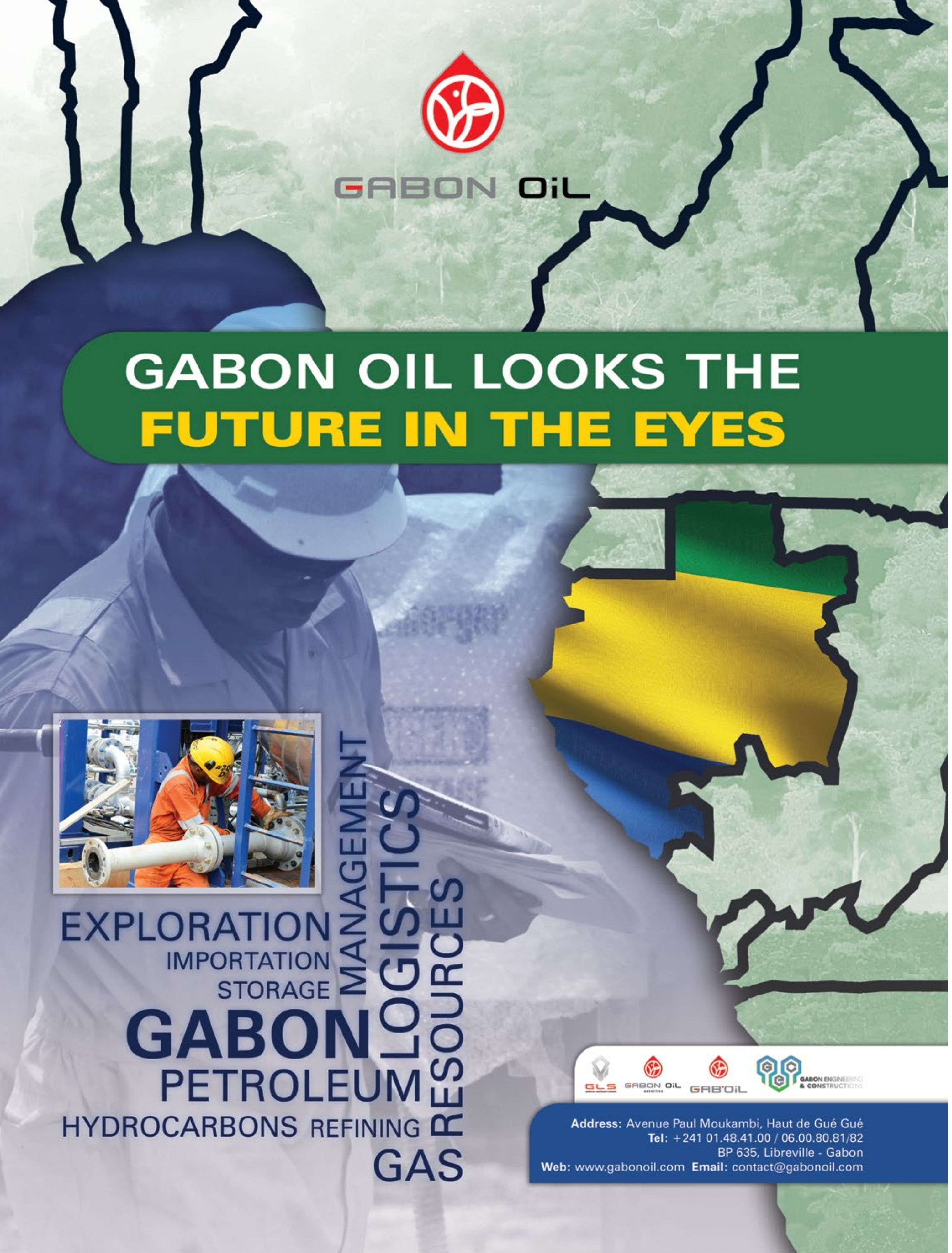
GLOBAL BUSINESS REPORTS & AFRICA OIL WEEK

AFRICA OIL AND GAS

AOW OFFICIAL INVESTMENT GUIDE

2019



Welcome Letter

Welcome to the Africa Oil and Gas 2019 Industry Report, the inaugural edition of a collaborative effort between Global Business Reports (GBR) and Africa Oil Week (AOW). The publication, launched at the AOW Conference in Cape Town, has a special distribution to 1,800 senior decision makers, including ministers, CEOs and senior representatives from NOCs, IOCs and independent oil companies, GEOs, oilfield services and business service providers.

While this may be our first publication produced in partnership, both GBR and AOW have established credentials in delivering high-caliber business intelligence across Africa and within the oil and gas space. Through one of its cornerstone publications, the Mining in Africa Country Investment Guide (MACIG), GBR has sent on-the-ground teams each year to research the extractive industry across the continent, and over its nearly 20 years of operations has produced countless country reports on the oil and gas sector across Africa, the Americas and Asia. AOW has served as a critical meeting place for Africa's E&P players and provided a platform for all stakeholders to set out the future direction of the continent's oil and gas sector and secure major deals and lucrative new partnerships.

2019 is a propitious year to begin our collaboration. While the World Bank has reported Africa's GDP growth at slower-than-expected rates in recent years, 2019 will see a rebound in regional growth from 2.3% in 2018 to an expected 2.8% this year. The oil and gas industry has remained a fundamental driver of regional economic prospects as the continent's top commodity export category, and despite volatility in prices over the years, the continent's oil-producing nations have benefited from factors including maturing regulatory environments, a burgeoning local consumer market and the slow but steady growth of its local content capacity.

Within the pages that follow, readers will encounter the perspectives of some of the industry's leading players through interviews conducted across the oil and gas value chain. Their insights form the basis of our independent analysis, which is supplemented by country factsheets, expert opinion articles and geological maps. This content is intended to guide the investment community and key industry stakeholders through the profiled countries and provide an understanding of the respective opportunities and challenges of doing business within their borders.

We would like to send a special thanks to all of the executives and industry professionals who shared their valuable time and insights with us to make this production possible. Please enjoy the read, and we look forward to providing timely and valuable analysis on Africa's oil and gas industry in the years to come. •

Simon Ford
Portfolio Director -
AOW and Investing in African Mining Indaba
Hyve Group

Alice Pascoletti
Managing Director
Global Business Reports
(GBR)

GRUPO SIMPLES

FOCUSED!

Founded in 2005, Grupo Simples Oil Lda (GSO) is a leading Angolan company, providing services in the Oil and Gas field.

During the last 14 years, GSO has operated successfully in the oil & gas sector within Angola by continually expanding our portfolio. We are committed to contributing to Africa's growing energy market. Our service offerings include but not limited to, Inspection, Crane Maintenance, Fluid Control Management and Services, Rigs Management, Scaffolding, Fabric Maintenance, Vendor Management and Supply Chain Management.

Grupo Simples Oil Lda, has recently expanded its global footprint, with active branches of the group present in:

- **Angola, Simples Lifting and Inspection Lda**
  Simples Lifting and Inspection Lda (SLI) is a division of Grupo Simples, that are specialists in Inspection and Lifting services. SLI has been active in Angola for over 8 years. SLI currently holds the record as the only contractor at ALNG for a 5 Star CHESM Rating for 2 years in a row.

- **USA, Simples Oil International, LLC**
  Simples Oil International LLC, own's land blocks in Texas USA. A currently active producing asset. With fields expecting to increase to 2000Bpd.

- **Mozambique, Grupo Simples Oil, S.A**
  GSO Mozambique is fully licensed to service Oil and Gas Operators in Mozambique. We are currently in talks with several IOC's to support their offshore operations.

- **Simples Supply Chain International, Lda (SSCI)**
  Grupo Simples Oil Lda, have recently partnered with Alaskan based industry giant, ASCI LLC (Advanced Supply Chain International). Our collaboration has increased our capabilites in the areas of supply chain management solutions.

In continuation of our global expansion model, we have successfully completed our first international inspection job performed offshore in Togo.

Grupo Simples aims to become a leading Oil and Gas Exploration and Production company, recognized globally for quality services and our strong commitment to innovation and technology. In order to remain relevant within today's competitive business landscape, we are exploring ways to diversify our operations by exploring opportunities in other energy sectors. As our operations continue to increase and the scale of our business keeps growing, we remain focused on safe and reliable operations.

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Image courtesy of Eni

Africa's Black Gold: Curse or Savior?

Good governance, ridding corruption and increased foreign investment remain key for Africa's long-term development

From the metropolises of Lagos and Johannesburg to the mineral rich jurisdictions of the Democratic Republic of Congo and Côte d'Ivoire, Africa has, for so long, been a land of opportunity. But while the African population continues to hope for an improvement in its quality of life, many countries are still grappling with perennial problems that make providing even the basic necessities a challenge: Corruption, economic mismanagement, risk of famine, acts of terrorism and endless civil wars are just a few of the traumas crippling the continent today. There is, however, reason to be optimistic. The past decade has shown consistent economic growth, multinationals are looking to increase their footprint in the continent and Western investors are learning from their Chinese counterparts about the importance of long-term commitment to Africa.

Radical economic development and an end to extreme poverty remain strong possibilities for Africa in this half of the century. Foreign direct investment (FDI) will be key in facilitating Africa's initial economic growth – major infrastructure projects and investments from China and other Asian countries have demonstrated this. In fact, almost every developed nation across the world has identified Africa as the most significant investment destination, with European leaders increasingly carrying out state visits across the continent.

If FDI represents the ignition for growth, the long-term economic success of Africa this century hinges on how it utilizes the rapidly growing young population of the continent – more than half of global population growth between now and 2050 is expected to occur in Africa, according to the United Nations – as well as its resources. And arguably, the most significant of its natural assets in the coming decade will be oil.

Africa's growing oil economy

Following the crash in the price of oil in 2014, Africa's oil-producing nations were left reeling. Owing, in part, to the commodity's recovery, a bullish market over the past few years has led to strong rates of economic growth across the continent. In fact, Africa's GDP is expected to grow by nearly 4% in 2019, and its oil and gas exports, valued at US$171 billion in 2018, have been a key driver of the economic upturn. In the same year, its precious metal exports, which represent the region's second-largest commodity export category, were valued at US$77 billion, illustrating not only the continent's reliance on its extractive industries but its particular dependence on oil and gas.

Africa's dependence on its natural resource wealth is not new, and it is well understood that the continent's fate is intimately entwined with volatile commodity markets. In the coming years, there are several question marks around the trajectory of the global oil and gas industry that could once again send the continent into a tailspin. Structural shifts to the industry brought on by phenomena like the shale revolution, which has made countries like the United States key exporters, the advent of electrification or the increasing focus on renewable energy sources could prevent oil prices from ever recovering to the heyday of years prior. The full impact of China's economic slowdown on its relationship with the African continent is still uncertain, and how events such as the U.S.-China trade wars will affect global trade flows is equally ambiguous.

The development of economic cooperation agreements like the African Continental Free Trade Area (AfCFTA) and the completion of key infrastructure works will help to facilitate more intra-Afri-

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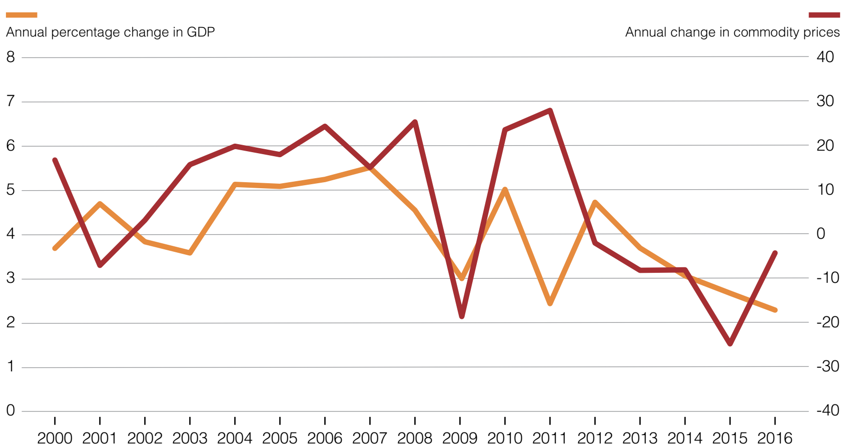
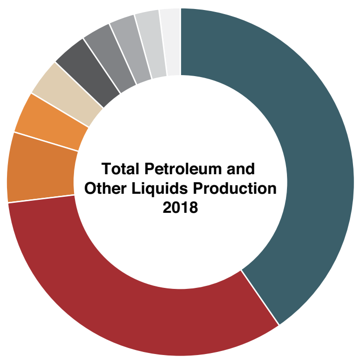
Africa's GDP Growth Correlated to Commodity Prices

Source: AfBD statistics



Sub-Saharan Africa's Top 10 Producing Nations

Source: U.S. Energy Information Administration



Country	Thousand barrels per day
Nigeria	2,057
Angola	1,655
Republic of the Congo	347
Gabon	195
Equatorial Guinea	184
Ghana	174
Chad	132
South Sudan	126
South Africa	110
Sudan	98

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ca trade and cohesion, decreasing the continent's dependence on its export economy and vulnerability to chaotic global conditions. But further to that, the oil economy of Africa is evolving in a manner that should help it to buttress itself further against these threats. "The development of the shale oil industry in America clearly announces the decline of so-called conventional oil and gas reserves, and the reserves of some major producing countries (Russia and the Middle East) are also becoming increasingly depleted, which is not the case for Africa, where only four countries started oil exploitation in 1960s," argued Mahaman Laouan Gaya, secretary general of the African Petroleum Producers Organization (APPO): "A third of the world's hydrocarbon discoveries in the last 15 to 20 years have been in Africa. The oil reserves are there in abundance, and there is no doubt that the hydrocarbon potential of Africa can compete tomorrow with that of any other region in the world."

Nigeria, Angola and Algeria remain key fixtures in the top daily production lists, but recent discoveries have diversified Africa's oil economy away from a handful of players. To the west, offshore assets in Ghana have aided the country's diversification away from gold and coffee. To the east, Kenya and Uganda have discovered oil reserves whilst Mozambique and Tanzania have discovered gas.

"Africa is the last frontier in terms of the quest for resources," said Kishan Pillay, director of oil and gas for South Africa's Department of Trade and Industry. "I hope this expansion of the oil and gas industry helps maximize opportunities for the African people across the oil and gas value chain. More specifically, the ability of African economies to develop strong forward and backward linkages from these resources will go a long way in diversifying these economies and perhaps avoiding issues related to the resource curse."

Nascent jurisdictions such as Senegal are attracting the attention of large multinational players thanks to the incentives put in place by governments eager to promote the untapped potential of their nations' natural resources. For example, Woodside Energy, the largest independent Australian oil and gas producer and responsible for 6% of global LNG supply, will drill up to 23 wells tied back to an FPSO facility with a production capacity of 100,000 bpd for its SNE Field Development project in Senegal. The first phase of development involves targeting about 230 million barrels of oil contained in the SNE field located offshore Senegal in water depths of between 700 m and 1,400 m.

Cath Norman, managing director of Far Limited, partners of Woodside with a 15% participation in the project, gave more details: "The development of the SNE Field is an enormous undertaking for our joint venture and will be the first deepwater oil development for Senegal. The project will produce free cash flow from the end of 2022, with development phased over 30 years. Far sees that the development of the SNE Field and the potential tying back of the FAN and SNE discoveries as underpinning Far's growth and future in West Africa."

A sustainable future

Sustainable development depends on achieving a balance between attracting critical investment and prioritizing a transfer of skills between local talent and more sophisticated international companies. Fortunately, there is increasing realization by all stakeholders of the importance of local content, and thus a growing understanding for best practice. "When we arrived in Senegal, we conducted an assessment of what human capital and capabilities are available in the country," explained Cheikh Gueye,

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> "In recent years, there has been a relative change in the oil map of Africa with an extension of the oil industry from Central Africa to new fronts in North Africa, the Gulf of Guinea and especially the eastern and southern regions of Africa. It is clear that the African continent is gaining momentum with the upcoming arrival of new hydrocarbon-producing countries, like Uganda, Kenya, Senegal, Mauritania, Mozambique, and Tanzania."

- Mahaman Laouan Gaya, Secretary General, African Petroleum Producers Organization (APPO)

Africa's changing energy landscape

Barnaby Fletcher,
Associate Director, Control Risks

> **"Africa has also embraced natural gas – gas production has doubled over the past 20 years, while consumption has tripled and the amount of electricity generated has increased four-fold. This promises to fuel the emergence of new hydrocarbons hubs, most notably Mozambique."**

Africa's energy landscape is changing. Traditionally, a small number of countries have produced – and often consumed – a disproportionate amount of the continent's energy. South Africa, for example, consumes a quarter of Africa's primary energy and produces close to a third of its electricity. Three countries – Algeria, Angola and Nigeria – account for 65% of oil production.

However, a more multipolar landscape is emerging. As the traditional oil giants struggle to maintain production levels, new hydrocarbon discoveries are attracting investment, for example off the West African coast, or in South Africa and Namibia. Africa has also embraced natural gas – gas production has doubled over the past 20 years, while consumption has tripled and the amount of electricity generated has increased four-fold. This promises to fuel the emergence of new hydrocarbons hubs, most notably Mozambique.

As the energy landscape becomes more competitive, governance is adapting. Traditional concession or production-sharing agreements offer little to incentivize more risky exploration of unconventional resources. Governments across the continent are experimenting with new management frameworks, introducing legislation and incentives designed to attract private investment into previously state-dominated energy sectors. In Angola, ongoing reforms are essentially relegating once all-powerful national oil company Sonangol to the role of commercial player. In Nigeria, the Petroleum Industry Bill promises similarly bold restructuring of the sector, even if its exact impact – after long delays and multiple changes – remains unclear.

Domestic markets for the traditionally export-focused oil and gas sector are also growing. Economic challenges in recent years – which have seen low commodity prices drive increasing trade deficits, depreciating currencies and rising inflation – have fuelled ambitions to bring midstream and downstream activities in-country. Refinery capacity across the continent is forecast to more than double by 2023, with greenfield projects proposed in Nigeria, South Africa, South Sudan, Ghana, Zambia, Uganda and elsewhere. In Mozambique, contracts have been signed for downstream diesel, fertilizer and electricity plants.

These developments open up new opportunities for exploration, production and downstream activities. But new markets come with new challenges. Oil and gas companies in countries such as Senegal, Mauritania or Mozambique must manage the expectations of governments, civil societies and local populations with little experience of the sector. In some cases, this has led to the development of unclear and inadequate legislative frameworks. Meanwhile, even when governments have brought in external advisers to draft strong legislation, its enforcement is often inconsistent amid limited technical knowledge among government officials.

Local content requirements can be a source of integrity risk anywhere, but especially in new markets in the technically complex oil and gas sector. Although local companies often have more limited technical capabilities than their multinational counterparts, this rarely dims government ambitions to promote their involvement in the sector. This means that foreign investors are often forced to choose from a small selection of local partners or subcontractors whose credentials are based on little beyond a strong relationship with senior politicians. Proper due diligence into any prospective partner is essential, but so is education. There are numerous examples of foreign players facing compliance issues stemming from the unwitting actions of local partners new to the sector and unfamiliar with the strict provisions of transnational legislation such as the U.S. Foreign Corrupt Practices Act or the U.K. Bribery Act.

Meanwhile, reform efforts in more established markets may have an overall positive impact, but are always accompanied by uncertainty. The ambitious reform agendas of relatively new leaders – such as Angola's President João Lourenço, Prime Minister Abiy Ahmed of Ethiopia or President Cyril Ramaphosa of South Africa – are slowing down as they are forced to navigate complex webs of influential stakeholders with competing objectives. The investors most likely to benefit from the opportunities are not those that take reform announcements at face value, but those that understand the drivers behind them and match their investments to the wider priorities of reformist governments.

