Nigeria

A special report by Global Business Reports

Cover photo courtesy of Equinor.

The Troubled Giant of Africa

The development of Nigeria's oil and gas industry, currently the largest in Africa, has not adequately engendered the social and economical development of its population, which is also the continent's largest. Such is Nigeria's predominance in the region, that what happens in Nigeria matters elsewhere. The opportunity for the riches derived from extraction industries to be deployed to foster a healthy and equitable society may not last for much longer.

This report was prepared by Lina Jafari and Germaine Aboud of Global Business Reports.

For more information contact: info@gbreports.com

Nigeria's prominence at the epicentre of the African stage is credited to its giant population and its international role in the energy market. Nigeria's swelling population, expected to reach 500 million by 2050 according to the UN, is the root of its socioeconomic challenges, experiencing acute inequality, poverty and increasing youth unemployment. Coupled with the fraud and corruption that are so often associated with the controversial curse of the black gold, the Nigerian government has struggled to foster a just and sustainable development.

Prior to independence, agriculture was the mainstay of the Nigerian economy and, between 1962 and 1968, it was the leading global exporter of palm oil. The discovery of oil in 1956 by Shell D'Arcy (later known as Shell-BP) at Oloibiri in the Niger Delta changed everything. From contributing an insignificant 0.1% to the Nigerian economy in 1959, the petroleum industry today represents over 60% of the country's annual budgetary income, in addition to employing over 250,000 Nigerians due to the sector's dependence on local service providers.

In an attempt to control oil resources, in 1970 the Federal Government of Nigeria (FGN) established the Department of Petroleum Resources (DPR) to supervise and regulate the industry. Today, the industry is characterized by its numerous institutions and governing bodies led by the Nigerian National Petroleum Corporation (NNPC) formed in 1977, which undertakes a commercial and regulatory role. The long-awaited Petroleum Industry Bill (PIB) should address and evaluate the role of each institution and bring about more certainty, improving the industry by boosting investor confidence.

In addition to addressing the overlaps in the petroleum industry's institutions, the PIB will recognize the rights of host communities in the Niger Delta, who have a fraught relationship with oil companies due to their interests being neglected, as well as update bidding processes and the fiscal framework. With royalties and petroleum profit taxes as the largest contributors to the State's oil revenues, it is unclear whether these will be altered under the PIB.

The PIB's delay is also keeping the nation from exploiting its huge gas resources. Home to an estimated at 200.79 trillion cubic feet of natural gas, Nigeria has the capacity to power Africa, yet currently, gas production stands at only 8.5 billion standard cubic feet per day (bscfd). The fiscal and regulatory infrastructure to support the industry is lacking. H.E. Chief Timipre Sylva, Minister of Petroleum Resources, announced 2020 as the 'year of gas' in Nigeria: "Natural gas has the capacity to transform an economy. Qatar has the world's highest GDP per capita – its growth anchored on natural gas," he stated.

To this end, Nigeria has launched the Gas Master-Plan Policy initiative, launching the Nigerian Gas Flare Commercialization Program (NGFCP) in 2016 and setting a target to eliminate flaring by 2020. Approximately 40% of gas from crude oil production is flared according to the NNPC, across 178 flaring sites in the Niger Delta. The DPR states that the flared gas could produce 600,000 metric tonnes (mt) of liquefied petroleum gas (LPG), create 300,000 jobs and attract at least US$3.5 billion in investments.

