new capital, whilst reducing the burden on the oil and gas sector, so as to facilitate smoother transactions.

With a shift towards the introduction of investor friendly legislation, economic reform, and infrastructure development, Africa in 2017 will provide a more stable environment for new green-field exploration, and additional investment in existing production assets. In a period of market consolidation, investors should keep a close eye on identifying both the assets and potential indigenous and international partners at the right time. For the rest of this report we will focus on the 8 countries that we believe to be the largest investment opportunities and oil and gas boomers across Africa in the coming years.
Comparatively, Morocco has enjoyed far greater political stability than the rest of North Africa, which has undergone major implications and set-backs since the Arab Spring began in Tunisia, in December 2010. Morocco operates under a constitutional monarchy, with a democratically elected government. In addition to the country's relatively low levels of political and security risk, it has a hugely attractive investment environment and remains vastly under-explored within the oil and gas sector; being regularly referred to as one of the last remaining frontiers in North Africa.

Oil exploration began in 1890 and the first discovery was made in 1923 at the onshore Ain Hamra field in the Rharb Basin. To date, only 338 onshore and offshore exploration wells have been drilled. Several viable petroleum systems, with good hydrocarbon potential, exist in Moroccan sedimentary basins, and this alongside a growing domestic demand for power — which is currently reliant on imported oil and gas — make Morocco a highly attractive investment opportunity.

Since 2000 — when the government amended the Hydrocarbons law to incentivise investors and IOCs into entering the country — Morocco has been an incredibly attractive fiscal environment. The Hydrocarbons Code includes such advantages as:

- a 10-year exemption from the national corporate income tax rate of 30% when IOCs start commercial production
- only 25% state participation within contract terms through Morocco’s Office National des Hydrocarbures et des Mines (ONHYM)
- low onshore and offshore royalties of 10% on oil production and 5% on gas in waters shallower than 200 metres
- well-developed infrastructure across the country, which supports exploration and production, and includes major pipelines located near core cities
Investor overview and outlook

Morocco's expanding oil and gas potential has been reinforced by a number of discoveries in recent years. This has led to an ever increasing number of indigenous and international companies operating in Morocco, with the latter including Cairn Energy, Chariot Oil & Gas, Eni, Kosmos Energy, Gulfsands Petroleum, Sound Energy, and Woodside. As of the end of September 2016, it was reported that 28 oil companies were involved in the country, and with new entrants expected to join the growing market over the coming years.

Some of the most promising discoveries for the country have been made by Sound Energy, at its operations in the north east situated near the Algerian border, proving that Algerian gas fields do extend across the border into Morocco. In August 2016 it tapped into a significant gas discovery at its TE-6 onshore well in the Tendrara Licence, which flowed at a rate of 17.5MMCFD. Sound Energy then completed drilling of the Tendara Licence TE-8 well, in March 2017, and confirmed the existence of a significant gas column. TE-8 is Sound Energy's third successful well, bolstering enthusiasm throughout the investment community, and transforming the company.

In January 2017, the transfer of the Rabat Deep Offshore permits I-VI operatorship to Eni was approved. The Italian oil major acquired a 40% equity interest from Chariot in return for a capped carry on drilling the JP-1 prospect and other geological and administrative costs. The partners now in the license are: Eni (40%), Woodside (25%), Chariot Oil & Gas (10%), and ONHYM (25% carried interest).

Morocco has also attracted regional players. In January 2017 Qatar Petroleum (QP) took a 30% stake in three Chevron (45%) operated deep water blocks — ONHYM holds the remaining 25% — as the licence was extended for a further two years. QP’s interest has stemmed from both sluggish domestic growth, and its special relationship with its fellow monarchy.