For all the talk of new markets and bold reforms, nothing changes overnight. Indeed, in many cases, despite apparent volatility in the regulatory landscape, most changes take years to have a discernible impact. Nonetheless, things are changing. Investing the time to understand the stakeholders involved, nuances and direction of travel will serve investors well when trying to exploit the opportunities and mitigate the risks these changes present. •

The Prospect Forum at Africa Oil Week

AFRICA OIL WEEK
4–8 November 2019
CTICC 2, Cape Town, South Africa

The Prospect Forum is without doubt the engine-room of Africa Oil Week. It's where delegates flock to find new business opportunities and learn proprietary information about Africa's most highly sought-after assets, as well as farm out and joint venture opportunities.

This year, the Prospect Forum has been extended to include 2 full days of content. Tuesday (5th November) is dedicated to National Oil Companies and geoservice companies, whilst on Wednesday (6th November), Independent Oil Companies take centre-stage.

Africa Oil Week is pleased to present the Prospect Forum alongside its partners PVE Consulting and GEO ExPro and with sponsorship from CGG.

In the run up to the 24th Africa Oil Week 2 years ago, it suddenly became clear to us that there was a key gap in the conference programme. Though we were bringing together the most senior decision-makers across the African upstream, we weren't providing a transactional platform for our delegates to discuss and broker high-value E&P deals.

So, in 2018 the Prospect Forum was born. The new stage was an immediate hit – we saw packed rooms for presentations from Independents showcasing assets, geoservice companies showing data packages; and 14 National Oil Companies promoting their open acreage.

The 2019 Prospect Forum programme will build on last year's success, with 2 full days of presentations covering the hottest assets on the continent – from Cairo to Cape Town. We hope that this stage continues to grow and bolster AOW's reputation as a deal-making hub.

Catriona McDavid,
Senior Conference Producer,
Africa Oil Week

National Roadshows and Bidding Rounds at Africa Oil Week

AFRICA OIL WEEK
4–8 November 2019
CTICC 2, Cape Town, South Africa

As ever, Africa Oil Week is the destination of choice for national roadshows in the oil and gas sphere. These roadshows give delegates the chance to get proprietary information on key opportunities, legislation changes, bidding rounds and more – direct from the companies and governments who are leading them.

Africa Oil Week is pleased to have PGS on board as a headline sponsor for the National Showcase Theatre, as well as the invaluable input of IHS Markit as a content partner.

2019 HIGHLIGHTS

Sierra Leone
Sierra Leone announces details of a new bidding round at Africa Oil Week 2019. Just 8 wells have been drilled in the West African nation since 1982 – mostly recently a single well drilled by Lukoil in 2013, followed by 3 drilled by Anadarko (now Occidental) in 2009, 2010 and 2012. The country is now determined to change this...

The bidding round will be led by Minister of Mineral Resources Hon. Foday Rado Yokie and Timothy Kabba, Director General of the Petroleum Commission of Sierra Leone. Jonathan Copus, CEO of Getech will lend his support to the launch.

Nigeria
Africa Oil Week 2019 is the first international appearance to the oil and gas community for brand-new State Minister of Petroleum Resources, Hon Timipre Marlin Sylva and new the General Managing Director of Nigeria's National Oil Company (NNPC), Mele Kolo Kyari. Also joining the Nigerian delegation is Bala Wunti, NNPC Group General Manager of Corporate Planning and Strategy.

Mr Kyari will be participating in a Prospect Forum session titled "Regional Session: Atlantic Transform Margin (Liberia to Nigeria)" as well as using the conference's Nigeria Pavilion to lay out his vision for the future of the petroleum industry in the country – which is aiming towards 70% indigenous participation in oil & gas projects by 2027.

Mozambique
Following the success of significant large-scale projects including Anadarko's $20bn Mozambique LNG project, investors from across the globe are turning towards Mozambique with interest. A $5bn EXIM bank loan to fuel further development is just one example of this phenomenon.

Participating in the Mozambique National Roadshow at Africa Oil Week are two people instrumental in the country's oil and gas industry. Chairman of the the National Petroleum Institute (INP), Carlos Zacharias will discuss his country's ongoing development, alongside the CEO of Mozambique's NOC (ENH) Omar Mithá.

Do you have an asset or prospect that the oil and gas community should hear about?
Are you a government looking to showcase your hydrocarbons agenda to the world?

Contact: catriona.mcdavid@hyve.group to find out about participation in Africa Oil Week 2020.

"The SNE Field Development involves the drilling of up to 23 wells tied back to an FPSO facility with a production capacity of 100,000 barrels per day. The first phase of development involves targeting about 230 million barrels of oil contained in the SNE field located offshore Senegal in water depths of between 700 metres and 1400 meters."

- Cheikh Gueye, Senegal Country Representative, Woodside Energy

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Senegal country representative for Woodside Energy. He continued, "We were then able to adjust our plans and prepare further according to the results of the assessment. One of the key requirements we have included in all of our contracts is to ensure that our contractors have strong local content plans in place."

Woodside Energy will look to bring its SNE project into production before exploring further opportunities within the Mauritania-Senegal-Guinea-Bissau-Conakry basin. With international oil majors seeing the continent as an opportune frontier for years to come, the aforementioned nations have the opportunity, if the right strategy is implemented, to transform their economies and in doing so raise millions out of poverty. History has proven how a resource can negatively impact a nation. In some countries, black gold has made a handful of individuals rich whilst consigning millions to extreme poverty. Being open to foreign investment, implementing a transparent regulatory framework and prioritizing anti-corruption measures are the cornerstones in building a successful oil economy.

With the sentiment towards oil quickly changing across the globe given the devastating impact increased greenhouse gas emissions are having on climate change, its significance will change over the course of this century. However, there is a window for countries like Mozambique in the coming decade to transform their economies if they can learn from the success stories of the past and implement a strategic roadmap with clear regulatory guidelines that will benefit the many, and not the few. •

Guido Brusco

EVP West Africa
Eni

What is Eni's history in Africa, and how important is the sub-Saharan region for the company?

Our history in Africa started in the 1950s with operations in Egypt and Libya, and today we have a very large footprint in the continent: almost 60% of our production and 70% of our reserves are currently located in Africa, and we remain the largest IOC in the region. The main countries for us are Egypt, Libya, Angola, Nigeria, Algeria, Congo, Ghana and Mozambique. Around 420,000 barrels of oil equivalent per day (boepd), more than 20% of Eni's global production, comes from sub-Saharan Africa, which continues to offer significant growth potential. In this region, we are not solely focused on oil and gas; we are also involved in other energy initiatives, for instance in renewables and forestry initiatives.

In Ghana we have had our flagship project in recent years, OCTP: it was the first deepwater, non-associated gas project entirely dedicated to the local market. Project is complete and today we produce about 55,000 barrels of oil and 90 million standard cubic feet of gas per day, which will go up to 180 million later this year. This integrated facility has been a game changer for Ghana, because the country will phase out all imports of liquids for power generation, meaning significant savings for the State and important reductions of carbon emissions. Beyond this, we recently had the Akoma discovery (about 600 billion cubic feet), which may allow us to extend the production plateau on the OCTP project.

In Angola, we produce almost 150,000 boepd. At the end of 2018 we restarted our exploration campaign, and we scored six oil discoveries with 1.8 billion barrels of oil in place. This will trigger a new wave of projects: we already have two FPSOs operating in-country, and the upside potential of the discoveries may require a third FPSO. We are also looking at the non-associated gas.

How is Area 4 moving along in Mozambique?

In Mozambique we already made the final investment decision for a floating LNG platform at Coral South, where 50% of the construction is already complete and the project is well on schedule to start production in 2022. The Saipem 12000 drill-ship is already in the country to drill the six subsea wells that will feed the facility. Then, there is the upcoming project with ExxonMobil. When we had the discovery at Area 4, we tried to turn it into cash immediately, so we diluted our participation, selling 20% to CNPC in 2013, and a further 25% to ExxonMobil. As Eni, we remain operators of the upstream activities, while ExxonMobil is the operator of the midstream activities and will develop the onshore liquefaction facility.

What is the latest for Eni in Congo and Nigeria?

In Congo we have a lot of legacy assets, but the current focus is on Marine XII, where we are developing the Phase 2 of Nené Marine and we are also monetizing the associated gas by installing a third turbine in the Centrale Electrique du Congo (CEC) power plant onshore, increasing capacity from 300 MW to 450 MW. With the CEC power plant we are feeding almost 70% of the domestic market. Meanwhile, in Nigeria we have just completed a very successful campaign in the Abo deepwater field. We doubled our onshore production from 12,000 to 24,000 bpd, and we are having a massive infilling wells campaign in our four onshore concessions to increase oil production and the gas delivery to Nigeria LNG.

"Around 420,000 barrels of equivalent per day (boepd), more than 20% of Eni's global production, comes from sub-Saharan Africa, which continues to offer significant growth potential."

Having such a large footprint in Africa, how do you work around local content requirements?

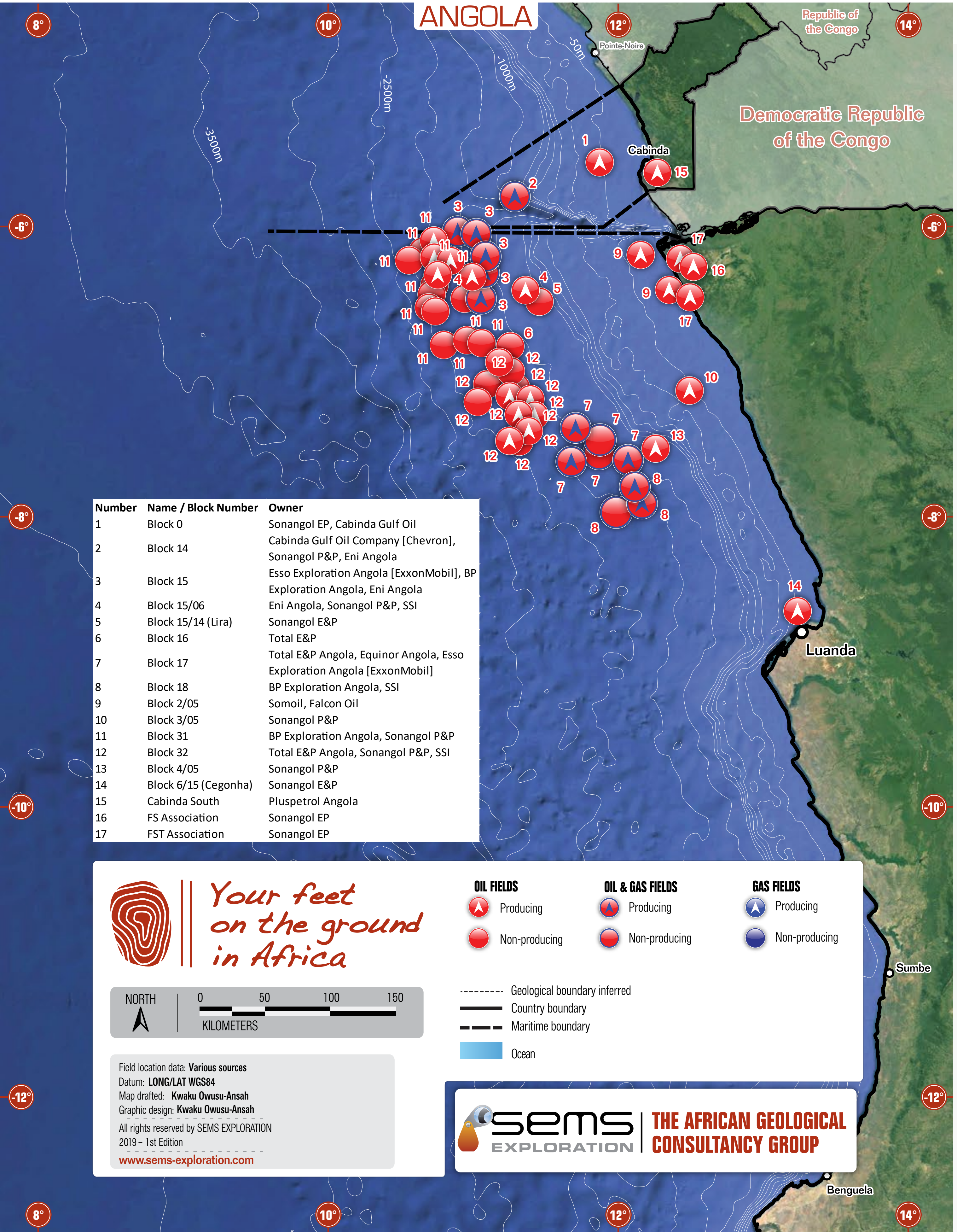
In sub-Saharan Africa we have about 3,000 direct employees and between 70% and 90% of them are locals, depending on the maturity of the country. We have a very rigorous multi-area training program, yet capacity building is not just directed to the local human resources, but also to the local industrial base. This is part of Eni's mission as well as a tool for cost reduction. As an example, our OCTP project in Ghana, which was the largest single investment ever made in the country, is a deepwater project requiring high levels of technology, and we had 330 contracts worth US$2 billion awarded to Ghanaian contractors, out of a total investment of US$8 billion. •

Image courtesy of Eni

ANGOLA

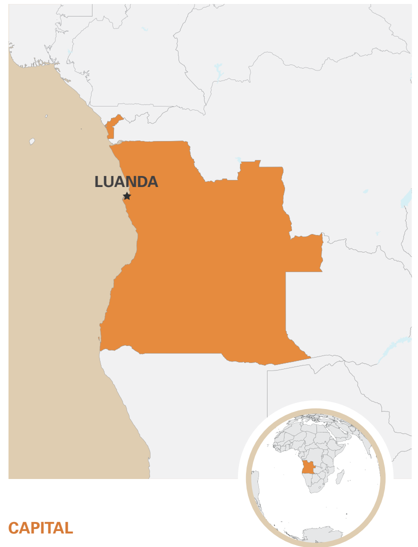
"Angola's regulatory requirements for oil and gas have been changing very rapidly, with several decrees aimed at simplifying investment, new rules and procedures for public tenders involving oil and gas contracts and a revised gas framework."

- Ricardo Santos,
Country Senior Partner,
PwC Angola



Number	Name / Block Number	Owner
1	Block 0	Sonangol EP, Cabinda Gulf Oil
2	Block 14	Cabinda Gulf Oil Company [Chevron], Sonangol P&P, Eni Angola
3	Block 15	Esso Exploration Angola [ExxonMobil], BP Exploration Angola, Eni Angola
4	Block 15/06	Eni Angola, Sonangol P&P, SSI
5	Block 15/14 (Lira)	Sonangol E&P
6	Block 16	Total E&P
7	Block 17	Total E&P Angola, Equinor Angola, Esso Exploration Angola [ExxonMobil]
8	Block 18	BP Exploration Angola, SSI
9	Block 2/05	Somoil, Falcon Oil
10	Block 3/05	Sonangol P&P
11	Block 31	BP Exploration Angola, Sonangol P&P
12	Block 32	Total E&P Angola, Sonangol P&P, SSI
13	Block 4/05	Sonangol P&P
14	Block 6/15 (Cegonha)	Sonangol E&P
15	Cabinda South	Pluspetrol Angola
16	FS Association	Sonangol EP
17	FST Association	Sonangol EP

ANGOLA



CAPITAL
Luanda

LAND MASS
1,246,700km2

POPULATION SIZE (as of 1 july 2019)
31,825,295

POPULATION GROWTH
(annual growth from 1 july 2018 to 1 july 2019)
3.30%

OFFICIAL LANGUAGES
Portuguese

HEAD OF STATE (as of 3rd october 2019)
President João Lourenço

HUMAN DEVELOPMENT INDEX (2018 REPORT)
(out of 189 countries)
0.581 (medium) / 147th

EXTREME POVERTY RATES
(income of less than $1.90 a day)
30.1% (2008)

DEMOCRACY INDEX RANKING 2018 (out of 167)
123rd

ECONOMIC FREEDOM (out of 180)
156th / Mostly Unfree

EASE OF DOING BUSINESS RANKING (out of 190)
173rd

MAIN EXPORT ITEMS
Oil, diamonds, minerals, coffee, fish, timber

TOP 3 EXPORT DESTINATIONS
China (61%), India (12%), United States (7.9%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$3,669 / 117th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$6,814 / 125th
IMF 2018

GDP growth
(PPP growth 2018)
-2.60%
World Economics 2018

Public Debt as % of GDP
87.80%
CIA

Inflation Rate Forecast Q4 2019
17.60%
Trading Economics 2019

Value of Exports
(millions)
$40,774
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$36,323
OPEC 2018 / OEC 2018

Current Acount Balance
(millions - as of July 2019)
$7,502
Trading Economics 2019

Production Levels
(barrels per day)
1,769,615
U.S Energy Information Administration (EIA)

Africa Production Rankings
2nd
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
61,417
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
8,160
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
308
EIA 2018

Marketed production of natural gas
(million cubic metres)
9,614
OPEC 2018

Refinery capacity (1,000 bpd)
80
OPEC 2018

Standard Corporate Tax
30%
Deloitte (November 2018)

Royalties
10%
Deloitte (November 2018)

Angola

A new regime attempts to revitalize

Angola's rapid ascent to become the third richest country in sub-Saharan Africa by 2014 was fueled by an oil boom, as the economy rose dramatically in tandem with soaring prices between 2004 and 2008. Under the leadership of the former president, José Eduardo dos Santos, the country became synonymous with the excesses of dramatic wealth creation as oil production reached 1.8 million bpd. However, with roughly half of Angola's GDP coming from the oil and gas sector, the country nosedived when oil prices plummeted in 2014, leaving stacks of half-finished high-rise tower blocks abandoned in Luanda as investors pulled out and the government suddenly needed billions of dollars in foreign loans. The crash left the country's impoverished citizens in a devastating situation, as much of the garnered wealth was concentrated in the hands of a small, primarily political, elite.

In 2018, citizens and investors alike observed the inauguration of João Lourenço with prudence, as the former minister of defense had been singled out as the favorite by his predecessor. Nevertheless, Lourenço was true to his word as promises of swift and thorough reforms proved to have substance. Angola's new president brought about changes that would have seemed unfathomable under the previous regime. An anti-corruption campaign convicted numerous

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Alberto Mendes

President
Grupo Simples

How has Grupo Simples evolved since its creation almost 15 years ago?
Grupo Simples was established in 2005 as an oil service company with the objective of becoming an oil operator. The goal was to gain knowledge in the industry through the company's service offerings, as well as obtaining the capital to move forward within the E&P space. In the beginning we provided fuel services, and then became involved with asset management and rental services. Grupo Simples also has a manpower supply division and in 2010, an inspection services arm was added to the portfolio. In 2012, Grupo Simples placed its first rig in block 17, which was operated by Total. In 2017, we reached the milestone of becoming the first Angolan oil operator in the US, with operations in East Texas. Today we are running three units – oil and gas, oil field services and exploration and production.

Can you elaborate on the company's expansion to East Texas?
We saw an opportunity in East Texas and relocated resources that were prepared for onshore operations in Angola, to the US. The journey has not been without its challenges, but we have been investing heavily to improve production, and we are looking into acquiring more wells. The East Texas project delivers enough revenue to aid expansions in Angola and other African countries such as Mozambique and Ghana.

What strategy should Angola adopt to develop its onshore oil blocks and increase production?
Grupo Simples secured operatorship for exploration and production rights in onshore Kwanza Basin Block KON-06 and Block KON-09, but these blocks were cancelled due to the downturn. The government is putting in the effort to make more onshore blocks available as the cycle is starting to turn. We look forward to new opportunities coming online and partnering with different players, such as Sonangol, to develop new blocks. Furthermore, we would like to see the emerging Angolan private sector take more risks on proven blocks rather than exploration blocks, and for this to happen there needs to be cooperation between national companies and the government. The profits generated from proven oil blocks can aid in the development of infrastructure for the development of new blocks.