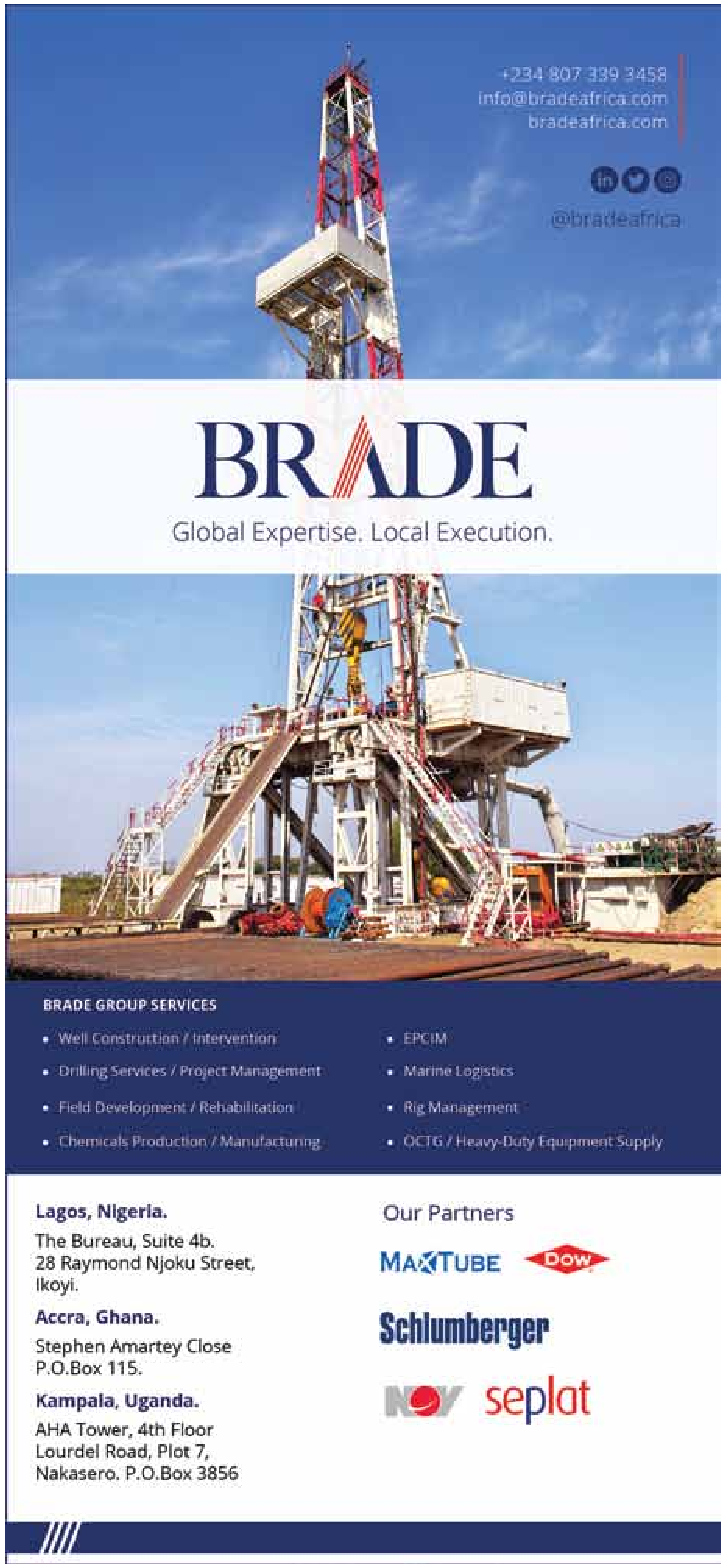
Nigeria's interest in gas will not, however, steal the spotlight away from its core focus on producing its high value, low sulphur, light crude oil, but it will struggle to meet its 2020 production target of 2.18 mbod with the current oil price plunge and global pandemic and if there is no major rehabilitation of existing domestic refineries. Crude oil production averaged 1.92 mbod in the fourth quarter of 2019, and reached its maximum in March 2019, averaging 2.02 mbod. Production increased relative to 2018 and is expected to experience a more notable increase by 2023, when 11 new pipelines will come on stream. The general managing director of the NNPC, Mele Kyari, is hopeful that local oil companies will be supplying 50% of national oil production in two to three years, which is feasible according to Ebiaho Emafo, managing director/CEO of Eroton E&P, operators of the OML18 block: "Indigenous producers have contributed significantly towards oil exploration and production in Nigeria over the past few years. Today, indigenous companies produce approximately 25-35% of the country's crude oil and are consistently growing production."

Exploration, on the other hand, has decreased. Bank-Anthony Okoroafor, president of the Petroleum Technology Association of Nigeria (PETAN) suggested: "The uncertainty fueled by the PIB, which has been up in the air for the last two decades, is deterring exploration."

Lekan Akinyanmi, CEO of Lekoil, a Nigerian E&P company operating four assets, suggested a remedy to promote exploration: "The challenge is that when our fiscal terms are priced based on existing production, it is not attractive enough for exploration. There also has to be sanctity of contracts to make exploration more attractive."

Over recent years, Nigeria has become less competitive in attracting foreign direct investment (FDI) compared to its West African neighbours, especially Ghana. Even though FDI in Africa rose by 11% last year, it shrunk by 43% in Nigeria, according to the United Nations Conference on Trade and Development (UNCTAD), mainly due to the protectionist policies of the current administration.

The continued failure to utilise its resources domestically hinders Nigeria's economic growth. "Nigeria's gas to power journey is another example of failure to optimally utilize its



resources whereby the country continues to rely on generators even though it has over 200 trillion cubic feet of gas reserves," said Abiola Ajayi, managing director of Energy and Mineral Resources Limited, an indigenous oil service company.