For companies looking to expand their exploration activities in Morocco, one issue we believe you should be aware of is the long-running, and continuing, territorial disputes over Western Sahara. IOCs currently operating in those areas annexed by Morocco in the 1970s are vigorously reminded by Polisario that two international courts have determined that Morocco has no basis for its territorial claims.
EGYPT

Egypt is the largest non-OPEC oil producer in Africa and the continent’s second largest gas producer after Algeria. Being one of the region’s oldest upstream sectors — its first exploration in 1860 and commercial production in 1909 — Egypt’s a mature oil and gas producer. In terms of IOC and investor incentive, the country boasts:

- onshore operating costs at less than US$10 a barrel
- well established infrastructure with significant spare production capacity
- a drilling success rate which has remained above 25% in the last 20 years
- attractive fiscal terms

It is therefore no surprise that investors, and a wide variety of IOCs, are continually attracted to Egypt's regular and successful oil and gas exploration licensing rounds.

The government and major IOCs have recently been talking of increasing exploration investment in order to boost both production and reserves. In late 2016, the oil ministry signed three offshore Mediterranean exploration agreements — North El Hammad (US$80m), North El Tabya (US$65m), and North Ras El Esh (US$75m) — with various combinations of BP, Total, and Eni’s local IEOC subsidiary involved. Since 2013, Egypt has entered into 76 new exploration agreements with IOCs that have an overall investment totalling around US$15.3bn.

Over the past decade Egypt has struggled with its domestic demand for power outstripping actual gas production, which resulted in gas exports regularly being curtailed so that it could be diverted into the domestic grid. However, the country’s financial problems since the Arab Spring have meant that the debts — or receivables as they are known in Egypt — owed by the government to the IOCs for gas sales have grown alarmingly. This, in turn, has meant that some IOCs have refused to continue with any further investment until the outstanding receivables are paid.
The government has now stabilised the economy and is repaying its debts to the IOCs under an agreed schedule. It is therefore expected that, in the not too distant future,

Egypt will once again be self-sufficient in gas, and is hoping to resume exports in the next few years.

Recent discoveries

Egypt provides investors with an array of oil and gas opportunities, which explains the extent of IOCs — whether they are single asset companies or super-majors — working throughout the country. Oil production is principally focused on the Gulf of Suez and Western Desert, whilst offshore discoveries in the Nile Delta have established Egypt as one of the region’s key gas producing areas.

A number of recent discoveries have added to the positive outlook for the oil sector. In August 2016, Shell announced that it had tapped a new gas field, with reserves of 500bcf, at its Alam El Shawish concession, making it one of the largest, most recent discoveries in the Western Desert. It will initially produce 20 Mcf/d; with a plan to rise to 60 Mcf/d once drilling is completed. Shell has stated that it will increase its rigs from two to four and will drill nine discovery wells throughout 2017, but could be increased depending on seismic results.

The super-giant Zohr gas field was discovered in August 2015 by Eni, who described it as a ‘game changer’. The deep-water field — located 120 kms off the Mediterranean coast in the Shorouk concession, and due to start production at the end of 2017 — is estimated to contain reserves of 30 Tcf of gas, making it the largest field in the Mediterranean. With Egypt fearing that it had originally missed out on the East Med gas bonanza — and that it would have to start importing gas from Israel or Cyprus — this find means that the country should now be able to meet its rising domestic demand for gas and hopefully resume exports by 2020. The discovery has also led to growing optimism both in the domestic oil sector, and amongst current and prospective investors.
CÔTE D’IVOIRE

The upstream sector in Côte d’Ivoire could be described as modest, growing and full of potential, with proven oil reserves of 100m barrels and gas reserves of 1.0 Tcf. Although the country is better known for its downstream sector the development of its upstream could enable Côte d’Ivoire to become a medium-sized offshore oil producer. In July 2016, state-owned Petroci reported that the country plans to nearly double oil production by 2020, to 200,000 b/d, seeking to attract IOCs to its offshore oil sector.

Offshore oil was first discovered in 1977 and production started three years later. Approximately 86% of the country’s oil and gas wells are situated in shallow marine areas, 7% in deep water, and the remaining 7% onshore. Espoir became the country’s first product field in 1980 and was operated by Canadian Natural Resources (CNR). After Ghana’s discovery of two large offshore gas fields near the maritime border — Jubilee and the Tweneboa, Enyenra, Ntomme (TEN) field — there was increased interest from the IOCs on Côte d’Ivoire’s adjacent blocks. Abidjan claimed that the TEN field was partially in its waters and took the case to the International Tribunal for the Law of the Sea, but lost the case.