Which projects in Angola do you see as having the best potential moving forward?
Given the history and the characteristics of the basins, we believe that there is great potential. Previous operations have produced great blocks, as proven by Eni. With continued exploration efforts, I believe that Grupo Simples can capture great opportunities, especially within the Namibe basin. The government is putting in the effort to create a favorable and stable business environment for investors, and attracting investment will help the industry and the country prosper moving forward.

Does Grupo Simples have any involvement with non-associated gas development?
In the US, we capture gas and put it into the system as there is already a grid and the infrastructure to sell the gas. In Angola, the new law has increased our appetite for business opportunities around gas, but the infrastructure is not in place yet. Grupo Simples provides services including operations management to the Angola LNG project, and is the only Angolan company which has a five-star safety rating. Although we already play a role within the gas industry value chain, we are on the lookout for business opportunities more directly connected to gas itself.

> **"We can capture great opportunities, especially within the Namibe basin. The government is putting in the effort to create a favorable and stable business environment for investors, and attracting investment will help the industry and the country prosper moving forward."**

What is Grupo Simples' vision for the future, and what would you like to achieve by 2021?
Our vision is to become the preferred company providing oil and gas services, adding value to clients' core business with a highly motivated, trained and competent local workforce, without compromising on safety, health, environment or quality. By 2021, Grupo Simples would like to have an operating block in Angola as well as a more meaningful market share in our different operational units. We also have the objective to consolidate our operations in the US to approximately 5,000 barrels per day. Another goal is to establish our scaffolding and inspection services in Mozambique and inspection services in Ghana, two emerging markets with huge potential. Through these developments, we aim to have annual revenues of US$65 million by 2021. •

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allegedly corrupt officials formerly under dos Santos' protection; the regulation requiring local ownership of private companies was abolished; the kwanza was unpegged from the U.S. dollar, causing a swift 10% weakening; and lastly, Lourenço pledged to move away from an over-dependence on oil by diversifying the economy – citing the non-associated gas development from the Angola LNG project as a potential driver.

The road to recovery is an arduous one, however, and signs of the downturn still remain. In June 2019, British Airways closed their direct service from London to Luanda, previously one of the company's most profitable routes during the remarkable expansion of the city from 2002 onwards.

For players throughout Angola's oil and gas value chain, adjusting to the downturn has been an act of cutting the fat and streamlining operations. "During the downcycle, the longest we have witnessed in recent history, Baker Hughes GE (BHGE) managed to consolidate most of its facilities in Luanda, Angola, to a multimodal facility (MMF) located inside Sonils port by combining all of our four product companies into a single facility," explained Ricardo Aboud, BHGE's geomarket director for Angola and Mozambique.

If leaner times have forced multi-billion dollar international companies like BHGE to adapt to Angola's post-2014 reality, it follows suit that for local companies with less extensive resources the challenge has been even more pronounced. Petromar, the construction and maintenance oil and gas service company founded by Sonangol and Saipem in 1984, was operating two fabrication yards in Soyo and Ambriz with more than 1,200 employees, but a sharp reduction in workload from 2015 caused the company to scale down its operations, according to Antonio Bravo Neto, general manager. As has been the case with many service companies, maintenance contracts for the IOCs have been key to survival: "During the downturn, Petromar stayed afloat through its maintenance services. For the last few years, we have been involved in the maintenance of the Soyo LNG plant, Block 3 maintenance work and Block 0 modification works for Chevron," related Bravo Neto.

For newer entrants in the market, such as Petrowork Solution, the Luanda-based company established in 2015 to offer a range of cleaning and corrosion protection related services, growing business has been a gradual and hard-fought process: "A significant amount of companies operating on our level are still feeling the pains of the downturn," reflected Alan Glyn-Cuthbert, Petrowork Solution's country manager, who observed that starting the journey at the beginning of the downturn has also had its advantages: "We do not have the legacy of high oil prices and were forced to start in a very lean and efficient way."

Another company that opened its doors in 2015 is Integrated Solutions, established to provide high level IT services locally to the Angolan market for customers such as Total. Msuega Tese, Integrated Solutions' executive director, also alluded to an industry in maintenance rather than growth: "During the economic downturn, although companies did not invest in acquiring new IT infrastructure during the crisis, they still had to maintain the IT infrastructures already installed." However, Tese was one of many interviewed who see the tide turning: "We are now in a space where we are seeing light at the end of the tunnel. The government is taking all the right steps to resolve the issues, and things are moving in a positive direction and should keep on creating an enabling environment so that the private sector can flourish."

Political reforms stimulate exploration as hope returns

A reduction in exploration spending from US$7 billion in 2013 to the current level of US$2 billion illustrates the depth of Angola's crash, but these figures are also indicative of the global market trend. Indeed, the world's two largest oil producers, the United States and Russia, have built and maintained their industries through non-stop drilling regardless of macro-conditions.

Despite the drop in exploration spending, the mood at the first annual Angola Oil and Gas conference in June 2019 was upbeat, with Stephen Willis, regional president of BP Angola, observing that Angola's success rate is over 50%, against a global average of 30%. Citing governmental reforms enacted in the previous two years, Willis suggested that the revitalization of the contractual and governmental framework will show up in the form of increased market activity, as the result of a purpose-driven government focused on restoring investors' trust. "What the Angolan government has done over the past years is nothing short of a revolution," he declared.

In an effort to stimulate a depressed oil and gas sector, six presidential task forces were created in 2018 to address the most pressing industry issues, as an open dialogue between government and key industry players brought about

> "Angola has four interior basins, major regional areas which needed to be studied, considering the existing onshore activities have already produced significantly. There are still significant unexplored opportunities within the onshore/shallow water space, especially for the smaller players."
>
> **- Carlos Amaral, CEO, ACREP Angola E&P Company**

Ricardo Aboud

Geomarket Director
Angola and Mozambique
Baker Hughes a GE Company (BHGE)

Which product lines are currently represented by BHGE in Angola?

BHGE became the first fullstream service company in the industry as the result of the merger between the former GE Oil & Gas and former Baker Hughes in July 2017. We have combined the two companies' portfolios, and BHGE's current portfolio ranges from assisting hydrocarbons leaving the reservoir until they reach a refinery or LNG plant. In Angola, we cover all our four product categories, which constitute BHGE's portfolio – oil field equipment (OFE), oil field services (OFS), turbo machinery and process solutions (TPS) and measurement and control (M&C). We provide a full range of services to the Angolan market including well construction, well production, pipeline services and ro-to-equipment for most of its FPSO's and ALNG (Angola LNG).

In relation to BHGE's sub-Saharan footprint, how important is Angola?

Angola and Nigeria are the most mature countries in which BHGE operates in sub-Saharan Africa. We have had the longest presence in these two countries, and we offer our entire range of services to both countries. Most of our customers in Angola are international oil companies (IOCs). Angola is second to Nigeria in terms of volume of operations and is the hub for others countries where we may have punctual activities, such as Namibia and Sao Tome, for example.

How does BHGE contribute to local content development?

There is no single formula for local content as this topic is dynamic, maturing with time. In general, sustainability is supported by four pillars. The first is footprint, as a company needs to establish itself in the country of operation. The second pillar is partnerships, especially with the supply chain community. This means that we need to engage the local supply chain community and try to prepare them towards an international market. The third element is community engagement, the fourth pillar being skills development. •

“

The main challenge for service companies is to be prepared for the startup of the huge projects planned. Local companies must be competitive in an international market. The operational costs in Angola affect the country’s competitiveness in the global market, but in terms of productivity, we have the same capacity and quality to compete with international counterparts.

**- Antonio Bravo Neto,
General Manager,
Petromar**

”

new legislation related to the exploration and development of gas, as well as streamlining approval procedures in what was an overly-bureaucratic business environment. The creation of the National Agency for Petroleum, Gas and Biofuels (ANPG), the publication of Executive Decree 157/19 for the exploration and exploitation of marginal fields and a new oil-licensing strategy until 2025 all point to a government willing to stand by its rhetoric. The ANPG has become the new national concessionaire, allowing Sonangol to focus on its core business of oil and gas E&P, development, refining, storage and distribution.

Aboud of BHGE noted the new government’s proactive approach to improve the investment ecosystem in the country: “The dialogue that has been implemented with the operators is effective, and the results are in line with the expectations of the IOCs operating in Angola,” he said, elaborating: “The accommodation on some fiscal and tax terms allows for operators to execute exploration in development blocks and commercialization of marginal fields, with a few successful discoveries already, which will soon be tied back to existing assets (subsea pipelines, FPSO’s…).”

Tangible evidence of the renewed vigor in Angola’s exploration sector has come from Italian operator Eni, on the back of two major discoveries since 2018 accounting for almost 2 billion barrels of oil, including the 2019 discovery of approximately 650 million barrels of oil from drilling of the Agogo 2 test well in Block 15/06. “Our recent discovery in Block 15/06 is a testament to the potential Angola has to yield world-class discoveries in the coming years,” stated Guido Brusco, as Eni’s executive vice-president addressed the audience at Angola Oil and Gas 2019.

Image courtesy of Eni

One of the Angolan E&P companies to have worked with both Eni and Chevron is ACREP Angola E&P Company, the 80% local company backed by 20% foreign capital established in 2004. Having reached milestones including a sixth exploration well for Block 4/05 and a third exploration well site at Cabinda North Onshore in 2019, Carlos Amaral, ACREP’s CEO, believes that increased exploration activities are a sign of things to come: “ACREP has a five-year plan with the goal to increase production fivefold,” he stated, suggesting that Angola’s four interior basins require additional exploration to stimulate growth in areas of historical production. “Angola should now start to give attention to onshore/shallow water activities as there are still a significant amount of unexplored opportunities within this space, especially for the smaller players in the industry,” reflected Amaral.

This sentiment was echoed by Alberto Mendes, president of Grupo Simples, who acknowledged the efforts made by the government to make more onshore blocks available as the cycle starts to turn, but encouraged a greater focus on areas of previous production: “We would like to see the emerging Angolan private sector take more risks on proven blocks rather than exploration blocks, and for this to happen, there needs to be cooperation between national companies and the government,” said Mendes, continuing: “The profits generated from proven oil blocks can aid in the development of infrastructure for the development of new blocks.”

In 2017, Grupo Simples reached the milestone of becoming the first Angolan oil operator in the United States, with operations in East Texas. Having previously secured operatorship for exploration and production rights in onshore Kwanza Basin Blocks KON-06 and KON-09, the cancellation of these blocks due to the downturn prompted the E&P division of Grupo Simples to explore options further afield: “We saw an opportunity in East Texas, and relocated resources that were prepared for onshore operations in Angola to the United States,” explained Mendes, affirming that profits made from the company’s three units - oil and gas, oil field services and E&P – would be invested into exploration and production in Angola as more opportunities come online.

Angola auctions nine blocks in the Namibe Basin

The restructuring of Angola’s oil and gas sector received further impetus as the Minister of Mineral Resources and Petroleum, H.E. Diamantino Azevedo, announced that nine oil blocks in the waters of the Namibe Basin were to be put up for auction in Q4 2019. Addressing a session of the ministry’s third advisory council in August, Minister Azevedo detailed that the auctioning of these nine blocks formed part of the awarding of oil concessions for 2019-2025, defined in the restructuring strategy of Angola’s oil sector, which includes the construction of new refineries and the development of a petrochemical hub.

Grupo Simples’ president, Alberto Mendes, is enthusiastic about the prospects of Angola’s basins and cited Eni’s success as a testimonial of their capacity: “Given the history and the characteristics of the basins, we believe that there is great potential,” he stated. Highlighting opportunities within the Namibe basin, Mendes spoke of how increased investment in the region would benefit a value chain beyond just the IOCs: “There is the potential to create economic ecosystems in new areas of the country, and we would like to be at the forefront of these developments.”

The development of the Namibe basin is also good news for Angola’s southern neighbor, Namibia, as approximately 80% of the Namibe population is based in the region around the frontier, with this part of Angola and the north of Namibia sharing a similar dialect and culture.

Banco BIC, the private bank with a specialized oil and gas department and the largest footprint in Angola (230 branches in 96 municipal regions), intends to capitalize on cross-border opportunities further south, according to executive director Hugo Silva Teles: “We believe that Banco BIC can help with the commerce and trade relationship with Namibia whilst helping the Angolan economy,” he explained, elaborating, “To do so successfully, we would like to expand our footprint across the country and would then establish a presence in the Namibe province.”

There are already a number of Angolan companies active in Namibia, such as ACREP Angola E&P, who signed a 70% WI and operatorship of Namibian Blocks 1718 and 1818 in 2011 and continue working there today, according to Carlos

Amaral. "ACREP also operates onshore in Namibia, and we aim to join another shallow water project in Angola during 2019, where we will be partnering with two of the major players in the industry," he confirmed.

Security, Forex and the need for further investment

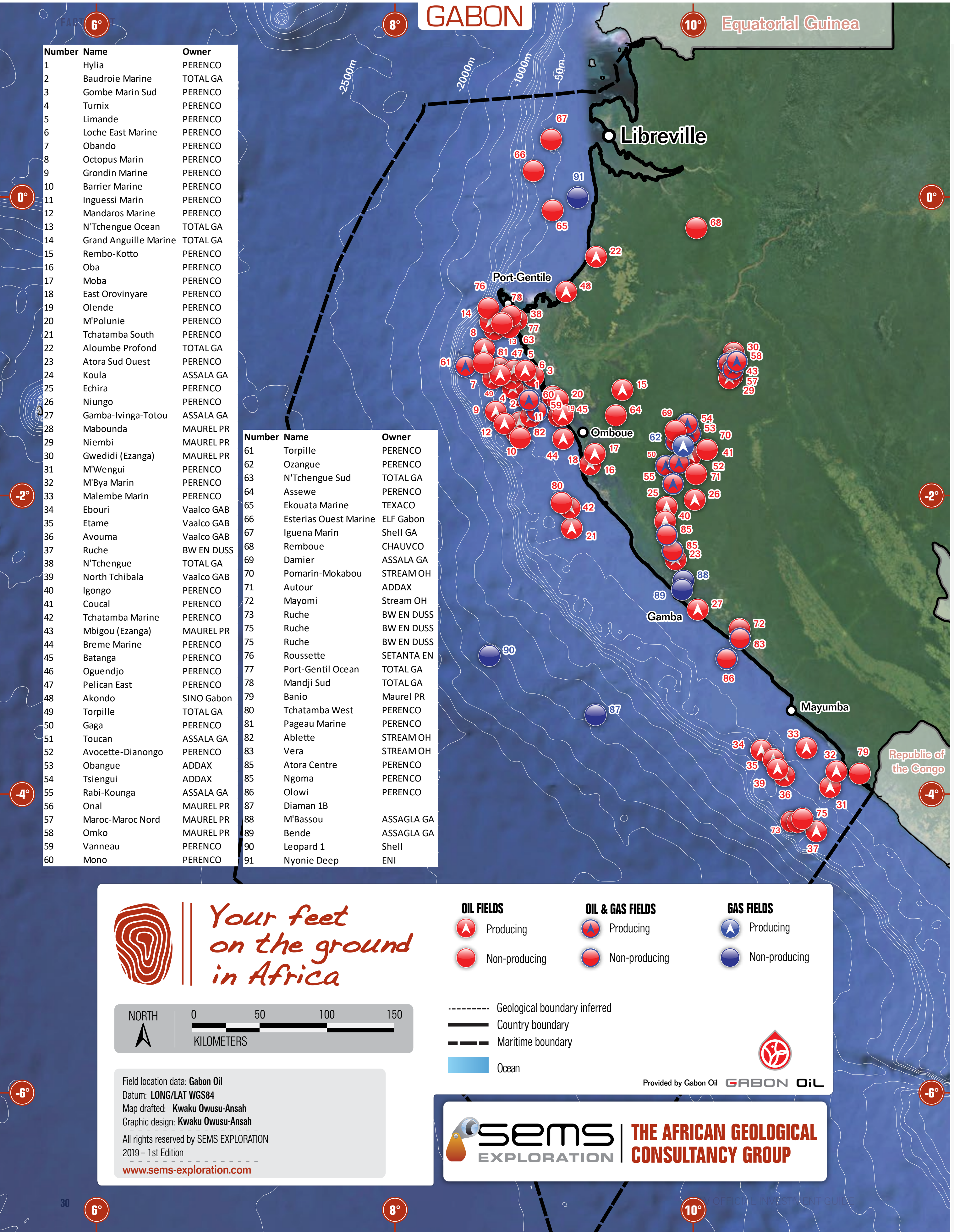
While the noise coming from IOCs active in Angola seems to indicate cautious optimism, and the general consensus from businesses across the board is that the new government is fostering a more transparent, investor-friendly environment, hurdles remain in Angola's path to economic recovery.
One such concern is a reported increase in the crime rate from 2017 to 2019. However, this may be more than a symptom of sustained economic hardship. An Angolan media free from the shackles of censorship may be playing a key role, according to David Russell, managing director in Angola for international security firm G4S: "In my opinion, Angola has not become as dangerous in the past two years as the statistics portray, rather, the flow of information to the media has been more open and transparent since João Lourenço took power in 2017, and crimes that had previously gone unreported started appearing in the mainstream news." Russell went on to give the example of how G4S Angola had installed 50 alarm and monitoring systems in houses over the past 12 months, despite having never previously worked in the monitoring segment of security, as evidence for how perception has affected market dynamics.
In the depths of the downturn, Angola's banks faced a liquidity crunch due to a shortage of foreign currency, with crude oil at US$55 per barrel in January – down from over US$100 in mid-2014 – and 95% of Angola's exports coming from the oil and gas industry. Although the foreign exchange market (Forex) situation has improved in the last 18 months, the current commercial rate of 375 kwanzas to the dollar compared to a street rate of over 500 kwanzas to the dollar illustrates the continued instability of the Angolan currency.
In an effort to have more control over funds and the allocation of foreign currency, the government introduced regulation that obligates operators to make deposits into the Central Bank, which then allocates required funds to the commercial banks when there is a request from the service provider. "While commercial banks usually take 48 hours to receive and process funds from operators, the Central Bank has a process of almost 60 days. This is a challenge for service providers due to currency devaluation, and margins can thus be crushed," explained Hugo Silva Teles, executive director of Banco BIC, who noted that it is advisable for service providers to get their kwanza indexed on a fixed deposit to avoid being as affected by devaluation.
Complications in receiving payments have been compounded by a lack of financing for new equipment, according to Ricardo do Amaral, general manager of Octomar, which is part of the Association of Service Providers of the Angolan Oil and Gas Industry (AECIPA). One of the issues being raised by AECIPA's members is limited access to local funds. "We would like to see financial institutions facilitating local companies with loans to buy assets for their operations. Service providers in the oil industry would also like to see longer term contracts being signed, which will also allow for companies to obtain financial support more easily," suggested Amaral.
In spite of the financial challenges facing Angolan service companies, a silver lining can be drawn from the experience of the downturn. "I believe that the oil and gas industry taught and brought up a professional elite of Angolans," reflected David Russell, managing director of G4S. "The expats left, and the Angolans took higher jobs. Today, you can hire locally and be assured that you are hiring talent, skill and knowledge," he concluded. With exploration picking up and the clouds of economic turmoil beginning to dissipate, a mature Angolan oil sector can learn from the lean times to make hay as conditions improve. •

Image courtesy of Gabon Oil

GABON

"With the new Hydrocarbon Code, Gabon has introduced longer exploration periods, more relaxed economic and fiscal terms, and generally more flexibility in the execution of contracts."