Local refining capacity is insufficient to meet domestic demand, leaving 80 million Nigerians without access to power and forcing the largest oil producer in Africa to import US$8.1 billion worth of petroleum products annually, as well as increasing the cost of power for local businesses as explained by Chief Davies Ikanya, managing director of Hopeup Integrated Industries, an indigenous gas and barite producer: "high cost of Power as a result of inadequate public power supply which has made the companies rely on the use of diesel Generators lowers profit margins. Lack of interest of financial institutions in financing for example barite businesses and absence of roads also hinder business."

Ekimini Thompson Amos, director of projects and technical services at Thompson and Grace Investments, a local mechanical manufacturing service company, agreed, identifying corruption as the reason behind Nigeria's addiction to generators as opposed to finding other

"There is the potential for Nigeria to grow, but the speed at which the country can grow is a limitation on its own. Looking at the estimated volume of fabrication which is expected to happen in the next three years, Nigeria does not yet have the capacity."
– Ese Avanoma, CEO, Brade Group

"The high cost of power as a result of inadequate public power supply has made companies rely on diesel generators, which lowers profit margins. The reluctance of local banks towards lending to certain industries and the absence of roads also hinder business."
– Chief Dr. Davies Ikanya, Managing Director, Hopeup Integrated Industries

solutions such as renewable energy. The privately-owned Dangote refinery, set to be the largest in Africa and the largest single train petroleum refinery in the world when completed in 2020, could be the answer to local supply issues if the state chooses to subsidize Dangote to sell at a lower price to ensure that production is not exported at the international price.

2020 carries with it high expectations with the increasing presence of private refineries, the rehabilitation of state-owned refineries, as well as the renewed hope that the Petroleum Industry Bill will pass and 2020 'year of gas' spurs the rise of Nigeria as a gas nation. "There is the potential for Nigeria to grow, but the speed at which the country can grow is a limitation on its own," explained Ese Avanoma, CEO of Brade Group. "Looking at the estimated volume of fabrication which is expected to happen in the next three years, Nigeria does not yet have the capacity."

2020: The 'Year of Natural Gas'?

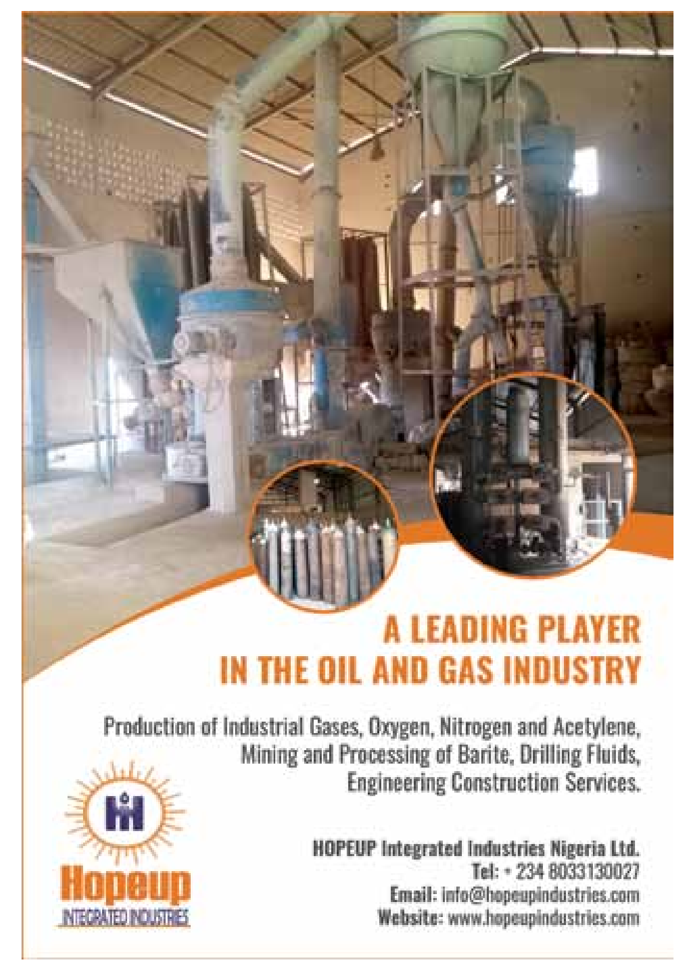
The Minister of State for Petroleum Resources H.E. Chief Timipre Sylva declared 2020 as 'the year of gas for the nation,' an announcement that set the theme for the year and chronologically coincided with the FID on the Train 7 project by the NLNG (Nigeria Liquefied Natural Gas Ltd). "Nigeria has enormous potential to diversify the economy away from crude oil, which has overshadowed the gas in Nigeria's oil and gas industry. The country is struggling to exploit its natural gas resources which rank among the 10 largest worldwide," stated Gbite Falade, managing director and chief operating officer of Oilserv, a leading Nigerian EPC company.