- 2001: Baobab, the first deep offshore oil field discovered
- 2012: Anadarko announce a light-oil discovery at the Paon-5A prospect in Block CI-103, where it encountered more than 100 net feet of oil pay
- 2014: Total announce initial discovery of oil from the deep offshore Saphir-1XB well, western Côte d’Ivoire’s CI-514 block
- 2017: Eni obtains 90% stake in two new exploration blocks — CI-101 and CI-205 in water depths of 2000-2700 metres, eastern Tano Basin, marking it the company’s upstream return to the country
Following a few discoveries and investments that have happened in quite quick succession, some industry observers claim that the country is on the cusp of deeper-water commercial success.

**Investment climate**

Despite the optimistic outlook, IOCs are still wary of tying up funds in expensive deep-water frontier exploration in a country that has only recently come out of a long period of political instability. From the armed rebellion in 2002 through to the end of the civil war in April 2011, Côte d’Ivoire was unstable and led to a slowdown in oil sector investment. The knock on effect of this has been an ageing infrastructure and long-term decline in production, but investment is increasing steadily and the political and security outlook is beginning to change for the better. The presidential election in October 2015 led to a smooth re-election of the incumbent President Alassane Ouattara for a second five-year term, allowing the country to finally turn the page on the violence that caused so much damage in the 2010 election.

Another positive note is that the country’s Petroleum Code caters for several types of Petroleum Contracts and offers incentives, for example:

- concession agreements attached to exploration permits or exploitation concessions
- production sharing agreements (PSAs)
- other agreements such as risk services contracts (Services Contracts)
- additional investment credits are offered for exploration in deep and ultra-deep waters
- many blocks have been delineated and are now open for negotiation
SENEGAL

The country’s oil and gas industry was kick-started after Cairn Energy and Kosmos Energy made a number of significant offshore oil and gas discoveries in early 2016, and the future looks bright. Their discoveries have attracted a number of other IOCs to the country, making north-west Africa the continent’s most exciting exploration hotspot over the past year.

Senegal has maintained relative political stability over the past decade, despite ongoing instability in its neighbouring countries, and the wider Islamist militancy which threatens the region. In fact, since achieving its independence from France in 1960, the country’s only instability was a long-running, low-level separatist conflict in the Casamance region — adjacent to Guinea Bissau — up until a 2014 ceasefire.

Cairn Energy’s November 2014 discovery of the SNE Deepwater Oil Field still remains the world’s largest oil discovery since 2014. It is located in the Rufisque, Sangomar and Sangomar Deep Blocks, and covers an area of 7,490km² within the Senegalese portion of the Mauritania-Senegal-Guinea Bissau Basin. The joint venture (JV) — initially comprised of Cairn (40%), ConocoPhillips (35%), FAR (15%) and the state-owned Petrosen (10%) — drilled the FAN-1 and SNE-1 wells, which were Senegal’s first offshore wells in over twenty year and its first ever deep-water wells. When ConocoPhillips decided to rebalance its portfolio Woodside immediately bought a 35% stake for US$440m; although FAR is currently claiming pre-emption rights.

In March 2017, Australia’s FAR announced intentions to expand its acreage from Senegal into Gambia, to blocks A2 and A5, which the company described as ‘highly prospective’. It is thought that the blocks — which are adjacent to Senegal’s offshore FAN and SNE fields — have the potential to contain prospective resources in excess of one billion barrels. At first this move seemed rather ambitious, until it was revealed that China’s cash-rich giant CNOOC had signed a two year Area of Mutual Interest (AMI) agreement with FAR to work together offshore Senegal and Gambia.
Meanwhile Cairn, and its joint-venture partners, announced in March 2017 that the VR-1 well in the SNE field had discovered more oil than expected. The drilling programme in Senegal is continuing to provide positive evidence of the scale and extent of the SNE field. Yet more recently still, Cairn and its JV partners announced their sixth successful appraisal well, at offshore SNE-4, in mid-May 2017. This latest success further confirms the extent of promise that the Sangomar block, in the SNE field, has for Senegal.