- Patrichi Tanasa, Managing Director, Gabon Oil



Number	Name	Owner
1	Hylia	PERENCO
2	Baudroie Marine	TOTAL GA
3	Gombe Marin Sud	PERENCO
4	Turnix	PERENCO
5	Limande	PERENCO
6	Loche East Marine	PERENCO
7	Obando	PERENCO
8	Octopus Marin	PERENCO
9	Grondin Marine	PERENCO
10	Barrier Marine	PERENCO
11	Inguessi Marin	PERENCO
12	Mandaros Marine	PERENCO
13	N'Tchengue Ocean	TOTAL GA
14	Grand Anguille Marine	TOTAL GA
15	Rembo-Kotto	PERENCO
16	Oba	PERENCO
17	Moba	PERENCO
18	East Orovinyare	PERENCO
19	Olende	PERENCO
20	M'Polunie	PERENCO
21	Tchatamba South	PERENCO
22	Aloumbe Profond	TOTAL GA
23	Atora Sud Ouest	PERENCO
24	Koula	ASSALA GA
25	Echira	PERENCO
26	Niungo	PERENCO
27	Gamba-Ivinga-Totou	ASSALA GA
28	Mabounda	MAUREL PR
29	Niembi	MAUREL PR
30	Gwedidi (Ezanga)	MAUREL PR
31	M'Wengui	PERENCO
32	M'Bya Marin	PERENCO
33	Malembe Marin	PERENCO
34	Ebouri	Vaalco GAB
35	Etame	Vaalco GAB
36	Avouma	Vaalco GAB
37	Ruche	BW EN DUSS
38	N'Tchengue	TOTAL GA
39	North Tchibala	Vaalco GAB
40	Igongo	PERENCO
41	Coucal	PERENCO
42	Tchatamba Marine	PERENCO
43	Mbigou (Ezanga)	MAUREL PR
44	Breme Marine	PERENCO
45	Batanga	PERENCO
46	Oguendjo	PERENCO
47	Pelican East	PERENCO
48	Akondo	SINO Gabon
49	Torpille	TOTAL GA
50	Gaga	PERENCO
51	Toucan	ASSALA GA
52	Avocette-Dianongo	PERENCO
53	Obangue	ADDAX
54	Tsiengui	ADDAX
55	Rabi-Kounga	ASSALA GA
56	Onal	MAUREL PR
57	Maroc-Maroc Nord	MAUREL PR
58	Omko	MAUREL PR
59	Vanneau	PERENCO
60	Mono	PERENCO

Number	Name	Owner
61	Torpille	PERENCO
62	Ozangue	PERENCO
63	N'Tchengue Sud	TOTAL GA
64	Assewe	PERENCO
65	Ekouata Marine	TEXACO
66	Esterias Ouest Marine	ELF Gabon
67	Iguena Marin	Shell GA
68	Remboue	CHAUVCO
69	Damier	ASSALA GA
70	Pomarin-Mokabou	STREAM OH
71	Autour	ADDAX
72	Mayomi	Stream OH
73	Ruche	BW EN DUSS
75	Ruche	BW EN DUSS
75	Ruche	BW EN DUSS
76	Roussette	SETANTA EN
77	Port-Gentil Ocean	TOTAL GA
78	Mandji Sud	TOTAL GA
79	Banio	Maurel PR
80	Tchatamba West	PERENCO
81	Pageau Marine	PERENCO
82	Ablette	STREAM OH
83	Vera	STREAM OH
85	Atora Centre	PERENCO
85	Ngoma	PERENCO
86	Olowi	PERENCO
87	Diaman 1B	
88	M'Bassou	ASSAGLA GA
89	Bende	ASSAGLA GA
90	Leopard 1	Shell
91	Nyonie Deep	ENI

GABON

CAPITAL
Libreville

LAND MASS
257,667km2

POPULATION SIZE (as of 1 july 2019)
2,172,579

POPULATION GROWTH (annual growth from 1 july 2018 to 1 july 2019)
2.50%

OFFICIAL LANGUAGES
French

HEAD OF STATE (as of 3rd october 2019)
President Ali Bongo Ondimba

HUMAN DEVELOPMENT INDEX (2018 REPORT) (out of 189 countries)
0.702 (high) / 110th

EXTREME POVERTY RATES (income of less than $1.90 a day)
33.4% (2017)

DEMOCRACY INDEX RANKING 2018 (out of 167)
124th

ECONOMIC FREEDOM (out of 180)
118th / Mostly Unfree

EASE OF DOING BUSINESS RANKING (out of 190)
169th

MAIN EXPORT ITEMS
Crude oil, timber, manganese, uranium

TOP 3 EXPORT DESTINATIONS
China (42%), Australia (8.3%), Indonesia (6.6%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$8,297 / 75th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$18,496 / 71st
IMF 2018

GDP growth
(PPP growth 2018)
2.10%
World Economics 2018

Public Debt as % of GDP
42.80%
CIA

Inflation Rate Forecast Q4 2019
9.40%
Trading Economics 2019

Value of Exports
(millions)
$6,510
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$4,218
OPEC 2018 / OEC 2018

Current Acount Balance
(millions - as of July 2019)
$39.1
Trading Economics 2019

Production Levels
(barrels per day)
210,820
U.S Energy Information Administration (EIA)

Africa Production Rankings
5th
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
106,528
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
2,000
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
28.2
EIA 2018

Marketed production of natural gas
(million cubic metres)
529.9
OPEC 2018

Refinery capacity (1,000 bpd)
24
OPEC 2018

Standard Corporate Tax
30%
Deloitte (November 2018)

Royalties
20%
Deloitte (November 2018)

Gabon

New legislation and an offshore round to raise investor interest

It was 1928 when, as one of four territories of French Equatorial Africa, Gabon saw the start of its oil activities. Raphaël Antonetti, then governor-general, entrusted a geological engineer from the University of Strasbourg with a study of bituminous seeps. A few decades later, in the 1950s, the French Equatorial Africa Oil Society (SPAEF) put four deposits into production: Ozouri, Pointe Clairette, M'Béga and Lopez South.

When Gabon became an independent country in 1960, the E&P activity in the industry continued, with 12 additional deposits put into production by 1966 and 26 discoveries by Elf between 1974 and 1984. In 1985, the discovery of the large Rabi-Kounga field in the Ogooué-Maritime Province, which was developed by Shell, was a significant milestone that allowed the country to significantly increase its production.

The new century witnessed further growth and the peak was 2007, when average production reached around 370,000 barrels per day (bpd), a very meaningful figure for a country of just 2 million people. However, shortly after output started to decline and, according to OPEC data, Gabon's oil production was just 193,400 bpd in 2018.

This declining production trend that continued for around a decade has prompted officials to act, especially after the Hydrocarbon Code of 2014 failed to attract much-needed investment. The Gabonese authorities had failed to predict the sharp fall in the oil price, so that the fiscal and state-participation requirements of that piece of legislation became unattractive for oil operators.

The experience of the last five years has finally led Gabon to enact a new Hydrocarbon Code, promulgated in July 2019, in parallel to the ongoing process of the 12th Offshore Licensing Round by the Gabon government, currently led by minister Noël Mboumba, in office since June 2019. Patrichi Tanasa, managing director of state-owned Gabon Oil, commented on the new legislation: "With this new code, the Gabonese state has introduced longer exploration periods, more relaxed economic and fiscal terms, and generally more flexibility in the execution of contracts."

In terms of the legal aspects that rule the contracts, the government has introduced an 'Exploitation Agreement' to replace the simple exploration contracts, with the idea of promoting the development of the more marginal or mature fields which are not always economically viable under the classic production-sharing agreements.

Other aspects include the elimination of corporate tax (from 35% in the previous code), and a reduction of certain minimums in terms of royalty, profit-sharing and the Gabonese state carried interest participation. While final terms are biddable, the minimum royalty is reduced from 9% to 5% for deep water blocks, and the State's minimum participation has been reduced from 20% to 10%. Also, under the new law, exploration and appraisal (E&A) costs and capex can be fully recovered by investors free of tax. The 2019 Hydrocarbon Code also establishes the exemption from capital gains tax on the sale of oil interests during the first phase of exploration.

"The recovery limit for oil costs has been revised upwards to allow investors to recover their investment quickly," added Tanasa.

However, considering the country has only had three presidents during the six-decade period since independence, it is reasonable to understand investor cautiousness. Indeed, as of today, serious questions regarding president Ali Bongo Ondimba's health are of concern following a heart attack during a visit to Saudi Arabia in October 2018.

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"I believe that Gabon is set for a new phase of growth within the oil business. As the market stabilizes, and with correct governance, we expect to see steady long-term growth in activity, especially in the offshore sector."

- Anthony Papalia, Director, Africa Oilwell Technology

Patrichi Tanasa

Managing Director
Gabon Oil

How has Gabon's oil and gas industry evolved over the last couple of decades?

In 1997, the country's oil production reached a record high of around 135 million barrels of oil, which placed Gabon as the third largest oil producer in sub-Saharan Africa, after Nigeria and Angola. But two years later, production began to fall, and by 2007 it was only 89 million barrels. So, it became necessary to renew exploration efforts. At this point, the main operators in the sector were Total Gabon, the country's leading producer, Shell and Perenco. Marathon, Vaalco, Addax and others set up a little later, taking over some of the assets from the large companies. Following these developments, we have also seen Indian, Australian and South African operators here.

What are the opportunities of Gabon's 12th Round, and what results do you expect from the process?

We launched the 12th Licensing Round in Cape Town, South Africa, with a solid argument in terms of attractiveness, thanks to the terms established in our new Hydrocarbon Code. To date, 75% of the Gabonese sedimentary basin is occupied for onshore activities, 45% to 55% in offshore and only 15% in deep and very deep offshore. The low level of exploitation in offshore, and especially in deep and very deep offshore, is a consequence of the rigidity of the old Hydrocarbon Code, of 2014. To remedy this situation, we proceeded to implement innovative terms in the new Code, and at the end of the 12th Round launch, there was big interest by oil companies to obtain exploration permits. By increasing the number of companies carrying out exploration, we will increase the chances of discovering new deposits.

How does Gabon Oil help boost local content in the country?

Our workforce is 100% Gabonese. Our goal is to give employment opportunities to nationals, a large percentage of which to the youth, whose profiles meet the competitiveness requirements that we face. Also, we plan to organize an open day in 2020 for students, entrepreneurs and other interested parties. As the national operator and the first indigenous business, we want to support national junior companies to develop. To do this, we plan to open some of our assets, especially marginal fields, to these companies.

Moreover, the economic benefits of our activities contribute to the development of the Gabonese economy. We make sure that the communities that revolve around our operations reap a share of revenues. In this sense, we position ourselves as a partner of the State in the implementation of programs targeting sections of our population. Gabon Oil Group has repaired orphanages and learning centers, like the Ibékelia re-education center, for instance. Also, we are working together with the National Employment Office (ONE) to implement the Young Apprentice Contract program (CAJ) whereby we receive young apprentices to fight unemployment among the youth.

How have oil exporters adapted to oil prices in recent years, and what is the current vision of OPEC members?

In 2018, OPEC member countries decided to reduce production by 1.2 million bpd starting January 2019, with the objective of pushing prices up. After a fall of 40% in the oil price between 2014 and 2019, it was important for the OPEC economies to design strategies that could bring the price per barrel above the US$70 mark, something that unfortunately has not been achieved. This means that we need to make further adjustments. So, it was agreed that production reductions will be extended until March 2020, but we will probably have to think about other complementary options as well.

We know that demand for OPEC oil is expected to decrease by 1.2 million bpd in 2020, compared to 29.40 million bpd this year. Also, the increase in oil demand next year should be lower than the growth of the supply of competing producers, like the United States. OPEC's overall supply will be 340,000 bpd higher than the demand, if we continue to produce at the level recorded in August 2019. I think that there is a shared responsibility that all producer countries, including those that are not members of OPEC, have to shoulder together to ensure the stability of the oil market and avoid its imbalance. •

"OPEC's overall supply will be 340,000 bpd higher than the demand. There is a shared responsibility that all producer countries have to shoulder together to ensure the stability of the oil market and avoid its imbalance."

Image courtesy of Total

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After a failed military coup in January 2019, in September official sources denied that Mr Ondimba's health condition had deteriorated and insisted that his recent visit to a London hospital was a routine medical trip.

Changes of ministers within the government have also caused delays to the closing of the 12th Round, currently scheduled for January 2020. The Round includes 12 shallow water and 23 deepwater blocks, and the government expects that the terms of the new code, together with the country's geological potential (Gabon has estimated proven reserves of 2.5 billion barrels), will help attract fresh money into the sector, allowing production to increase again.

The new code seemed to have obtained the desired effect when in August 2019, not even three weeks after the publication of the new legislation, Petronas signed an offshore deal with the Gabonese authorities for blocks F12 (Yitu) and F13 (Mebun). The Malaysian state-oil company thus became the first entity to sign an exploration and production contract in the country in five years. Back in 2014, Petronas had signed a deal for block F14 (Likuale), where the company made a discovery.

Tanasa of Gabon Oil highlighted that oil represents 51% of Gabon's GDP and 85% of the country's exports, and having new contracts signed to renew discoveries and production is of vital importance to the country: "The signing of contracts for the Yitu and Mebun fields by Petronas testifies to the new Hydrocarbon Code's attractiveness. With these contracts, Gabon has embarked on an expansion of its oil sector, particularly offshore. Following Petronas, we think that many other operators will come to see for themselves."

A general revitalization of the oil sector in Africa, not just in Gabon, is also offering opportunities to different providers involved across the value chain; those who are better positioned are those that managed to maintain healthy relationships with the operators during the downturn. Anthony Papalia, director of Africa Oilwell Technology, a services company with operations around Africa, said: "I believe that Gabon is set for a new phase of growth within the oil business. As the market stabilizes and with correct governance we expect to see steady long-term growth in activity, especially in the offshore sector."

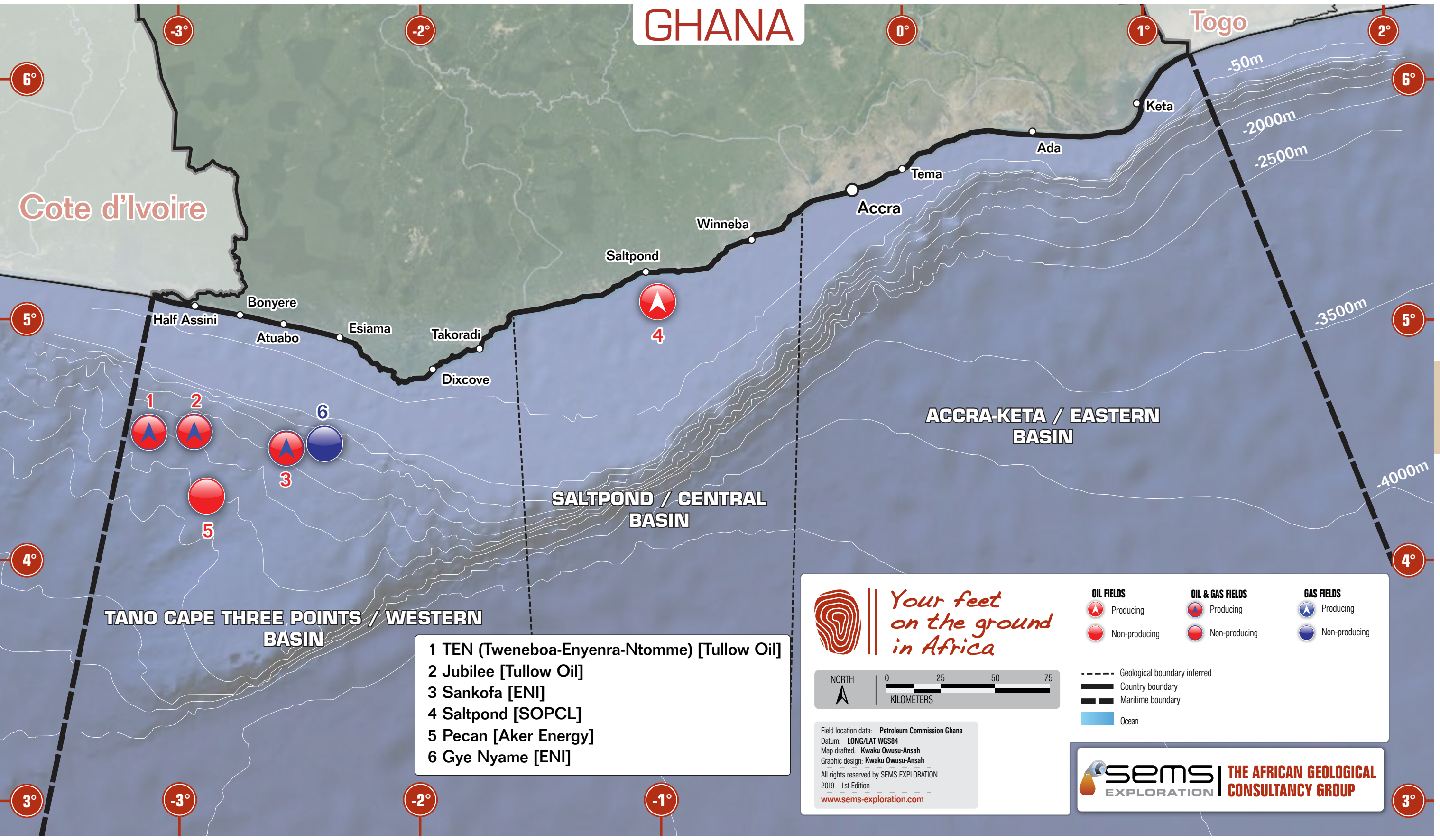
The entry barriers for companies that do not have the size of large multinational providers can be a challenge, said Papalia, citing an example of regulatory changes in Gabon: "Recently, the Gabonese government introduced a process to use third-party inspection on all equipment for a certificate of conformity before it arrives in country. This adds another step in the process which affects lead times," he said. "We are in a market where we always need to be flexible. A significant amount of the oil majors and small independents have adapted quite well. As service providers we need to be ready for fluctuations in the oil price and structure our operations accordingly." •

Image courtesy of Eni

GHANA

"Ghana was the first country on the African continent to gain independence and, since the implementation of democratic governance in 1992, Ghana has been a very stable environment, making it easy for multinationals and large investors to enter the country."

- Ibrahima Aminu,
Business Development Manager,
Invest in Africa



Ghana

A budding oil economy

Ghana has recently emerged as a regional power in West Africa. This has been possible due to its consistent ranking among Africa's most democratic countries – 4th behind Cape Verde, Botswana and Lesotho in the Economist Intelligence Unit's 2018 Democracy Index – as well as a rapidly growing economy. Q1 2019 saw GDP per capita growth of 6.7%, and economic growth is projected to be 7.6% for 2019, according to the World Bank. Whilst gold and cocoa have facilitated Ghana's economic growth historically, the discovery of oil, a decade ago, has now accelerated the country's ascent to become one of the fastest growing economies globally.

Opening to IOCs

Given that oil exploration started as far back as the 1800s in Ghana, the pace at which the country has gone from discovery in 2007, to being among the top 40 global producers of oil with far greater targets expected in the coming years, is testament to government legislation and a willingness to embrace foreign direct investment. "In 2007, we had the Jubilee discovery, followed by the Tweneboa, Enyenra, Ntomme (TEN) discovery, and more recently Eni's Sankofa discovery, which is already in production," underlined Benjamin Asante, director of petroleum, upstream at Ghana's Ministry of Energy.

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> The advantage is that when comparing Ghana to other African countries, Ghana is an extremely peaceful place. The working environment is good and stable, and there are still countless opportunities. For investors looking to come to Africa, Ghana is one of the best countries to look at.
>
> - Dan Ohene, Principal Partner, Sections Limited

Benjamin Asante

Director of Petroleum - Upstream, Ministry of Energy
Government of Ghana

How has the country's oil and gas industry evolved in recent years?
We have come quite far as a country. First exploration activities started in the 1800s on the onshore basins of the Western Region. A few small discoveries were made, and in 1970, we made the first commercial discovery at the Saltpond field, which produced about 4,800 barrels per day (bpd) at some point before dwindling to about 480 barrels in 1985. The field was shut-in, and it is now at the decommissioning stage. Then, in 2007 we had the Jubilee discovery, followed by the Tweneboa, Enyenra, Ntomme (TEN) discovery, and more recently Eni's Sankofa discovery, which is already in production. Other discoveries have been made by Hess, which has now been taken over by Aker Energy, and other companies are coming in now as well. Although we are still a net importer of petroleum products, Ghana is now an oil producing country. We are producing just over 200,000 bpd, and we hope that when the Aker Energy field comes online, we will grow to 500,000 bpd.