According to the DPR in April of 2019, of the 1.2 billion cubic feet per day (cf/d) of gas produced locally, approximately 41% was exported, only 48% used domestically, the rest was flared.

Underlining the move towards gas is the Nigerian Gas Flare Commercialisation Program (NGFCP), which aims to reduce waste as well as promote the monetization of natural gas. Between September 2018 and September 2019, more than 276.04 billion cubic feet (bcf) of natural gas was flared, which exceeded 275.31 bcf supplied to local power generation, which remains intermittent despite successive governments' focus on deepening domestic gas penetration. Flared gas in Nigeria is enough to generate 2.5 gigawatts (Gw) of power, which would rid the country from its reliance on diesel generators. In 2018, the government increased the fine for flaring to US$2 per 1,000 standard cubic feet (scf). Nonetheless, the opportunity cost companies bear for the penalty of flaring remains low, therefore financial incentive is lacking to utilise the gas as opposed to flare it. "One of the challenges with gas in Nigeria is the lack of infrastructure. The government is addressing this issue and gas is being channelled for power and other derivatives," explained Prof Anthony Adegbulugbe, chairman of Green Energy International Limited, operators of the OML30 block. "The second is the issue of pricing. Gas has not been priced very well for the past few years. There has also been a problem with tariff collection and companies are forced to sell power to the national grid. I believe that we are now at a stage where these issues are being addressed"

The lack of investment in power and gas distribution infrastructures hampers gas distribution to householders and industrial plants more than flaring. The government recognises this infrastructural deficit and is responding with projects to stimulate Nigeria's gas economy. "One of the key components of the Gas Master Plan is the development of strategic pipelines to deepen the availability of gas as a source of power for the country which include OB3 (Obiafu-Obrikom-Oben) and AKK (Ajaokuta-Kaduna-Kano). OB3 is a 48-inch gas transmission system with an associated gas treatment plant which is able to handle up to 2 billion cf/d," highlighted Falade.

Meanwhile the 614 km natural gas AKK pipeline project is expected to commence operation in 2020, costing US$2.8 billion. Another one of the seven critical gas projects announced is the Assa North-Ohaji South (ANOH), one of the largest greenfield gas condensate development projects being undertaken in Nigeria under the joint venture of Seplat and the Nigerian Gas Compa-



GREEN ENERGY INTERNATIONAL LIMITED

INTEGRATION FOR SUSTAINABLE GROWTH

Green Energy International Limited is a proudly indigenous Nigerian integrated energy investment company focused on oil & gas exploration and production. The company was incorporated in 2006 and awarded the Otakikpo Marginal Field located on the NNPC/SPDC joint venture's OML 11 in Rivers State. We have a mandate to create a localized domestic market based on small-scale gas opportunities in Nigeria and Africa at large.

Our focus on health, safety, security and the environment guides our business decisions. A major contributing factor to our long term business success is the committment to all our personnel and stakeholders.

Our vision is to be an integrated energy company that ensures optimal utilization of hydrocarbon resources for the benefit of the nation and local communities.

Our mission is to develop the oil and gas field with Small Scale Utilization Project as the back bone for field development activities and to ensure compliance with the zero-gas flare policy of the Federal Government.

2020/2022 PROJECTIONS

- Production-20,000 bbl per day
- 1.3MM bbl onshore terminal
- 120,000bbl storage tank farm
- 12MMSFCD LPG extraction plant
- 50,000bdp flow station
- Drilling of 7 more wells
- 5000bpd modular refinery
- 40 MW power plant

We create shared prosperity with our communities.

CRUDE OIL PRODUCTION

- Otakikpo Upstearm Project
- 2 Onstream Wells
- Production: 6,000 bbls per day
- 56 MMbbls proven reserves
- 10,000 bpd production facility
- 70,000 bbl storage tank farm
- 6 km offhsore export pipeline