In May 2016, Kosmos Energy’s Teranga-1 exploration well discovered what is believed to be the largest offshore gas field in north-west Africa, situated near Senegal’s maritime border with Mauritania. Well test results confirmed that a prolific inboard gas fairway extends approximately 200km² from the Marsouin-1 well in Mauritania — through the Greater Tortue area on the maritime boundary — to the Teranga-1 well in Senegal. This was sufficiently promising in December 2016 that BP announced it was investing US$1bn in a 33.5% stake of Kosmos Energy’s Senegal exploration blocks. The latter announced in January 2017 that the next phase of its multi-well offshore exploration drilling programme in Mauritania and Senegal will be targeting the Yakaar oil prospect about 40km² west of the Teranga discovery.

**Investment opportunities**

Among all the operational contracts in Senegal, there are still players actively looking for new partners to join their exploration programmes. For example, London-based Simco Petroleum Management are currently marketing Oranto Petroleum’s Cayar offshore and St Louis offshore blocks in northern Senegal. These underexplored blocks are updip from Kosmos Energy’s successful Teranga-1 well and adjacent to major discoveries across the border in Mauritania. Teranga, while being initially announced as a gas discovery, is reported to have also discovered liquid hydrocarbons, which bodes well for the continuing search for oil north of the Dakar Peninsular.

Senegal has a favourable business environment for investors in upstream oil and gas, as demonstrated by the World Bank’s ‘Doing Business 2016’, which ranked the country among the world’s top ten business environment improvers for the second consecutive year. Senegal’s General Tax Code and Petroleum Code lists royalties at between 2%-8% for oil production and 2%-6% for gas, and entities operating in the oil and gas sector are subject to a corporate income tax rate of 30%.

It is, however, worth mentioning that Senegal is still yet to produce its first barrel of oil. Petrosen’s general manager, Mamadou Faye, said that he believed the earliest that Senegal would be able to start producing commercial oil would be between 2019-2020.
SOMALIA

Exploration began in 1948 for Somalia, when Sinclair Oil, Conoco, and Agip discovered eight sedimentary basins, but at present the country doesn't produce hydrocarbons. Prior to the 1991 overthrow of President Siad Barre's regime, many IOCs had acreage in Somalia and more than 60 wells were drilled.

However, since 1991 there has been no credible form of unified government, and the country has split into different self-governing areas including the northern breakaway Somaliland — former British Somaliland — from which Puntland broke away. It is ironic that, despite being one of the world’s most homogeneous countries, the rivalries between different local clans and sub-clans have largely destroyed Somalia.

Despite the formation of the internationally recognised Federal Government of Somalia (FGS) on 1 August 2012, its Mogadishu based officials (in the south) have been unable to visit, let alone govern, the federations.

Oil prospects tied to the new government

As of 8 February 2017, Somalia has a new government under the newly elected President Mohamed Abdullahi Mohamed. In defeating the incumbent, Hassan Sheikh Mohamud, the election is good news for what, according to the Fragile States Index, has perceived as the world's most failed state.

The election results have provided a burst of optimism, but the government is still faced with a considerable task. The reason being is that security is still the largest issue that Somalia faces, even despite the presence of the African Union Mission in Somalia (AMISOM) peacekeeping mission. In light of the security issues, Somalia’s state revenues — largely
derived from the airport and port — are small, its police are understaffed, and the army lacks substance and credibility.

Oil rights have become a potential source of revenue but this has in turn politicised the oil industry. The risk is that oil exploration will feed the already entrenched rivalry between the central power in Mogadishu and the other regions. Many of the latter are either controlled by the Islamist terrorists from Al-Shabaab, or local warlords. Politicians have made and issued informal agreements with different IOCs over rights to overlapping oil blocks, and their legality can only be determined when the political map of the country has been settled.