What have been the most important regulatory changes to occur over the last few years?
Since we made these discoveries, we have reviewed our oil and gas laws and regulations. The Act 919 was promulgated in 2016, and we also have the Petroleum Revenue Management Act to control how the revenues from oil production are used. In addition, we have local content regulation. The Petroleum Commission as the regulator for the upstream petroleum industry was also set up by an Act of Parliament. Although the oil industry is not a big employer, we can provide ancillary jobs to the Ghanaians involved while at the same time managing the expectations of the people in terms of oil industry development.
Additionally, no company can go into exploration without associating with the state company GNPC. They have at least a 15% participation (carried interest) in every block covered by a Petroleum Agreement.

Do you think Ghana positions itself as an attractive country for investors?
We are an investment-friendly country with good people to work with, and in recent years we have developed a more attractive legal and regulatory framework for the oil business. Last year we did the licensing round for the first time, and many companies showed interest. We are reviewing and synchronizing all our laws and regulations in a process together with the participation of the investors. We have de-risked business opportunities dramatically, and this has attracted many companies such as Tullow, Kosmos and ExxonMobil, and CNOOC and BP are also showing interest.

Speaking of local content, will Ghana be able to do its own FPSOs?
We have a drydock in Ghana that is now being used for repairs occasionally and which could potentially take care of FPSO fabrication. This is still at a conceptual stage, with the drydock already in existence – it needs some refurbishment and investment for Ghana to have its own shipbuilding capacity. Some companies are already showing interest to develop this facility.

> Even if we do not have refineries locally to make the sector more efficient, we will be an important producer. Whether we become an oil economy or not depends on how we utilize the revenues from the industry.

What is the potential for further gas development?
There is excellent gas potential in Ghana. Eni is already producing gas, and also the Jubilee and TEN fields have gas production. At TEN and Jubilee, the gas-oil ratio is about 1 to 1,000, and after processing the gas we are using the LPG for different applications like cooking and the dry gas for power.

Looking ahead to the future, what are the key prospects for Ghana?
Once we reach 500,000 bpd, we can start talking about an oil economy. Even if we do not have refineries locally to make the sector more efficient, we will be an important producer. Whether we become an oil economy or not depends on how we utilize the revenues from the industry. There are also other industries to be developed including agriculture and mining, and with half a million barrels per day, we will have a reasonable level to support the rest of the economy. •

GHANA

CAPITAL
Accra

LAND MASS
227,533km2

POPULATION SIZE (as of 1 july 2019)
28,833,629

POPULATION GROWTH (annual growth from 1 july 2018 to 1 july 2019)
2.20%

OFFICIAL LANGUAGES
English

HEAD OF STATE (as of 3rd october 2019)
President Nana Akufo-Addo

HUMAN DEVELOPMENT INDEX (2018 REPORT) (out of 189 countries)
0.592 (medium) / 140th

EXTREME POVERTY RATES (income of less than $1.90 a day)
23.4% (2016)

DEMOCRACY INDEX RANKING 2018 (out of 167)
57th

ECONOMIC FREEDOM (out of 180)
109th / Mostly Unfree

EASE OF DOING BUSINESS RANKING (out of 190)
114th

MAIN EXPORT ITEMS
Gold, cocoa, timber, tuna, bauxite, aluminium, manganese ore, diamonds

TOP 3 EXPORT DESTINATIONS
India (30%), Switzerland (11%), China (11%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$2,206 / 136th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$6,452 / 128th
IMF 2018

GDP growth
(PPP growth 2018)
3.40%
World Economics 2018

Public Debt as % of GDP
76.80%
CIA

Inflation Rate Forecast Q4 2019
9.40%
Trading Economics 2019

Value of Exports
(millions)
$17,100
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$2,970
OPEC 2018 / OEC 2018

Current Acount Balance
(millions - as of July 2019)
$39.1
Trading Economics 2019

Production Levels
(barrels per day)
195,000
Trading Economics - June 2019

Africa Production Rankings
8th
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
3,564
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
700
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
22.7
EIA 2018

Marketed production of natural gas
(million cubic metres)
50
OPEC 2018

Refinery capacity (1,000 bpd)
-
OPEC 2018

Standard Corporate Tax
25%
Deloitte (November 2018)

Royalties
15%
Deloitte (November 2018)

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"Other discoveries have been made by Hess, which has now been taken over by Aker Energy. Other companies are coming in now, and although we are still a net importer of petroleum products, Ghana is now an oil producing country. We are producing just over 200,000 bpd, and we hope that when the Aker Energy field comes online, we will grow to 500,000 bpd."

A clear catalyst for these discoveries was the Ghanaian government's decision to sell the rights for exploration, development and production of different offshore blocks in 2004. This offered the opportunity for IOCs to explore, especially in the Deepwater Tano Block, West Cape Three Points and Jubilee Field. For example, Tullow Oil was appointed Jubilee Field Operator in October 2008, and following a successful development programme, achieved its first oil production just two years later. This led to its subsequent discoveries and developments in the TEN field. Rapid development has been made since then by a handful of IOCs, including Aker Energy. In March 2019, Aker submitted a US$4.4 billion Integrated Plan of Development Operations to Ghanaian authorities for the Deepwater Tano Block-West Cape Three Points Block – which may produce 600,000 to 1 million bpd – and

> "The Maersk Viking water drill ship drilled the Pecan-4A appraisal well offshore Ghana, then three additional wells in the Pecan field and two exploration wells in the AGM block just south of the Pecan field. The latter were drilled at over 3,000 m water depth, including Nyankom-1X at the second-deepest water depth ever drilled offshore Africa."

- Morten Kelstrup,
Chief Commercial and Innovation Officer,
Maersk Drilling

Jan Arve Haugan

CEO
Aker Energy

You acquired the Pecan block from Hess in February 2018. Can you tell us more about Aker's investment plan at Pecan?

Aker Energy acquired the DWT/CTP block at a point in time when commercial viability was doubtful, but we looked at it as an opportunity. As of today, we have drilled three more appraisal wells in the area and matured the field towards a submission of the Plan of Development and Operations (PDO) this spring. We have increased estimations of the recoverable resources 1.5 times and boosted the recovery factor at the Pecan block from 24% to 31% by optimising the development plan. We believe our approach can substantially increase value in the Greater Pecan Area by exploring smaller targets and mature fields that would otherwise be stranded. We take pride in being a world leader in maximising recovery from oil fields and have the track record to prove it.

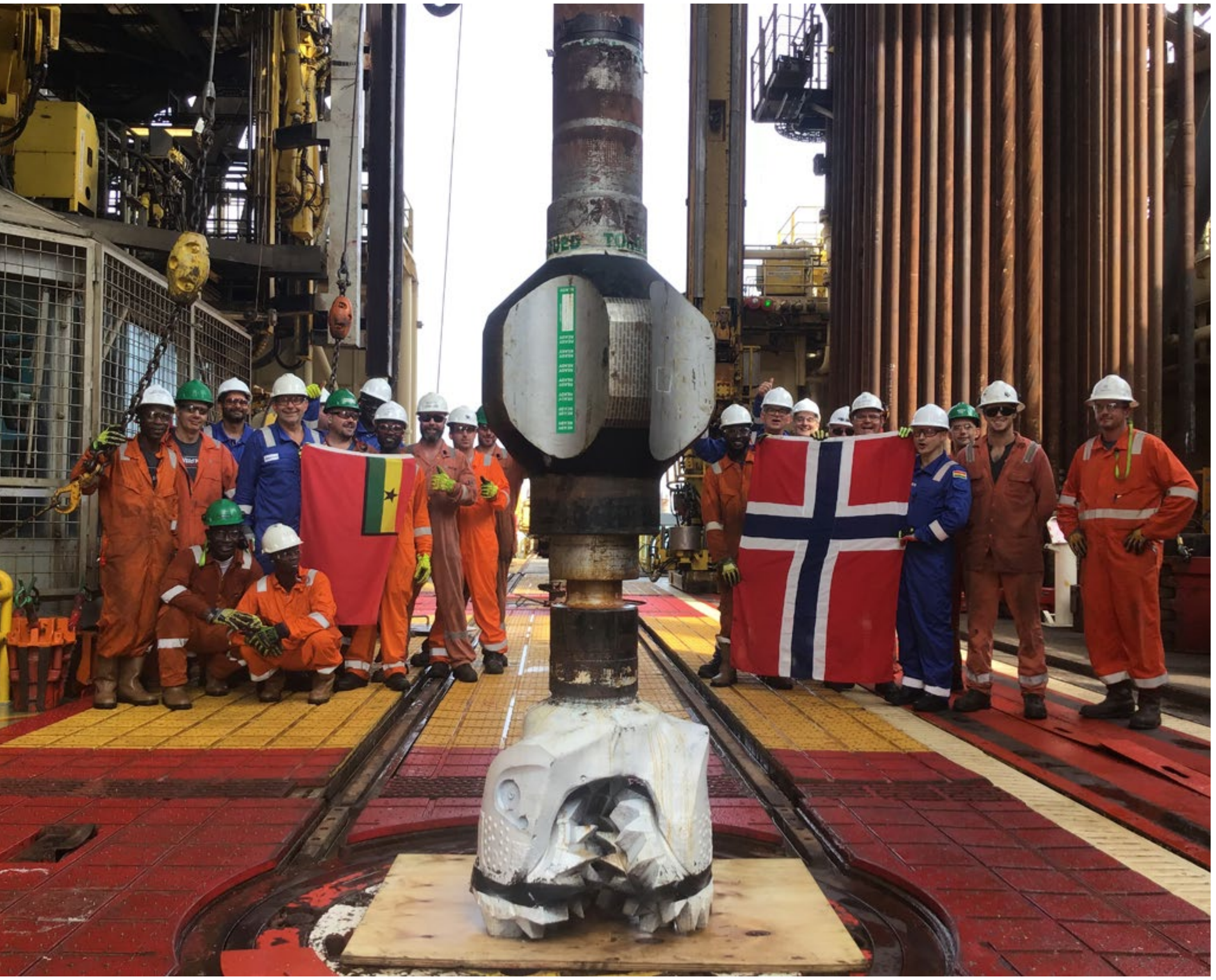
What is Aker Energy doing to fulfil Ghanaian local content requirements?

We have a long-term ambition to develop the local oil and gas industry, through both investments and transfer of technology, know-how and skills. We have already begun the process with a programme of secondment from the Ghanaian Petroleum Commission and GNPC in place. We expect the Pecan field to provide significant proceeds to Ghana and are committed to creating substantial investments and jobs in the country. After all, we ourselves, as a major Norwegian company in oil and gas are products of local content policies in Norway, so we know how important this is.

Technology is crucial when operating in such deep waters. How are you planning to develop the field?

The main Pecan field is one of the deepest fields in the world, located in ultra-deep waters ranging from 2,400 to 2,700 metres deep, about 115 kilometres offshore Ghana. This means that we are in the country for the long run. We are working on a tight timeline, which makes it even more important that we are running the most advanced technological solutions at optimal performance. This is one of the reasons why we are building on the expertise of the wider Aker group, such as Aker BP's operations on the Norwegian Continental Shelf, Aker Solutions' unparalleled deep-water expertise, and Cognite's unique way of digitising oil and gas operations. •

Image courtesy of Aker Energy



"There is significant opportunity within the oil and gas industry, and in the years to come, Ghana will definitely be the place to do business – especially with the discovery of oil in commercial quantities by Aker Energy, as well as the Voltaian basin onshore oil discovery. These developments are clear indicators that there is going to be a lot of activity in the upstream and downstream oil and gas sector, which is going to boost the economy and also create a significant increase in job opportunities.

- Carl Brogya-Sarpong,
CEO,
Brogya Resources LTD

the company has continued to pursue investment opportunities in Ghana. "Aker Energy has its sole focus on developing oil and gas resources offshore Ghana," highlighted Jan Arve Haugan, CEO of Aker Energy. "We are part of the Norwegian Aker group of companies, which is built on and has the backing of 175 years of industrial heritage. Since the first discoveries of oil on the Norwegian Continental Shelf in the 1960s, Aker has been a frontrunner in technology and industry development and instrumental in 80% of all oil and gas fields in Norway. This gives us a solid foundation in our endeavour to become the offshore oil and gas operator of choice in Ghana. We believe that our experience can contribute to turning opportunities offshore Ghana to income for Ghana, for instance by significantly increasing the recovery of oil from offshore developments by relying on our cumulative learnings."

Indeed, not only do IOCs bring in much needed investment into the region, but they also transfer knowledge and learnings from their respective countries that may have been developed over a century. These examples demonstrate the importance of Ghana's decision to sell off its offshore rights. It has been a clear springboard for the sector's rapid rise, and oil now contributes 10% to 12% towards Ghana's GDP. However, it is also clear that Ghana must keep moving forward with the development of its offshore assets as global investment moves towards natural gas exploration, shale gas and more importantly to renewable energy. When asked about the Ghanaian government's regulatory framework on oil, George Yaw Owusu, CEO of Mansa Engineering Company, underlined: "Major oil companies are strategically moving investments to places with huge reserves such as Guyana. Therefore, it is important that the Government of Ghana enacts policies that speed up oil discovery in the country. For instance, in Ghana's maiden licensing bid rounds, most companies that did not express interest cited the lack of comprehensive data and small size of oil blocks that were available for bidding as reasons."

Incorporating local partners

IOCs have brought an abundance of expertise and maturity into Ghana's oil and gas industry. However, incorporating the local workforce and companies has been a challenge due to their lack of direct experience with the commodity. "It is very difficult for major players to find the right local skills to partner with, and thus it makes it difficult for them to become an operator in Ghana," underlined Nana K. Aboagye Asesno-Okyere, CEO of Nyna Oil. "The local content laws should be made more dynamic and flexible. The good thing about the local content regulation is that only 10% is required to be owned by a local partner, which is not too excessive," he added

Although the figure may seem small, the low rate required by local content regulation will provide significant opportunities for the local industry to grow with IOCs. In time, local companies will be able to proceed without the support of international operators through acquired experience. In the more immediate future, local professional services and business advisory firms are finding opportunities in facilitating interaction between local stakeholders and international entrants by providing their expertise in the country's regulatory framework. Regina Ofori-Twumasi, managing consultant at Alfreg, an indigenous firm specialized in the provision of immigration, company registration and secretarial support services, commented: "Considering that the oil and gas industry is nascent in Ghana, we focus more on company registration, business set-up and compliance and provision of human resource assistance."

For more technical tenders, for now, collaboration will be key. "If a local business wants to pitch for a major oil contract, the best way to be successful is to establish a joint venture with a more seasoned company outside of Ghana," remarked Ibrahima Aminu, "In Ghana's maiden licensing bid rounds, most companies that did not express interest cited the lack of comprehensive data and small size of oil blocks available. The government should allow private data acquisition firms to undertake and produce high quality seismic data. We live in an era where data is very valuable to the oil companies."

- George Yaw Owusu, CEO, Mansa Engineering Company

business development manager at Invest in Africa. "The joint venture arrangement should be kept to a specific timeframe so that locals can take over in areas ranging from managerial and finance to engineering, logistics and production roles. Ghana's Petroleum Commission has been very good at implementing local content, and large players must be able to demonstrate a plan to transfer knowledge from expatriates to local suppliers," Aminu explained.

Whilst joint-venture agreements and content regulations will provide opportunities for locals, there are clear signs that international service providers and IOCs are making a concerted effort to hire and incorporate locals into their process. For example, Maersk Drilling – the Danish drilling rig operator – has recently entered Ghana and signed a contract in Q4 2018 with Aker Energy. As part of its Ghana strategy, Maersk is prioritizing the staffing of locals. "In all jurisdictions, one has to understand the local expectations and to work with local authorities to ensure that one complies with laws and regulations," remarked Morten Kelstrup, the company's chief commercial and innovation officer. "The company has a strong commitment to local content development and job creation, and we have been quite successful in Ghana. We employ local staff and support the training and education of this staff. We also procure locally as much as possible."

Ensuring the future: Overcoming political and infrastructure challenges

There is clear positivity in Ghana at the moment; however, there are significant challenges to surmount if the country is to achieve a position among global oil powerhouses. The most pressing concern is the extremely high costs within its energy sector. Unlike most of Africa, Ghana has faced problems of excess electricity, rather than a lack of it, in the past year. As a result of a number of factors, including inflated prices and corruption, Ghana may face annual excess gas capacity charges of between US$550 and US$850 million yearly by 2020. Reaching a point where there is more transparency between independent and public power producers will be of the utmost importance.

Similarly and like much of the West Africa region, the state of the country's transportation infrastructure could also be a deterrent to its potential in the oil and gas space. Soraya Anglow, executive director of Greenline Logistics, which offers a service portfolio in the logistics space including packaging and storing, custom clearance services and warehouse management, has a positive outlook on the government's motivation to improve road infrastructure to support the nation's growing industrial focus, and specifically its oil potential: "By refurbishing what the country already has in place, we will be able to support the influx of new companies into Ghana. The government is putting in the effort to support the growing oil industry, and there is a focus on infrastructure development and refurbishment where necessary," she commented.

Another key moment in the near future for Ghana will be the 2020 election and how much disruption the election cycle will bring. The Economist Intelligence Unit has predicted victory for the ruling New Patriotic Party, but as recent experience has revealed, one would be ill advised to bet on the status quo remaining. What is clear is that Ghana has a window of opportunity to become Africa's go-to oil destination. The right local content structure in place will also have a burgeoning effect on Ghana' society and help cement it as one of Africa's first middle-income countries. •

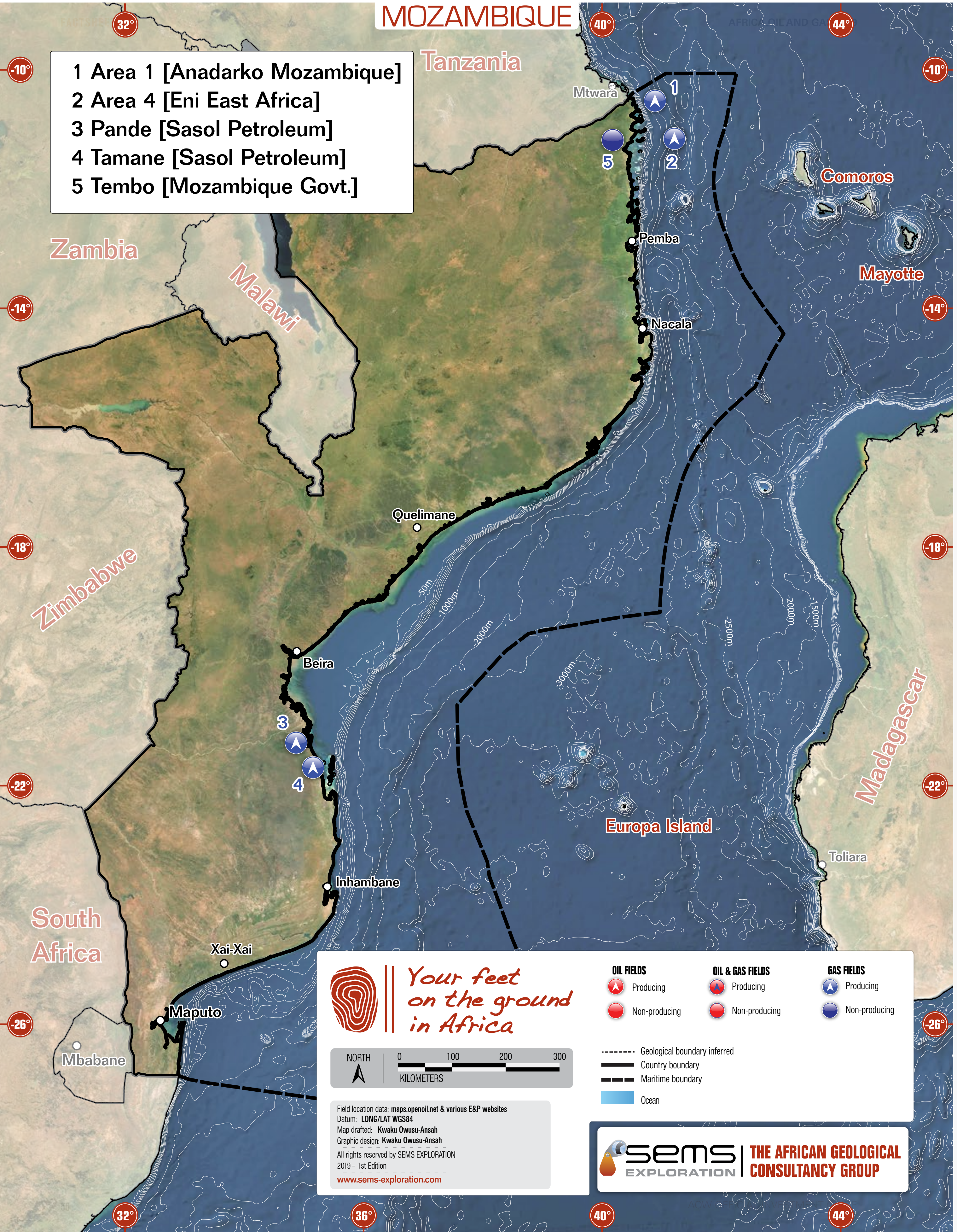
"Through refurbishing the infrastructure the country already has, we will be able to support the influx of new companies into Ghana. The government is setting itself up for the future and they are building an industrial city in the Western region of the country to service the oil industry and new oil companies entering the market."