Oil presence and looking forward

Offshore geology can be divided into Obbia Basin in the north, the central Coriole Basin, and the Juba-Lamu Basin to the south. The datasets have been processed and the Federal Government was expected to announce details of the licensing round in March 2017. Somalia is having to play catch-up with its regional neighbours who are also trying to attract investment and have the advantage of relative political stability and greater experience.

UK-registered Soma Oil and Gas in 2014, which obtained more than 20,500 km² of seismic data. Spectrum then conducted its 2015 Multi-Client survey in 2015, extending over 20,560 km². In addition to the seismic imaging, which gives some strong indications of oil and gas potential, these surveys took place without any security incident, illustrating how the political and security environment is improving, as well as having an effective offshore operating environment.

Landlocked Ethiopia — which has long been Somalia’s traditional enemy and supports Somaliland’s succession — has concentrated its exploration activities in the disputed Ogaden region. Meanwhile, as noted above, the maritime border dispute with Kenya rumbles on. The International Court of Justice (ICJ) has ruled that the maritime dispute should proceed to a full trial, and has scheduled 18 December 2017 as the deadline for Kenya’s case.

Somalia has made some positive moves towards exploration in recent years with the FGS authorising two recent 2D exploration seismic surveys. The first was an initial offshore 2D seismic acquisition programme by the FGS in 2014, which obtained more than 20,500 km² of seismic data. Spectrum then conducted its 2015 Multi-Client survey in 2015, extending over 20,560 km². In addition to the seismic imaging, which gives some strong indications of oil and gas potential, these surveys took place without any security incident, illustrating how the political and security environment is improving, as well as having an effective offshore operating environment.

The FGS is devoting more attention toward the country’s oil and gas opportunities. The Somali Ministry of Petroleum and Resources is now operating from a new building — funded by the UAE’s Rakgas, Jacka Resources, Sterling Resources Genel and DNO — which contains a dedicated data processing room, and trains ministry staff to understand the aspects of licencing and the exploration cycle. To illustrate the significance of this development from a financial standpoint, the ministry under Hassan Sheikh Mohamud’s government (2012-2017) generated more than US$5m in revenues, compared with the US$185,000 generated by the Transitional Government (2008-2012).
Other positive steps are visible from the government’s new legal and regulatory framework, supported by both the World Bank and African Development Bank (AfDB) funding:

- completion of the Petroleum Registry for legacy right holders and new interested IOCs
- introduction of a downstream law
- redrafting and amendments made to the petroleum legal framework to adapt to the federalisation of Somalia, by Norway’s Simonsen Vogt Wiig
- A newly developed PSA model and its fiscal terms

A noteworthy development is the FGS’ announcement of its first licencing round — at Africa Oil Week 2016 — covering the prospects near central and southern Somalia. It will exclude the shallow block concessions signed in 1988 with Shell and ExxonMobil. An initial statement by the Ministry of Petroleum and Mineral Resources predicted the licence round opening in the first quarter of 2017, although no further details have since been released.

The ministry’s technical director-general, Abdulkadir Hussein, announced the development of a state-owned national oil company and regulatory body, which will be operational in 2017. According to the ministry’s initial statements, it would receive a 10% stake in all hydrocarbon ventures and, once the company becomes more established, it will put forward its own funds of up to 30%.

Investors will require assurance about these issues and any influences from the reformed regulatory framework affecting upstream and downstream sectors. They will also want reassurances about business relations with a government whose predecessors have a poor track record of corruption and mismanagement.
UGANDA

Uganda is a new oil producer, but the history of oil exploration is more than a century old. Oil seepages along Lake Albert were discovered by local communities prior to the country’s independence in 1962. Since then, political instability — despotic rule under Idi Amin (1971-1979) and a virtual civil war with the Lord’s Resistance Army, which has waged since the 1990s — has discouraged many investors. In addition the logistical, technical, and commercial difficulties facing IOCs and prospective international investors are the challenges of exploring and transporting oil from landlocked Uganda, more than 1,000km from the nearest coast.

A series of oil discoveries from 2006 onwards put Uganda on the global energy map. These constituted:

- the largest onshore oil finds in sub-Saharan Africa in over two decades
- part of a greater surge in oil and gas exploration in East Africa
- a wider energy drive in Africa

Yet, almost immediately after these discoveries, a series of regulatory disputes broke out between the Ugandan government and the IOCs, which delayed both production and development. Consequently, Uganda's first oil exports are still not expected before 2020.

The current oil fields are estimated to contain reserves of around 2.5bn barrels of oil. They are located in the Albertine Graben — an area 500km in length and up to 454km in width — which forms the country’s western border with the Democratic Republic of Congo (DRC), and stretches from Lake Edward (in the south) to the border with South Sudan (in the north).

The Albertine Graben contains the best oil potential but it has not been thoroughly explored. As such, and given the less explored basins, there is speculation that Uganda’s reserves may exceed six billion barrels.
Based on the current discoveries, oil production is estimated to reach between 200,000 and 250,000 b/d based. It therefore has the potential to become a potential mid-level African producer, such as Equatorial Guinea and Gabon.

Tullow's confirmation that the government, and its JV partners, are still targeting Q4/2017 for the final investment decision for Lake Albert is of note, with production to commence three years later in 2020. Tullow's farm down decision — announced on 9 January to sell 21.57% of its 33.33% interests in exploration areas 1, 1A, 2, and 3A, to Total for US$900m — is one of the largest pieces of industry news for Uganda, as it will produce another capital gains windfall for the government. It was confirmed in March that CNOOC had exercised its pre-emption rights for half of the purchase, which will give both CNOOC and Total a 44% share in the blocks.

Regional pipeline

The export of Ugandan oil to international markets is dependent on the construction of a regional pipeline. A southern route — running 1,400km along Lake Victoria from Uganda to Tanzania — is currently the most likely option. Initially a pipeline through Kenya — epitomised by the August 2016 signing of a Memorandum of Understanding (MoU) between Uganda's President Yoweri Museveni and Kenya's President Uhuru Kenyatta — was the favoured route. However, when Total expressed its preference for the longer but flatter Tanzanian route — expressing concern about the threat from Al-Shabaab in northern Kenya, and also its far more challenging pipeline gradient — it promised to source financing for the project, thus making it clear that the Tanzania route a far more likely option.

According to the Association of Uganda Oil and Gas Providers’ CEO, Emmanuel Mugarura, Uganda expects up to US$20bn in oil sector investment during the 2020 development phase. The US$11m Front End Engineering and Design (FEED) phase began in January 2017 and is expected to be completed by the end of the year. Construction of supporting facilities will include:

- an international airport at Kabale
- a highway
- power transmission
- IT infrastructure cable systems

Logistical costs for around 2,000 trucks delivering materials from Kenya and Tanzania will also be factored in. It is estimated that the Hoima-Tanga pipeline project — being financed under a public-private partnership — will create 15,000 jobs during its construction phase.

Therefore, Uganda should be exporting oil via Tanzania by 2020. Because of the waxy consistency of Uganda's crude, the 24inch diameter pipeline will be the world’s longest heated crude oil pipeline. Thus, the future oil sector investment opportunities in Uganda largely hinge on the successful construction of this export pipeline.
KENYA

So far, the build-up to the August 2017 election has dominated the country this year. Although a repeat of the post-election political violence seen in 2007-2008 is unlikely, the combination of political uncertainty, and the low barrel price, has dented investor confidence in greenfield exploration projects.

The current drought, which includes oil exploration areas in the north of the country, led President Uhuru Kenyatta to declare it as a national disaster. In pastoralist areas the drought has exacerbate ethnic and tribal conflict, leading to humanitarian problems. The violence in the Rift Valley — with unprecedented land invasions in Laikipa County to the north of Nairobi — could spread if the drought continues.

Current oil and gas activities

Kenya has four prospective sedimentary basins: Anza, Mandera, the Tertiary Rift, and Lamu which extends offshore. The first exploration work was carried out in the 1950s by BG and Shell. Around 30 onshore and offshore wells were drilled in the 1960s by a number of IOCs. It wasn’t till 2012, when Tullow Oil drilled the Ngamia-1 well in the South Lokichar Basin (north-west Kenya), that the first oil discoveries were made. Since then around one billion barrels of oil have been discovered at an array of onshore basins in the north-west of the country.