- Soraya Anglow, CEO, Greenline Logistics

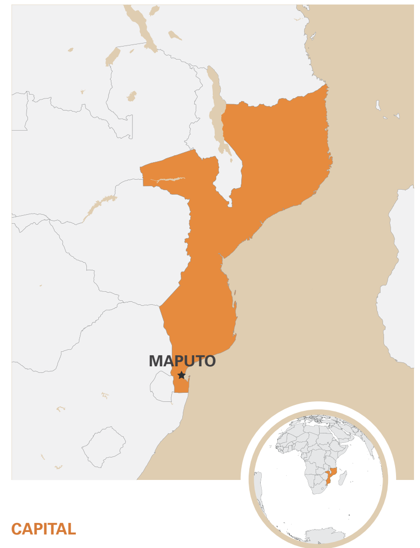
MOZAMBIQUE

"For a company to go deep offshore and spend billions of dollars, you need to create a friendly environment. Africa is not the only region supplying oil and gas to the world: Qatar is growing, there is also the U.S., Myanmar, Russia, Australia, etc. There are huge competitors in the marketplace, so the time to market is extremely important."

- Omar Mithá,
Chairman and CEO,
ENH



MOZAMBIQUE



CAPITAL
Maputo

LAND MASS
786,380km2

POPULATION SIZE (as of 1 july 2019)
30,366,036

POPULATION GROWTH
(annual growth from 1 july 2018 to 1 july 2019)
2.90%

OFFICIAL LANGUAGES
Portuguese

HEAD OF STATE (as of 3rd october 2019)
President Filipe Nyusi

HUMAN DEVELOPMENT INDEX (2018 REPORT)
(out of 189 countries)
0.437 (low) / 180th

EXTREME POVERTY RATES
(income of less than $1.90 a day)
62.4% (2014)

DEMOCRACY INDEX RANKING 2018 (out of 167)
116th

ECONOMIC FREEDOM (out of 180)
163rd / Repressed

EASE OF DOING BUSINESS RANKING (out of 190)
135th

MAIN EXPORT ITEMS
Seafood, cotton

TOP 3 EXPORT DESTINATIONS
India (35%), South Africa (14%), China (7.5%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$476 / 180th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$1,291 / 180th
IMF 2018

GDP growth
(PPP growth 2018)
3.80%
World Economics 2018

Public Debt as % of GDP
119.40%
CIA

Inflation Rate Forecast Q4 2019
2.00%
Trading Economics 2019

Value of Exports
(millions)
$6,500
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$411
OPEC 2018 / OEC 2018

Current Acount Balance
(millions - as of July 2019)
-$1,065.70
Trading Economics 2019

Production Levels
(barrels per day)
0
U.S Energy Information Administration (EIA)

Africa Production Rankings
-
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
0
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
-
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
2,832
EIA 2018

Marketed production of natural gas
(million cubic metres)
4,220
OPEC 2018

Refinery capacity (1,000 bpd)
-
OPEC 2018

Standard Corporate Tax
32%
Deloitte (November 2018)

Royalties
20%
Deloitte (November 2018)

Ernesto Max Tonela

Minister of Mineral Resources and Energy (MIREME)
Mozambique

What is the significance of Mozambique's natural gas findings for the country?
As part of the research activities carried out by Area 1 and 4 Concessionaires in the Rovuma Basin, huge oil deposits of non-associated natural gas were discovered, estimated at about 180 trillion cubic feet.
The findings are an important milestone not only because of the potential quantities of gas available, but also because of the possibility of developing and implementing various integrated projects, such as LNG, liquid fuels, electricity generation, fertilizers and others that will certainly put Mozambique as a reference country in the production and export of natural gas worldwide.

How does the government intend to develop these assets?
We are looking at the development of these assets with a long-term vision to ensure that the non-renewable natural resources are used in a rational and sustainable manner, so that they contribute first and foremost to Mozambique's socio-economic development and at the same time preserve the environment and ensure that future generations can benefit. The Government approved the Natural Gas Master Plan, which incorporates the basis for estimating the demand and supply of natural gas, the need for gas infrastructures and a plan for the implementation of associated infrastructure projects. It is within this framework that the Government approved the Development Plans for three LNG projects from platforms at sea and onshore.

> "We are looking at the development of these assets with a long-term vision to ensure that the non-renewable natural resources are used in a rational and sustainable manner, so that they contribute first and foremost to Mozambique's socio-economic development."

Can you provide details of the three main LNG projects at the heart of Mozambique's gas boom?
The first is the Floating Platform Liquefied Natural Gas Project to be developed by Eni and its partners, with the capacity to produce 3.4 million tonnes per year (mt/y), using resources from the isolated Coral Sul reservoir. This platform is currently being built and is expected to be completed by the end of 2021 and in Mozambican waters at the end of Q1 2022. Production and exploration of natural gas should occur by Q4 2022. The project involves an investment of US$8 billion and will generate direct profits of US$40.7 billion. The Mozambican state will raise US$19 billion over the lifetime of the project. Therefore, from 2022, about US$1 billion dollars per year will result from tax on oil production, IRPC and the sharing of oil.
The second LNG project is from an onshore platform in Palma by Anadarko and its partners, which consists of the development of an LNG plant of 12 million mt/y, two liquefaction units with a nominal capacity of 6 million mt/y, each to be developed by Anadarko in Area 1 of the Rovuma Basin. The project will amount to a total investment of about US$30 billion, and it is estimated that it will generate revenues of US$53 billion for the Mozambican state.
Thirdly, in May 2019, the Government approved the Rovuma LNG Project Development Plan for the construction of an LNG plant of 15.2 million mt/y, which expects to reach the final investment decision (FID) later this year, to be developed by Area 4 partners.

What is the current timeline for the Area 4 Development Plan for the Rovuma basin?
In May 2019, the Government approved the Area 4 Development Plan under the responsibility of a consortium made up of ExxonMobil, Eni and CNODC, with a production of around 15.2 million mt/y of LNG through two production modules with capacity of about 7.6 million mt/y each. The FID is expected to occur in 2019, and it is expected that the project will be operational five years after this. Mozambique will benefit from 500 million cubic feet per day of natural gas for the national market, which will be decisive for the industrialization of the country.

Do you have a final message for the audience of Africa Oil Week?
Mozambique's oil and gas sector is in the early stages of a transformational journey that will dramatically improve the country's economy and the socio-economic development of our nation. This is a long-term, sustainable vision that is being rigorously planned by all stakeholders. Collaboration between state, industry and the public is key to ensure that the benefit of this opportunity is fulfilled. •

Mozambique

The Rovuma Basin gas boom is set to transform a nation

2019 began in tragic fashion for Mozambique as the picturesque southeast African republic was ravaged by two tropical cyclones – Cyclone Idai in March followed by Cyclone Kenneth in April – destroying large parts of the city of Beira and the province of Cabo Delgado, killing over 600 people and displacing over 65,000 more.
Relief efforts in the form of international donations and the provision of aid from less affected areas of the country went some way to mitigate the damage. However, the bleak consequences of the natural disasters were laid out in a UNICEF humanitarian report from July 2019, which estimated that the sobering figure of 1.7 million people facing food insecurity is expected to increase to 2 million during the lean season in October 2019.
These natural disasters came on the back of a three-year financial downturn triggered by the US$2 billion "tuna bonds" scandal that plunged the country into its worst financial crisis since independence in 1975, and yet, the medium to long-term economic outlook for Mozambique has never looked so bright.
If natural disasters and economic turmoil do not sound like a recipe for hope, why then is the IMF predicting double-digit growth for Mozambique by 2023? The catalyst for this turnaround in fortunes lies in the country's gargantuan deposits of non-associated natural gas in the Rovuma Basin.
While the Rovuma Basin gas fields were discovered back in 2012, tangible evidence of their development arrived on June 18th 2019, as U.S. energy firm Anadarko took the Final In-

vestment Decision (FID) on the construction of a US$20 billion gas liquefaction and export terminal in Mozambique. The Anadarko-led Area 1 Mozambique LNG project is the largest direct foreign investment ever approved in Africa, with further gas-fueled riches expected on the horizon as a consortium led by Eni and ExxonMobil is set to announce the FID for the development of Area 4 of the Rovuma Basin in early 2020. The combined investments into Mozambique's gas sector are estimated to reach over US$50 billion and, when put into context with the country's GDP of US$14 billion, indicate transformational potential.

The first wave of serious investment in the Rovuma Basin actually took place in June 2017, when Italian oil and gas company Eni took a US$10-billion FID to construct the Coral South floating liquefied natural gas (FLNG) project – the world's first ultra-deep-water FLNG facility. With the Mozambique LNG (led by Anadarko) FID standing at US$20 billion and the Rovuma LNG (led by ExxonMobil and Eni) expected to reach US$30 billion, each investment has marked the largest of its kind in Africa.

In an interview with GBR, Ernesto Max Tonela, Minister of Mineral Resources and Energy, spoke of the significance of Mozambique's gas findings: "This will put Mozambique as a reference country in the production and export of natural gas worldwide," he declared, noting that the importance of the reserves goes beyond the potential quantities of gas available because of the possibility of developing and implementing integrated projects such as LNG, liquid fuels, electricity generation and fertilizers.

"Mozambique's oil and gas sector is in the early stages of a transformational journey that will dramatically improve the country's economy and the socioeconomic development of our nation. This is a long-term, sustainable vision, which is being rigorously planned by all stakeholders," concluded Minister Max Tonela.

Anadarko changes hands and ExxonMobil delays the Rovuma LNG FID

The old adage that suggests "you can't climb a mountain if it's smooth" could be applied to the development of Mozambique's Rovuma Basin gas reserves, as M&A activity in the wake of the Anadarko FID threatened to complicate progress of the Mozambique LNG project. After lengthy negotiations with Chevron, the acquisition of Anadarko was finally secured with a US$38 billion bid by Occidental Petroleum in May 2019 – the largest transaction in the oil and gas space in the last four years. In parallel to this, French energy giant Total announced that it had reached a binding agreement with Occidental to acquire Anadarko's assets in Africa (Algeria, Ghana, Mozambique, South Africa) for a consideration of US$8.8 billion.

For Omar Mithá, chairman and CEO of National Hydrocarbons Company (ENH), Mozambique's state-owned enterprise that represents the government's commercial interests in the oil and gas sector, the Anadarko/Occidental/Total transaction will not rock the boat: "The agreement signed makes it clear that whoever farms in or takes over Area 1 needs to respect the commitments already made. Nothing is going to delay the project, all approved expenditures and calendars will be followed as previously planned, so financial closure will happen next year."

This sentiment was also echoed by Ricardo Aboud, the Baker Hughes GE (BHGE) geomarket director for Angola and Mozambique, who commented that service contracts previously signed were not expected to undergo new bidding processes. Having already been involved in the exploration phases of both Area 4 and Area 1 of Rovuma Basin, BHGE has now been awarded contracts in Area 4 for Coral South. "We are expecting results of the onshore LNG plant tender from the selected consortium contracted by Anadarko in Area 1," said Aboud.

Another potential cause for concern was the news that ExxonMobil would delay their FID for the Rovuma LNG project in light of Mozambique's general elections on October 15th, in addition to lengthier-than-expected engineering and procurement decisions. However, the general consensus is that ExxonMobil's FID is imminent: "Our expectation is for a light final investment decision in October, and then a fully-fledged FID by April 2020 by ExxonMobil, that is the midstream operator, to build two large-scale trains with a capacity of 15.2 million tonnes per year (mt/y). The project is running very fast towards financial closing," stated Omar Mithá.

Mithá went on to underline Mozambique's position as a key exporter of premium LNG to markets such as Japan, South Korea and China in the forthcoming decade, with a landmark production of around 30 million mt/y: 3.3 milllion mt/y from the floating energy platform approved in 2017, 12.6 million mt/y from Total and 15.2 million mt/y from ExxonMobil.

The challenge of developing a new industry on an unprecedented scale

The government-approved Natural Gas Master Plan incorporates the bases for estimating the demand and supply of natural gas, the need for gas infrastructures and a plan for the implementation of associated infrastructure projects. Within this framework, the estimated state revenues from the three LNG projects are approximately US$1 billion dollars per year from 2022 from Eni's FLNG platform (US$19 billion during the life of the project); US$2.1 billion per year from 2025 from Anadarko/Total's onshore Palma platform (US$53 billion during the life of the project); and further production of 15.2 million mt/y from the LNG plant to be developed by Area 4 partners led by ExxonMobil.

Such transformational financials offer a once-in-a-lifetime opportunity for the economic development of Mozambique, as well as its African neighbors that will help build the ecosystem necessary to support the LNG projects. However, Mozambique has an unprecedented task on its hands to manage a level of investment over three-times greater than its current GDP.

Omar Mithá

Chairman and CEO
National Hydrocarbons Company (ENH)

How are the upcoming gas developments going to change Mozambique's economy?

With these resources, Mozambique will be in a very good position not only to supply the premium LNG markets such as Japan, South Korea and China, but also to be a key player in Southern Africa. While countries like Angola and Tanzania are seeing good developments, Mozambique has a fast-mover advantage in oil and gas. Fossil energy sources may be short-lived with the development of renewable energies, but oil and gas is still expected to play a crucial role in the forthcoming 40 years.

Has the Anadarko sale changed anything in the development and calendar of Area 1?

The agreement signed makes it clear that whoever farms in or takes over Area 1 needs to respect the commitments already made. Nothing is going to delay the project, all approved expenditures and calendar will be followed as previously planned, so financial closure will happen next year. Having Total coming in is a good sign for us, as it is a larger company with a better risk profile than Anadarko, and has a very good track record.

What's the status of the other huge investment in Area 4?

Our expectation is for a full-fledged FID by April 2020 by ExxonMobil, that is the midstream operator, to build two large-scale trains with a capacity of 15.2 million tonnes per year (mt/y). The project is running very fast towards financial closing. This way, Mozambique will become a huge LNG exporter in the forthcoming decade, with a landmark production of around 30 million mt/y: 3.3 milllion mt/y from the floating energy platform approved in 2017, 12.6 million mt/y from Total, and 15.2 million mt/y from ExxonMobil.

How does ENH's recent joint venture with Vitol fit into these developments?

The ENH Energy Trading joint venture comes at a very timely moment to fulfill the objectives of ENH at the global stage. Vitol is a big independent trader based in Singapore, which is a well-located hub to interact with buyers and sellers, and has an excellent track-record liaising with other NOCs. Besides, it has a big footprint in Africa. Through technology transfer, ENH will be able to develop its trading business. Of course, there will be Chinese walls between the upstream and the trading company for good governance and transparency. •

On the plus side, developing an industry when the prices of oil and gas are low means Mozambique will start without the legacy of US$100 per barrel oil that has plagued more mature African markets such as Angola and Nigeria. When BHGE's Ricardo Aboud was asked what Mozambique could learn from the experience of some of its African counterparts, he pointed to the fact that despite having a less mature oil and gas industry, Mozambique had the advantage of a clearly-defined petroleum agency (INP) from an early stage, in contrast to Angola, which has only recently created their agency (ANPG) to share the workload with Sonangol. "INP has helped to steer the industry in a good direction and has helped the country to produce the proper contract framework to attract companies for the development of the sector," he explained.
The financials laid out by the governments' Natural Gas Master Plan certainly make impressive reading, but the figures rely heavily on foreign investment. "The total financial assets of Mozambique are roughly US$6 billion, whereas the expected investment into the oil and gas sector is approximately US$50 billion over the next few years," observed José Reino De Costa, CEO of Millennium BIM, continuing: "The role of the financial system in the country cannot be to finance these significant investments that are being made in the extractive industries, but rather to work on developing the ecosystem surrounding these extractive industry projects."
The challenge, therefore, is that the SME environment in Mozambique is in an early development phase and, at least initially, will struggle to provide services at the required standards to the huge gas projects. To this end, one of the key issues for the government to resolve is the Local Content Law.

"Increasing the percentage of local content requirement year on year is wishful thinking. Having seen a significant amount of local content programs being implemented across Africa, I believe that the only working model is to have a clearly defined law which everyone understands and is implemented at an early stage."

- Andrew Schnitzer da Silva, CEO, Ascending

Image courtesy of Total

Balancing local content with high-stakes growth objectives

How much of a role local companies should play in the development of Mozambique's bourgeoning oil and gas industry is perhaps the most pertinent talking point currently being discussed by those throughout the value chain. With the Local Content Law yet to be fully defined, the government must strike a balance between ensuring capital stays in Mozambique and a local industry is developed, whilst brining in the requisite help to support growth and fulfill operational demands.
For Jorge Mondlane, president and CEO of First Metical, a Mozambican financial and management consultancy company that advises service providers in the oil and gas industry, the government should take into consideration that the most pressing necessities are capability, experience and knowledge. "I do not believe that local companies should necessarily become shareholders in foreign companies, but rather, local companies should be developed and prepared to provide services to big multinationals to an international standard," said Mondlane, elaborating: "Foreign investors should use the services of local companies, but then the government should assist local companies to develop knowledge, expertise and capabilities so that they are able to provide the required services."
Guilherme Daniel, partner at law firm Guilherme Daniel & Associates, agrees that building capacity should be the priority: "The government should invest heavily in training and education to make sure that local content will start approaching the level necessary for the proposed projects."

Reflecting on the difficulty in predicting what parliament's final decision on the local content law will be, Daniel warned of the dangers of a fixed percentage provision for local content: "Personally, I do not support the idea of having a general content law establishing a quota for local SMEs. Such a solution will not bring any advantages in improving the level of competitiveness of local firms."
There is an overriding feeling that despite positive rhetoric, the government has been slow in its efforts to prepare its service industry for the impending gas boom properly. "Training of the local workforce should start sooner rather than later; in fact, it really should have started five years ago," stated Jacinto Sabino Mutemba, chairman and CEO of Belutécnica S.A., the Mozambican engineering, maintenance and service company that has been working in collaboration with international partners to train and certify a workforce that helps turn over US$13 million per year.
The logistics deficit that exists in Mozambique is one of the areas in most urgent need of development, and in this context Eugenia Langa created NWEBA to provide procurement and logistics solutions for the country's extractive industries. Defining NWEBA's mission, Langa underlined her intention to help the current skill capacity gap by collaborating with experienced partners: "It is important for local companies in Mozambique to be able to work with major companies with more experience, and as a country we have to be open and able to partner with international companies entering Mozambique."
Andrew Schnitzer da Silva, CEO of Ascending, was also keen to emphasize the importance of smaller national companies adopting collaborative models to not lose business to big international companies. "It is important to understand what exactly is expected from us so that we bring our skills together to be able to provide the required offerings to the market," he explained.
Suggesting that the current ambiguity surrounding the local content requirements made it difficult for the service industry to decide on investment strategies, da Silva favors the clear definition of a law rather than incrementally increasing the percentage required as capacity is built: "Increasing the percentage of local content requirement year on year is, in my opinion, wishful thinking. Having seen a significant amount of local content programs being implemented across Africa, I believe that the only working model is to have a clearly defined law that everyone understands and is implemented at an early stage," he said, concluding: "What happens in the beginning is hard to change moving forward."

African interest: How the neighbors can help

The recent wave of international investment into Mozambique has not gone unnoticed by the wider African oil and gas community, many of which stand to gain in the rush to fill the capacity, service and infrastructure gap that currently exists. Despite colonial ties with Portugal, Mozambique is closer from a business standpoint with South Africa, its main trading partner and manufacturing supplier.
Slightly further afield, Africa's biggest oil producer with the most mature service market is Nigeria. One of the talking points at the 18th Nigeria Oil and Gas Conference and Exhibition (NOG2019) was the "Project 100" government initiative to invest in the best Nigerian service companies to enable them to export their services to foreign jurisdictions.
On Africa's Southwest coast, Angola shares many cultural similarities with Mozambique. Both former Portuguese colonies that gained independence in 1975 before undergoing bloody civil wars, Angola is one of the countries best positioned to assist Mozambique in its oil and gas development. Maritime service company Octomar is one of a number of Angola-based players looking to use its experience to assist the growing demand for marine services in Mozambique. Ricardo do Amaral, Octomar's general manager, elaborated: "Octomar already has a strategy in place and has identified four Mozambican candidates to train as divers. The four candidates will first be coming to Angola for offshore training before going to academic training schools in South Africa or Europe."
Having already established itself as Angola's first oil producer in the United States, Grupo Simples, Angola's largest oil service company, also intends to enter the Mozambican market, according to its president Alberto Mendes: "Another goal is to establish our scaffolding and inspection services in Mozambique and inspection services in Ghana, two emerging markets with huge potential."
An influx of foreign companies does not equate to a lack of opportunities for Mozambican businesses, however, and some are taking advantage of the increasing interest from abroad. Grupo Videre, a Mozambican holding company that finds strategic partners to move projects forward, operates in all three spheres of the oil and gas sector – downstream, midstream and upstream. "In downstream, we have a strategic partnership with a South African group, MOGS (Mining Oil and Gas Services), and we are also a shareholder and manager of COGS (Consolidated Oil and Gas Services)," explained Chivambo Mamadhusen, managing director, before mentioning an SME program set up between Grupo Videre and four Mozambican partners to assist in the development of services for the country's rapidly emerging oil and gas sector.
Mozambique is thus emerging from a difficult period with great optimism. For a country with such a difficult past, the future sustains hope. •

Image courtesy of Seplat

NIGERIA

"Even though the results of the Economic Recovery and Growth Plan have not been as good as planned, there has been some improvement in terms of GDP growth, industrial output and greater security."

- Ayo Luquman Salami,
Patner,
KPMG in Nigeria

Number	Name	Owner
1	Ajapa	Britannia-U Nigeria Ltd
2	Akepo	Sogenal
3	Amoji	Chorus Energy
4	Aroh	Chevron Nigeria, NPDC
5	Asaramatoru	Prime Energy, Suffolk Petroleum
6	Atala	Bayelsa Oil Company
7	Dawes Island	Eurafric Energy
8	Delta South	
9	Ebendo	Energia, Oando
10	Ebok	Oriental Energy Resources
11	Egbaoma	Platform Petroleum
12	Ekeh	Movido Exploration and Production
13	Eremor	Excel Exploration and Production
14	Forkados	
15	Ibigwe	Waltersmith
16	Igbolo	Chorus Energy
17	Igbuku	Pillar Oil, Seplat Petroleum Development
18	Imo River	
19	Ke	Del-Sigma Petroleum
20	Matsogo	Chorus Energy
21	Meren	
22	Nembo Creek	
23	Obagi	
24	Obdenti	Energia, Oando
25	Ofa	Independent Energy
26	Ogbelle	Niger Delta Exploration and Production
27	Ogedeh	Bicta Energy, James Bay Resources
28	Oghareki	Chevron Nigeria, NPDC
29	Okan	
30	Okwok	Oriental Energy Resources
31	OML 18	Etron JV
32	OML 26	NPDC/ First Hydrocarbon Nigeria
33	Oriri	Goland Petroleum Development
34	Orogho	NPDC, Seplat Petroleum Development
35	Ororo	Guarantee Petroleum, Owena Oil and Gas

Number	Name	Owner
36	Otakikpo	Green Energy, Lekoil
37	Oza	Millennium Oil and Gas
38	Qua Iboe	Network Exploration and Production, Oando
39	Stubb Creek	Universal Energy, Sinopec
40	Tom Shot Bank	Mira Resources, Associated Oil and Gas, Dansaki Petroleum
41	Tsekelewu	Sahara Energy Field, African Oil and Gas
42	Ubima	AllGrace Energy, Wester Ord Oil & Gas
43	Umuseti	Pillar Oil, Seplat Petroleum Development
44	Umutu	Platform Petroleum
45	Uquo	Frontier Oil, Seven Energy
46	Utapete	NPDC, Shell

NIGERIA

CAPITAL
Abuja

LAND MASS
910,768km2

POPULATION SIZE (as of 1 july 2019)
200,963,599

POPULATION GROWTH (annual growth from 1 july 2018 to 1 july 2019)
2.60%

OFFICIAL LANGUAGES
English

HEAD OF STATE (as of 3rd october 2019)
President Muhammadu Buhari

HUMAN DEVELOPMENT INDEX (2018 REPORT) (out of 189 countries)
0.532 (low) / 157th

EXTREME POVERTY RATES (income of less than $1.90 a day)
46.0% (2016)

DEMOCRACY INDEX RANKING 2018 (out of 167)
108th

ECONOMIC FREEDOM (out of 180)
111th / Mostly Unfree

EASE OF DOING BUSINESS RANKING (out of 190)
146th

MAIN EXPORT ITEMS
Petroleum, petroleum products, cocoa, rubber

TOP 3 EXPORT DESTINATIONS
India (18%), United States (14%), Spain (9.7%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$2,049 / 140th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$6,027 / 130rd
IMF 2018

GDP growth
(PPP growth 2018)
1.90%
World Economics 2018

Public Debt as % of GDP
15.30%
CIA

Inflation Rate Forecast Q4 2019
10.80%
Trading Economics 2019

Value of Exports
(millions)
$63,020
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$54,513
OPEC 2018 / OEC 2018

Current Acount Balance
(millions - as of July 2019)
-$2,858.88
Trading Economics 2019

Production Levels
(barrels per day)
1,999,885
U.S Energy Information Administration (EIA)

Africa Production Rankings
1st
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
10,752
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
36,972
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
5,475
EIA 2018

Marketed production of natural gas
(million cubic metres)
44,250.80
OPEC 2018

Refinery capacity (1,000 bpd)
446
OPEC 2018

Standard Corporate Tax
30% large companies
20% small companies
Deloitte (November 2018)

Royalties
10% corporate bodies
5% individuals
Deloitte (November 2018)

Dayo Okusami

Partner
Templars

What are the main highlights in Nigeria's oil and gas industry from the past five years?
Up until recent history, 90-95% of Nigeria's production was controlled by the IOCs; now, due to a divestment process by IOCs, indigenous companies control over 25% of production, and that number is expected to increase because the IOCs have identified offshore assets as their preferred business model. These divestments have happened over the last eight to nine years and will continue; therefore, there is and will continue to be a lot of activity going on in the upstream M&A space.
Various reasons have contributed to the divestment trend. Firstly, many onshore assets have begun to reach and exceed lifespans of 20+ years, and their production profiles have reached a plateau and entered into decline. Secondly, security issues have made the operation of these onshore assets a challenge. Agitation from the host communities where these assets are located, which unfortunately coincides with some of the least developed areas in Nigeria, has put pressure on the IOCs to implement more development projects. Thirdly, modern technology has improved the accessibility of offshore projects, and offshore assets are generally significantly larger than onshore assets.

What are the key pieces of legislation for the oil and gas industry in Nigeria?
The Petroleum Act, now over 50 years old, is the central piece of legislation. The Deep Offshore and Inland Basin Production Sharing Contract (PSC Act), which is relatively new having been enacted in 1993, governs deep offshore assets. The most important one after that is the Petroleum Profits Tax Act, which defines how the government obtains its tax and royalty revenues. These three, in addition to the Nigerian Content and Development Act (known as the Local Content Act), are the most important pieces of legislation for the sector. Having said that, you cannot talk about these laws without discussing what we call the Petroleum Industry Bill, which represents an effort to modernize the Petroleum Act and the Petroleum Profits Tax Act, and although attempts to pass the bill have been ongoing for the past 10 years now, we do not see it passing anytime soon. In Nigerian law, if a bill is not passed within one parliamentary cycle (four years, or between every election), the process must begin again.

> **"Local content as a principle is here to stay, but it must be managed well – it is about sustainable development of local capacity, not about expropriation, unfair business practices or forcing people into non-commercial arrangements."**

In terms of local content, how can Nigeria's success be viewed as a positive example to the industry?
We are one of the first African countries to enact regulation around local content, and since then, the initiative has experienced significant growth. Local content regulators from other countries like Ghana, Angola, etc. have visited to learn from our success and also from some of the mistakes we have made. Local content as a principle is here to stay, but it must be managed well – it is about sustainable development of local capacity, not about expropriation, unfair business practices or forcing people into non-commercial arrangements.

Will Nigeria pay greater attention to the development of its gas resources and related industries in the future?
The Nigerian government has an initiative to source surplus gas from upstream players and put it into gas projects such as petrochemicals and power. There is enough gas in Nigeria to more than triple power generation, and it is likely that Nigeria will transition into a more gas-focused country than oil. It is expected that within 10 years, our revenues from gas can exceed oil with the right regulatory environment and incentives. The government knows this, and they are taking it very seriously.

What are your expectations moving forward on how markets will behave?
From a Nigerian perspective, we hope the markets improve because the country is still highly dependent on the oil price, and a shift north or south in prices very much affects our projects. The country must look at other ways of generating revenue, which underlines the importance of better utilizing our gas resources. •

Nigeria

The 'Giant of Africa'

Nigeria's prosperous yet precarious relationship with oil began in 1956, when two oil majors – British Petroleum and Royal Dutch Shell – began a joint operation in the country. Whilst the 'paradox of plenty,' commonly referred to as the resource curse, has, in part, been a fixture in Nigeria's journey with the commodity since then, especially after the oil boom of the 1970s, Africa's most populous country has now become the largest oil producer and exporter on the continent. Now, oil accounts for 56% of state revenue, between 85% to 95% - according to various sources – of export revenue and 10% of the country's overall GDP. As oil exploration and production is being met with increasing resistance across North America and Europe due to the growing consequences of human-induced climate change, Nigeria presses on with a well-defined plan to increase oil production to record numbers in the coming years. For a country that has one of the lowest human development index rankings globally, rapid economic growth is essential, and oil remains the life blood to this growth until a strategy towards economic diversification has been implemented.

Oil majors' emphasis towards offshore production

Nigeria's Economic Growth and Recovery Plan (EGRP) 2017-2020, a four-year strategic plan to stimulate the economy after years of slow growth and recession, outlines a set of new bold initiatives, including the ramping up of oil production to 2.5 million barrels per day (bpd) by 2020. Although diversifying away from oil is on the agenda, the country remains focused on increasing oil and gas production through different avenues. As a number of Nigeria's major onshore assets are reaching and exceeding lifespans of over 20 years with many production sites entering into decline, greater emphasis is being placed on gas production – with Nigeria having the ninth largest proven gas reserves – as well as offshore oil assets. "Just one of these deep offshore blocks yields about 250,000 barrels per day, or 10% of the country's entire daily production," underlined Dayo Okusami, partner at Templars. "In other terms, one offshore operation produces roughly the equivalent number of three onshore assets. The commercial sense of going offshore explains itself when considering the management of three assets versus just one. Nigeria has only cracked the surface in terms of the potential of its offshore assets, and it is conceivable that within the next 10 years, subject to quota restrictions, daily production could double."
Indeed, with West Africa's oil and gas industry finally expecting a large capex investment boost, a number of companies, including international oil majors, have looked to increase their offshore assets in Nigeria over the past year. Total, along with a number of local and international partners, is prioritizing the Egina ultra-deep offshore project, which will have a forecasted production capacity of 200,000 bpd. The Nigerian Agip Exploration (NAE) and Shell Nigeria Exploration and Production Company's (SNEPCO) US$13.5 billion integrated development project at the Zabazaba and Etan fields is taking shape with first production expected in 2020. Moreover, the Ogo discovery, involving Optimum

> "The main challenge for IOCs is the uncertainty around the fiscal regime. Fiscal terms are being revised, but this has been the case for over 10 years now and there is no end at sight, with a new National Assembly inaugurated a few months ago. This uncertainty is delaying final investment decisions (FIDs) on some of the planned projects. Meanwhile, oil service companies have to face volatility in oil and gas prices, which affects their contracts. For Nigerian independent producers, the main problem is having access to funding."
>
> **- Ayo Luqman Salami, Partner, KPMG in Nigeria**

Petroleum and Lekoil, was granted a three-year extension to their license in September 2019.

Accessing capital

The future of these projects and many more will hinge on the flow of capital coming back into the region's oil and gas industry. Earlier this year, the Nigerian National Petroleum Corporation (NNPC) announced plans to attract around US$48 billion towards investment opportunities in upcoming projects. This would be a radical change to the sector's recent fortunes. "[The] lack of financial capital is the single most significant challenge when it comes to doing business in Nigeria," mentioned Tunde Ajala, founding executive director of Dovewell Oilfield Services. "Even with the conceptualization and implementation of financial programs meant to support businesses, the government has always been in a struggling position to ensure that financial capital is easily made accessible to entrepreneurs."
A major constraint towards production growth, even before this administration initially came into power, was the huge overhang of unpaid cash costs in the industry, worth US$6 billion. For this reason, there was very little capital investment for over five years. "This administration came up with a plan to clear that backlog, and we are only seeing an increase in industry activity since 2018," underlined Austin Avuru, CEO and executive director of Seplat Petroleum. "[A]nd In the next couple of years, we should be reaching the projected figures of 2.2-2.3 million bpd."
With the ERGP slowly yielding results into the sector and unpaid cash costs being received, a continuous flow of international capital will be essential if Nigeria is to reach its projected production targets. This is all the more important given the recent performance of the Nigerian Stock Exchange, one of the worst performing exchanges globally in 2019.

Managing the perennial security issues

Security remains of the utmost importance to both international and indigenous oil and gas companies that have assets across the Niger Delta. For example, Nigeria staggeringly lost US$4.4 billion in 2016 and US$2.7 billion in 2017 to crude oil theft. Apart from this, issues range from illegal refining and third-party interference, which directly pollutes the Delta, to kidnap, ransom and militancy. The security situation does look to be improving for companies across all sectors.
"Due to the divestment trend discussed earlier, the security issues have vastly improved," remarked Okusami. "Nigerian companies operating onshore are better situated to deal with host communities and security challenges than IOCs. While the situation is still not what it should be, year-on-year there is progress, which is a sentiment I believe would be shared by NOCs, IOCs and international service companies."
Indeed, signs of progress are being noted, especially given that the last attack on oil and gas infrastructure happened in November 2016. However, the unpredictability and volatility of the security situation means that mitigating security risks will continue to be a priority in the years to come.

Waiting on the Petroleum Industry Bill

The Petroleum Act, which has been in place for half a century, still remains the main piece of legislation in Nigeria's oil industry. In fact, the industry is dictated by this Act and the Petroleum Profits Tax Act (PPTA) of 1959 and the Nigerian National Petroleum Corporation (NNPC) Act of 1977. Given how far the global oil and gas industry has evolved over the past 40 years, these guidelines are clearly counterproductive to the development of Nigeria's oil industry. However, the long-awaited Petroleum Industry Bill (PIB), a legislation to modernize the industry, has yet to be implemented. "[A]lthough attempts to pass the bill have been ongoing for the past 10 years now, we do not see it passing anytime soon," highlighted Okusami. "In Nigerian law, if a bill is not passed within one parliamentary cycle (four years, or between every election), the process must begin again. Because of the uncertainty this causes around the regulatory framework, investor confidence in Nigeria's oil and gas sector has been affected."
A move to a legislation that increases transparency and stimulates growth is essential – and something that the PIB would, in part, help deliver. All eyes will be on its progression in the coming years, and this must remain a priority for the government.

> "Our net asset value is about $2.5 billion, yet our market capitalization is a third of that. Factors explaining this are the above ground security anxieties in Nigeria and overall anxieties about price fluctuations of oil and gas. The market is also yet to give us full credit for strengthening our balance sheet in the first quarter of 2018, and we wait for investors to give full value to that."
>
> **- Austin Avuru,**
> **CEO and Executive Director,**
> **Seplat Petroleum**

Image courtesy of Seplat

What next for President Buhari and Nigeria?