For a couple of years East Africa, and Kenya in particular, was one of the world’s top exploration destinations. However, the collapse in oil prices, made medium and long-term frontier exploration far less appealing than current or near term production. This had led to a slowing down of investor interest in Kenya — yet this is now changing.
Up until quite recently, relatively expensive offshore exploration has been less appealing. However, following the recent success in Mozambique and southern Tanzania, offshore exploration in both Kenya, and now Somalia, is once again attracting IOCs and a flurry of activity. For example, Shell's BG Kenya subsidiary has, recently commissioned Fugro to undertake a survey for oil seeps in the L10A and L10B offshore blocks.

The government maintains infrastructure growth through its Kenya Vision 2030 and Second Millennium Plan 2013–2017, which identify energy as a key growth driver. The Petroleum Exploration and Production Act (2015) provides regulatory framework for Kenya’s negotiations and Production Sharing Contracts (PSCs). This, in turn, empowers the Minister for Energy to sign PSCs, with the government paying taxes on behalf of the investor to reduce the fiscal burden.

Total's decision to route the Ugandan oil export pipeline through Tanzania was wise due to three key reasons:

- the much tougher terrain across Kenya
- the possible political risk attached to the 2017 election
- Kenya’s infrastructure requires necessary improvements

While upgrades have occurred within the development of its ports, onshore transportation relies on trucks to deliver oil to Mombasa. Driver strikes earlier this year, and poor road conditions, illustrate the beginning of cracks within the country’s infrastructure issues that need to be addressed, and given major investment, before they get any worse.
Oil and gas prospects

Looking forward, three development schemes are worth noting:

1. **The Early Oil Production Scheme (EOPS)**
   This arose from Tullow’s substantial 2012 onshore discoveries and is a key strategic project from the Kenya Vision 2030. It involves the transportation of early South Lokichar oil production to Mombasa by road — sanctioned in March 2017 by the JV partners Tullow, Africa Oil, and Maersk Oil. The EOPS will use existing upstream wells and oil storage tanks to initially produce approximately 2,000 b/d gross in mid-2017. This early pilot scheme will provide important information to assist in full field development, with the plan to continue until mid-2019. The scheme has the potential to produce up to 2,000 b/d in the second half of 2017.

2. **Kenya Petroleum Technical Assistance Project (KEPTAP)**
   Word Bank-funded, this is a six year project that began in October 2014. Costing US$50m, it will strengthen the government’s capacity to manage the petroleum sector and provide wealth for sustainable development projects. The key objectives are to strengthen the upward and downward linkages in the sector and formulate sound public and private sector policies to capitalise oil and gas development.

3. Lastly, and most importantly, the government approved a pipeline development from the northern oil fields to Lamu where a second port is being built. The US$2.1bn pipeline will be completed by 2021, transporting between 80,000 b/d and 150,000 b/d of crude along the 891km from Lokichar to the coast. This will allow East Africa’s biggest economy to export large volumes of oil that are currently stranded because of the reliance on road transport.
MOZAMBIQUE

Although Mozambique currently produces no oil, Anadarko and Eni have discovered vast quantities of gas since 2010 offshore Rovuma Basin, near the border with Tanzania. With a very small domestic market, and a geographical location that makes it advantageous for major Asian markets, the obvious solution is to export LNG. But, the race is now on to get to market first.

Recent estimates put Mozambique's proven natural gas reserves at 100 Tcf, compared to only 4.5 Tcf in 2011. This means that Mozambique is Africa's third largest proven gas reserves after Nigeria and Algeria. Depending on when the projects are completed, it could also become the world's third largest LNG exporter after Qatar and Australia. The International Energy Agency (EIA) believes that Mozambique could receive over US$115bn in gas revenues over the next 25 years.

The state-owned Empresa Nacional de Hidrocarbonetos de Mocambique (ENH) represents the government in all petroleum operations. The petroleum law stipulates that ENH will participate as a stakeholder in all upstream and downstream petroleum operations.