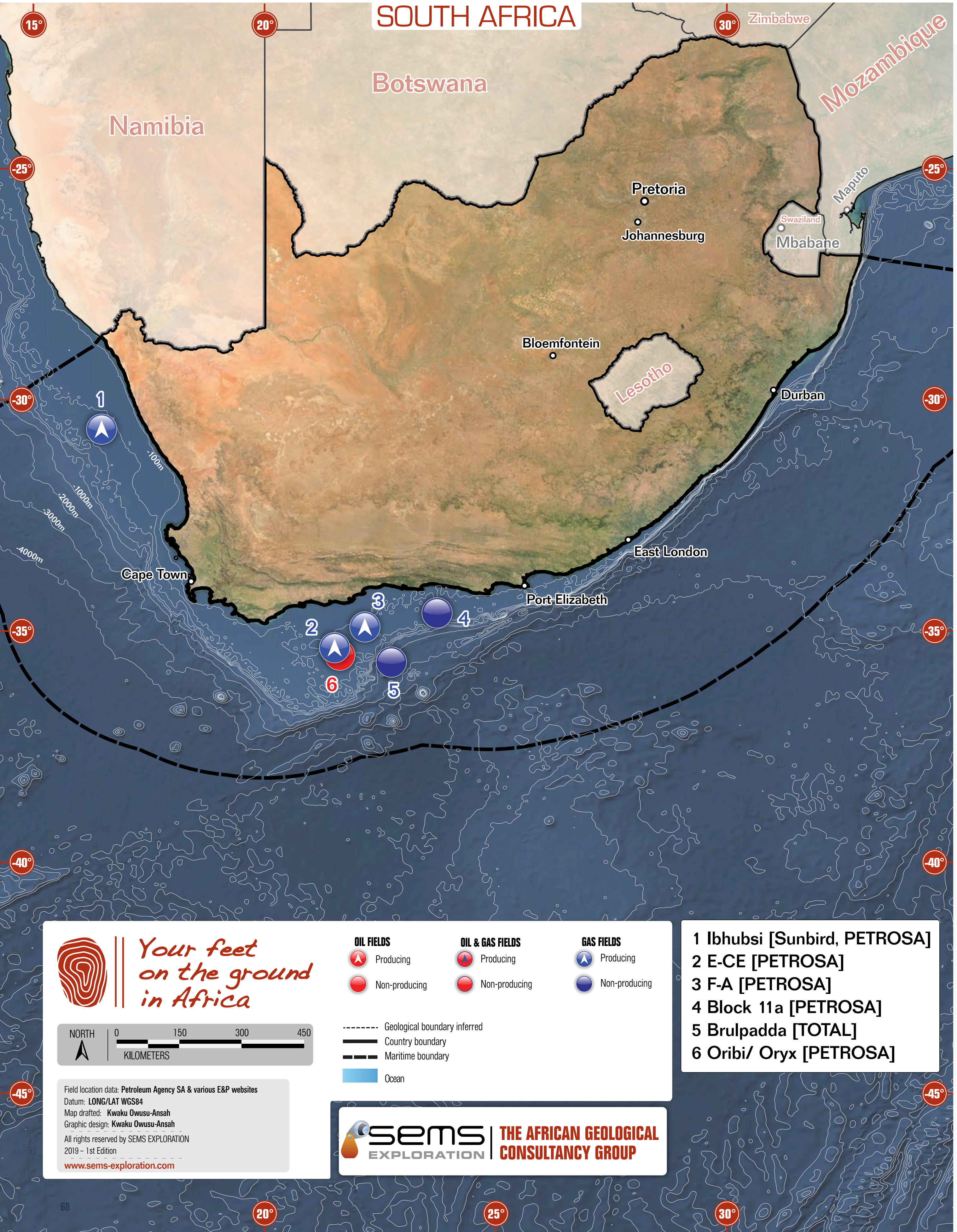
Part of President Muhammadu Buhari's electoral promise in the run up to the February 2019 general elections, which he won, included retaining a nationalized oil industry under the Nigerian National Petroleum Corporation. In contrast, his main opponent, Atiku Abubakar, promised to liberalize the economy by selling off aging refineries to the private sector. With Buhari's first term seeing an economy grinding to a halt and unemployment and inflation levels rapidly increasing, there is mounting pressure for a different strategy to boost the efficiency of the oil and gas sector. Market liberalization could go some way in helping to untie the bureaucratically stifled system, but Buhari fears this could lead to more corruption.
To make matters worse for the Nigerian government, at the time of writing, it was also in the midst of being on the wrong side of one of the biggest ever arbitration awards in the United Kingdom. A British judge had ruled that a small gas company founded by two Irish businessmen was entitled to take US$9.6 billion in assets from the Nigerian state as compensation for losses related to an aborted gas-processing project.
Whilst Buhari is very unlikely to radically change the setup of the industry, there is reason to be optimistic. A local group of Nigerian entrepreneurs are making a strong dent in the sector, controlling 19% of oil production. This gives hope that the oil and gas sector will open up to more competition. Moreover, Aliko Dangote – Africa's richest man – is building a US$12 billion oil refinery, between the Atlantic Ocean and the Lekki Lagoon, that is planned to be the world's largest. Within just one to three years, it could be producing up to 650,000 bpd.
Much needed capital is starting to come in, and the ERGP gives a clear trajectory of where the country wants and needs to go. Nigeria and Buhari are at a crossroads. With human capital – the 7th largest population globally – and resources in abundance, Nigeria can become a global economic powerhouse. Oil can help facilitate the growth it so desperately needs, especially given that half the country lives in extreme poverty. Buhari and his government must increase investor confidence, and reducing corruption, passing the PIB, developing strong public-private partnerships, strong resource management and reducing the security threat will be key to securing the nation's future. •

> "With the rise of 'made in Nigeria' advocacy, it's just a matter of time before we will begin to see a change in mind-set and the increased patronage of locally created products."
>
> **- Tunde Ajala,**
> **Founding Executive Director,**
> **Dovewell Oilfield Services Limited**

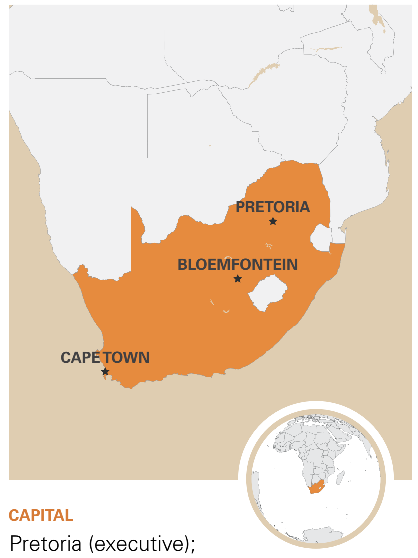
SOUTH AFRICA

"Given the lack of security of supply in the power sector, gas sector and the liquid fuel sector, South Africa remains an extremely interesting opportunity if the stakeholders are able to organize the architecture so that deals can happen. There is a high level of investor appetite in Southern African exploration and development."

- Paul Eardley-Taylor, Oil & Gas Coverage - Southern Africa, Standard Bank



SOUTH AFRICA



CAPITAL
Pretoria (executive);
Bloemfontein (judicial);
Cape Town (legislative)

LAND MASS
1,214,470km2

POPULATION SIZE (as of 1 july 2019)
58,558,270

POPULATION GROWTH
(annual growth from 1 july 2018 to 1 july 2019)
1.30%

OFFICIAL LANGUAGES
Afrikaans, English, Southern Ndebele, Sotho, Northern Sotho, Swazi, Tsonga, Tswana, Venda, Xhosa, Zulu

HEAD OF STATE (as of 3rd october 2019)
President Cyril Ramaphosa

HUMAN DEVELOPMENT INDEX (2018 REPORT)
(out of 189 countries)
0.699 (medium) / 113th

EXTREME POVERTY RATES
(income of less than $1.90 a day)
18.9% (2014)

DEMOCRACY INDEX RANKING 2018 (out of 167)
40th

ECONOMIC FREEDOM (out of 180)
102nd / Mostly Unfree

EASE OF DOING BUSINESS RANKING (out of 190)
82nd

MAIN EXPORT ITEMS
Gold, diamonds, metals and minerals, cars, machinery

TOP 3 EXPORT DESTINATIONS
China (16%), United Kingdom (7.4%), India (7.4%)

SOURCES:
UN Figures
United Nations Development Programme's Human Development Report (2018)
(latest figures recorded by the World Bank)
Economist Intelligence Unit
2019 Index of Economic Freedom
Doing Business 2019 (World Bank 2019)
OEC 2018

GDP per Capita
(nominal)
$6,377 / 86th
IMF 2018

GDP per Capita
(Power Purchasing Party)
$13,675 / 89th
IMF 2018

GDP growth
(PPP growth 2018)
0.40%
World Economics 2018

Public Debt as % of GDP
50.10%
CIA

Inflation Rate Forecast Q4 2019
4.20%
Trading Economics 2019

Value of Exports
(millions)
$108,000
OPEC 2018 / Observatory of Economic Complexity (OEC) 2018

Value of petroleum exports
(millions)
$11,380
OPEC 2018 / OEC 2018

Current Account Balance
(millions - as of July 2019)
-$13,443
Trading Economics 2019

Production Levels
(barrels per day)
2,000
U.S Energy Information Administration (EIA)

Africa Production Rankings
-
U.S Energy Information Administration (EIA)

Oil Production per capita
(barrels per day for every million people)
35
U.S Energy Information Administration (EIA)

Proven Crude Oil Reserves
(million barrells)
15
OPEC 2018 / EIA 2018

Proven natural gas reserves
(billion cubic metres)
3
EIA 2018

Marketed production of natural gas
(million cubic metres)
1,280
OPEC 2018

Refinery capacity (1,000 bpd)
-
OPEC 2018

Standard Corporate Tax
28%
Deloitte (November 2018)

Royalties
15%
Deloitte (November 2018)

South Africa

Igniting a nation in crisis with gas

More than a quarter-century after the first democratic election, South Africa's political, economic and social landscape is still scarred by its past history of apartheid. Furthermore, the current trajectory of the country is marked by rising inequality, staggering unemployment rates, economic decline and political instability, serving as a testament to the reversibility of the nation's hard-earned progress. The ANC, a coalition once unified by the necessity for resistance, today faces the challenge of mending its internal fragmentation that has South Africa careening towards crisis.

The main question today is whether the newly elected President Cyril Ramaphosa can turn the country's fortunes around. The former anti-apartheid activist and businessman has pledged to revamp the economy and restore the sheen of the Mandela and Mbeki eras. The way forward: economic growth. But engineering economic recovery will firstly require pushing through policy within a party locked in an internecine zero-sum factional war. Secondly, economic growth will have to translate into reduced inequality. In 2019, unemployment officially reached a 15-year high of 27.6%. From one end of the telescope, the elite attributes high unemployment rates and inequality to a low-growth economic trajectory, while on the other end, a majority underclass sees it as the result of longstanding systematic exclusion.

While the hurdles are discouragingly high, South Africa does, however, have some good things going for it. The country's constitution, largely considered sacrosanct by the population, has so far passed all tests of robustness. South Africa also has the most sophisticated economic infrastructure on the continent with mechanisms in place to mobilize capital and drive economic activity. The country is globally integrated, meaning that lowered financial barriers and policy predictability is probably enough to attract substantial foreign investment.

Ramaphosa will not be able to replicate Mandela's miracle of unification, and the era when the ANC can form policy solely for electoral purposes has ended. The way forward is to leverage majority support to drive through viable economic policies.

Total's game-changing discovery

In this context, the announcement in February 2019 that the French energy giant Total discovered one billion barrels of wet gas at Brulpadda off the South African coast was tumultuous. Could this be the game changer? Despite being home to a fantastic wealth of minerals, South Africa has never been famed for its hydrocarbon reserves. Oil reserves are estimated at 15 million barrels, or equivalent to 0.0001% of the global total. Currently crude production stands at a mere 3,000 bpd. The vast majority of the nation's energy needs are imported, particularly in the form of crude, while national production depends largely on processing coal to liquid fuel, in which it is the world leader. "This dependence on imports inflicts a huge trade deficit and an insecurity of electricity supply that handicaps the country's industry and business. The key issue in the South African market is actually the energy issue: The South African economy is structured around mineral extraction and cheap electricity to feed energy-intensive industries. With rising electricity prices, many of the energy-intensive manufacturing businesses have come under significant pressure", said Kishan Pillay, Director of Oil and Gas for the Department of Trade and Industry (DTI).

Brulpadda, as well as other discoveries that are likely to follow in its wake, could

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> "The Brulpadda discovery might play a role in changing the perception that IOCs have of South Africa. It proves that the country has potential, which is beneficial in an investor market. The discovery is, however, still far from production (10 years), and although it is significant, I am not sure how much it will influence the behavior of investors."
>
> **- Andrew Lane, Africa Energy and Resources Leader, Deloitte**

Kishan Pillay

Director Oil and Gas, Department of Trade and Industry
Government of South Africa

How is the South African economy performing, and what is the role of the DTI?

The Department of Trade and Industry's main focus is the re-industrialization of the South African economy with an emphasis on the manufacturing sector. The department's political mandate is to stimulate the economy and to create jobs, and within this I look after the oil and gas sector from the perspective of building strong backward and forward linkages from the extractive oil and gas industry. The former relates to developing a world class capital goods and services cluster that is capable of servicing the oil and gas industry in SA and the broader African region while the latter is concerned with adding value to the actual oil and gas molecules. The South African economy is facing severe headwinds with the economy contracting by approximately 3.2% earlier this year. The key issue in the South African market is actually the energy issue: The South African economy is structured around mineral extraction and cheap electricity to feed energy-intensive industries. With rising electricity prices, many of the energy-intensive manufacturing businesses have come under significant pressure.

> "Over the years South Africa has proved that it can successfully achieve backwards integration from its mining industry, and we are hoping to leverage this experience when the time comes to build similar backward links from the upstream oil and gas industry."

How can the energy supply situation be improved?

Our national utility, Eskom, is under significant pressure to maintain a constant, uninterrupted supply to heavy industrial users. In addition, Eskom faces challenges with significant debt levels, which is exacerbated by poor performing municipalities. The SA government is, however, implementing an urgent turnaround strategy that investigates different options that could improve Eskom's long-term sustainability from both a technical and financial perspective. One option in the medium term is to recalibrate some of Eskom's peaking power plants so that it may be run off gas instead of higher cost diesel. This has the ability to reduce the cost of electricity and SA's CO_2 emissions, as well as to alleviate pressure on our balance of payments.

How promising is the recent Total find in terms of implementing that strategy in the future with local hydrocarbons?

The Total find is very exciting for the country, however, there is still a long way to go before we are in a position to understand exactly the size of the find, its quality, etc. Due to the challenging met-ocean conditions experienced in South African waters, drillers have a small window to undertake drilling, which may push out the timelines as to when we will have more certainty around Total's find. There is a lot of interest in South African opportunities in oil and gas, obviously fueled by Total's find. The geology seems to be promising in the deep water off SA's East, South and West coasts, with other large companies like Eni and SASOL busy with environmental impact assessments to do some drilling as well. The key challenge for further development has been the delays in finalizing a new upstream regulatory and legislative framework. The Department of Minerals and Energy is currently drafting a new upstream Oil and Gas bill and is under some pressure to get this bill to parliament as soon as possible, so hopefully things will get underway soon.

South Africa is a strong mining jurisdiction. How can skills be transferred to facilitate oil and gas developments?

Over the years South Africa has proved that it can successfully achieve backwards integration from its mining industry, and we are hoping to leverage this experience when the time comes to build similar backward links from the upstream oil and gas industry. By way of example, we have set up a research and development center, the Nelson Mandela Mining Precinct (which is a collaboration between government, the mining industry and academia), which seeks to develop new technologies for the mining industry. A big challenge in South African mining at the moment is that some of the ore deposits are quite deep, and as a result it is quite dangerous to have people working at these depths. A key focus area is understanding how we may develop and deploy certain automation and mechanization technologies. It is envisaged that a similar collaborative approach will be employed to develop local capabilities in the upstream oil and gas industry. •

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render South Africa self sufficient in energy, generate vast fiscal revenue for the nation for many years to come, provide a boost to employment and industry and propel South Africa to becoming one of Africa's leading oil producers. According to Andrew Lane, Africa Energy and Resources Leader at Deloitte: "The Total discovery is significantly important for the country and will be good for energy security and inbound investment. South Africa does have shale gas deposits of its own, but these are still very much in their infancy and are not going to yield very much for a good few years. Investment into big capital infrastructure and industry will be good for South Africa, but I believe that what is going to hold us back is the political uncertainty and the regulatory framework, which needs to be amended and updated."

Modernizing the nation's oil and gas policy

President Cyril Ramaphosa has made the economic revival of his country his government's priority and vowed to attract US$100 billion in foreign investment. He intends to achieve this through new legislation and a crackdown on corruption. Energy is a priority, and Brulpadda has lent a new urgency to the government's efforts. "There is a lot of interest in South African opportunities in oil and gas, obviously fueled by Total's find, and the geology is clearly interesting, with other large companies like Eni and SASOL busy with environmental impact assessments to do some drilling as well. The key challenge for further development has been the delay in finalizing a new upstream regulatory and legislative framework. The Department of Minerals and Energy is currently drafting a new upstream Petroleum Resources Development Act (PRDA) and is under some pressure to get this to parliament as soon as possible, so hopefully things will get underway soonest," said Lane.
Some of the regulations that the PRDA will contain can be predicted. Firstly, the new Act will be separated from the previous Mineral and Petroleum Resources Development Act (MPRDA) of 2002 and applied uniquely to oil and gas, thereby protecting the industry from the uncertainty that has held back the mining sector, which has been bogged down debating the new government's charter aimed at redistributing the country's wealth. The new legislation will determine all terms and conditions that apply to oil and gas licenses over and above the existing tax regime for all industry participants and future investors. "We have always argued that a separate piece of legislation was needed for oil and gas, as it is a different activity from mining. That has been agreed, and the PRDA is now in development and coming; also the Gas Act will add policy certainty around the infrastructure and development towards importation of LNG. A very encouraging legislative development is that the two ministries involved are now being amalgamated into one ministry," said Niall Kramer, CEO of South African Oil and Gas Alliance (SAOGA).
The new PRDA will be administered by the Department of Minerals and Energy, and will retain much of the current regulatory structure contained in the MPRDA, in addition to those amendments that had been agreed between stakeholders through the public consultation process held previously.
It seems that under its terms, the State would secure 10% ownership of energy projects at the exploration phase and the rights to 10% of production at no cost. It is also expected that a target of 10% HDSA (Historically Disadvantaged South Africans) participation in petroleum assets by means of a term included in the right granted to the holder will be stipulated. The Department of Minerals and Energy has set a goal for publication of the new PRDA by the end of the May 2020. It is hoped that the draft wording will be published for public comment by the end of 2019.
Investors will be difficult to lure in as upstream opportunities abound across the world, including the Rovuma basin in nearby Mozambique. "Mozambique has attracted north of US$50 billion in FDI; if South Africa's policy environment had not been so contested over the past five to 10 years, we could have potentially attracted significant exploration and some of that investment. Now, Total's discovery at Brulpadda is hugely important as a catalyst. It has focused legislators, explorers and the business communities attention on what could be achieved," said Kramer.

“

Bringing in LNG will be the first step in establishing a gas economy. This could be the large imports and infrastructure developments at Coega (and also Richards Bay and Saldanha) or modular Small Scale LNG. In parallel with that, we should promote exploration activities by the A Team companies like Total, Eni, Chevron, BP, Exxon, Equinor and others. But we need to promote the right stable and fiscally attractive framework to attract the large explorers who will be carrying the risk.

- Niall Kramer, CEO, South African Oil and Gas Alliance (SAOGA)

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Image courtesy of Total

Boosting the local services market

Brulpadda and subsequent developments could be a massive boost to business. Apart from refining oil and downstream, marine services, foundries, caterers, helicopter and logistics companies will all benefit. South Africa has a tradition in offshore production dating from the 1980s, when oil and gas infrastructure was developed around Mossel Bay and thus established significant operational capacity. South African service companies are active across both West and East Africa and are also set to benefit from the huge investments in Mozambique. "In the short-term, and particularly if the Total discovery moves into production, we are pretty confident that a lot of things can be provided by the South African economy, especially with respect to engineering, fabrication and manufacturing. This is due to the significant capabilities and capacities developed over the years by servicing not only the mining industry but SASOL as well," said Pillay from the DTI.
Furthermore, a domestic gas supply would radically advance South Africa's gas-to-power efforts that aim at replacing coal with gas so as to provide the country's struggling industry with cleaner electricity at a price that allows for competitive production.

The path forward

South Africa also contains significant potential for unconventional gas from its coal based methane and shale gas reserves, for which it is ranked 8th and 14th in the world respectively. But like Brulpadda, these will take at least seven to 10 years before significant production can begin, so neither can bring any immediate relief to South Africa's beleaguered economy. What can, however, is well balanced regulations and a demonstration of good governance by the new ANC leadership. For the nation to benefit, populism and resource nationalism must be tempered to attract the significant investments required, and a transparent and open government that seeks to reduce inequality and create new jobs will help to assure stability. According to Paul Eardley-Taylor, head of oil and gas for Southern Africa at Standard Bank: "Given the lack of security of supply in the power sector, gas sector and the liquid fuel sector, South Africa remains an extremely interesting opportunity if the stakeholders are able to organize the architecture so that deals can happen. There is a high level of investor appetite in Southern African exploration and development. The challenge is for countries to have the legislation and regulations in place to allow investment and the market to play its role." •

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