The county's current natural gas production comes from Sasol operated blocks in Inhambane Province, which holds reserves of around 2.6 Tcf. This gas is produced and processed in Temane, and transported via a 865km pipeline to South Africa, which is linked to southern Mozambique for domestic demand.

Becoming a major gas producer

The Republic of Mozambique Pipeline Investments Company (ROMPCO) — a JV between the South African Gas Development Company (iGas)(25%), Companhia Moçambicana de Gasoduto S.A.R.L (CMG) (25%), and Sasol Gas Holdings (50%) — plans to expand the capacity of the existing pipeline through the Named Loop Line 2 (LL2) project, valued at US$210m and is expected to be operational in 2017.
Natural gas exports are expected to increase dramatically because of recent discoveries. The Anadarko discoveries in Area 1 may justify the construction of an initial minimum of two LNG action trains. Anadarko selected developers for a JV including Saipem, Chiyoda and Chicago Bridge & Iron, to construct the LNG park on the Afungi peninsula, and anticipates a final investment decision on a US$25-30bn project.

Eni’s development of a floating LNG (FLNG) in Area 4 block at its Coral South Project will be another prospect. The project will produce approximately 3.4 MPTA (5 bcm) of LNG and is expected to commence production for the market in 2020.

For 2017-2022, the main opportunities will be tied to the construction of Anadarko’s LNG plant and ENI’s FLNG development. The former includes:

- two 180,000 cubic metre storage tanks
- the storage of condensate
- a multi-berth marine jetty
- and, complementing infrastructure and utilities

Eni’s development foresees the drilling and completion of six subsea wells with the construction and installation of an FLNG facility. In March 2017, ExxonMobil and Eni signed a US$2.8bn sale and purchase agreement that enables ExxonMobil to acquire a 25% indirect interest in the Area 4 block. Currently the Area 4 block is split between:

- Eni East Africa (70%)
- ENH (10%)
- KOGAS (10%)
- Galp Energia (10%)

At present, Eni currently holds a 50% indirect share in the block due to its 71.4% stake in Eni East Africa. Following completion of the transaction the partners for Eni East Africa will therefore be Eni (35.7%), ExxonMobil (35.7%) and CNPC (28.6%).

Eni will continue to lead the Coral South floating LNG project and all upstream operations in Area 4, while ExxonMobil will lead the construction and operation of onshore LNG facilities onshore.

Two gas-to-liquid projects are being proposed by different consortia — Royal Dutch Shell in partnership with ENH, and a JV of Eni-Sasol — to the government. This could be one of the leading projects of the Natural Gas Domestic Master Plan, which stipulates that the gas will be used for power and the production of methanol and urea. However, at the time of writing no plans have been approved.

Mozambique is expected to hold its 7th oil and gas licensing round in late 2017 or first
half of 2018. This should accelerate the development of its natural gas reserves in a period of growing supply, and stabilising low global commodity prices. However, there is now competition from Tanzania as it also seeks to become an LNG producer. Looking ahead, there are large supplies of natural gas in the global market, in addition to low regional and domestic demands, which means that exploration and investment may be slower than the Mozambique government would like.

There are several key considerations for future natural gas development:

- the construction of gas power plants to anchor local consumption
- domestic gas sales
- potential power trade deals with eastern and southern African countries

Mozambique will also need to cash in on the opportunities with South Africa through its long-term diversification of energy production and its retraction from coal. South Africa remains a healthy market for Mozambique’s gas, given the Sasol legacy and the drive for LNG and cleaner fuel.

**Thank you note**

We would like to take this opportunity to thank both Envoi Ltd and Simco Petroleum (Management) Ltd, who provided us with some of the information incorporated within this report.

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Harry Harrison-Sumter: +44 207 596 5065 | harry.sumter@ite-events.com
Amanda Wellbeloved: +27 11 880 7052 | amanda.wellbeloved@ite-events.com
Sonika Greyvenstein: +27 11 880 7052 | sonika.greyvenstein@ite-events.com