GAS PRODUCTION & UTILIZATION

- 12 mmscfd gas processing plant

POWER GENERATION

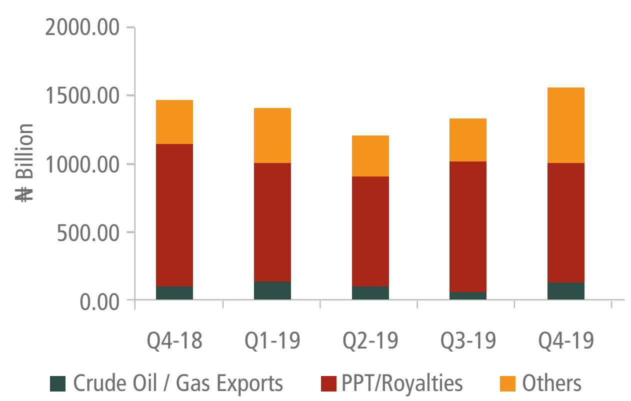
- 12 MW embedded power generation

LPG EXTRACTION

- Daily LPG Production
- LPG Bottling Plant

INDUSTRIAL PARK

Gross Oil Revenue and Its Components



Source: Federal Ministry of Finance, Nigeria

ny (NGC). It is expected to contain reserves of 4.3 trillion cubic feet (Tcf) of gas in addition to 215 million barrels of condensate.

"The catalyst to upstream gas supply is the LNG Train 7 project, which is at the helm of Nigeria's natural gas that reached a FID in Q4 of 2019," highlighted Tony Osuagwu, managing director at Calaya Engineering, a local oilfield service provider.

The Train 7 project is led by the NLNG, which supplies 40% of annual domestic Liquefied Petroleum Gas (LPG) and is comprised of the NNPC as a majority shareholder (holding 49% of shares), followed by Shell (25.6%), Total (15%) and Eni (10.4%). The Train 7 project is expected to add up to 8 million mt/y of LNG capacity to the existing 22 million mt/y supplied by the existing six LNG trains. After a delay of 12 years, mainly attributed to a lack of consensus among shareholders and an uncertain investing environment, the project finally reached a FID on the 19th December 2019, after seven consecutive meetings held by the shareholders. The project will generate US$20 billion in revenue for the government and create 10,000 direct jobs and 40,000 indirect jobs for Nigerians, according to Mele Kyari, the NNPC's group managing director. With a value amounting to US$12 billion, the project will increase domestic supply of LNG and pave the way for Train 12, aligning with President Muhammadu Buhari's vision.

Other ambitious projects, including the Nigeria-to-Morocco gas pipeline, which was pledged to be delivered in record time, lack funding. The first phase of its FID was signed in 2018, making headlines as it aims to supply power to 15 West African countries. On the other hand, Shell's US$9.7 billion Bonga South-West/Aparo project, expected to reach 270 million cf/d at peak production by 2022, hass yet to reach a FID, delayed due to the uncertainties surrounding the legal and fiscal framework. Meanwhile, 45% of the population remains without access to electricity. "Nigeria requires more action as opposed to catchy phrases such as 'the year of gas'. The country could have established two more LNG plants (Brass and Olokonla) but failed to do so, again because of politics," commented Olufemi Abegunde, partner and leader of the energy and resources industry at Deloitte Nigeria.

"The Gas Master Plan Policy was another catchy phrase initiative announced in 2008, highlighting major gas infrastructure expansion and integration to initiate gas monetization as well as gas supply development," explained Godwin Izomor, the group managing director of MG Vowgas, an indigenous oil service company offering EPCI services.

Nonetheless, Nigeria has not been able to satisfy domestic energy requirements, nor has it positioned itself competitively in natural gas exporting markets.

The Jinx of the Petroleum Industry Bill (PIB)

Nigeria's journey to a comprehensive petroleum industry legislative framework has been a long and bumpy ride as two decades have passed without updating the industry's regulation. "The uncertainty is harming the development of the industry. If the bill had already passed it would have radically changed the fiscal outcomes of the industry and helped the government get a better share of profits. Since it has not passed, the oil companies negotiate lower taxation rates with uncertainty in the country on their side, which the government accommodates to," elaborated Chiagozie Hilary-Nwokonko, partner at Streamsowers & Köhn, a leading Nigerian law firm.

What tops H.E. Hon. Timipre Sylva, Nigeria's Minister of State for Petroleum Resources' agenda for 2020 is the passage of the PIB. Its delay is costing the economy an approximated US$200 billion annually, according to the Nigeria Extractive Industries Transparency Initiative (NEITI), in addition to US$15 billion lost due to decreased investments, especially in exploration since no licensing round has occurred since 2007. However, 42 oil block licenses held by IOCs and NOCs were renewed in 2019 by the government, 35 of which are oil mining licenses (OML) in addition to 7 oil processing licenses (OPL). Civil groups criticised the government's decision to renew these licenses, claiming that it is a setback for Nigeria since it allowed oil and gas companies to negotiate a lower tax rate due to the regulatory uncertainty in which they are forced to operate. "Oil and gas investments are long term and therefore investors want to have as much certainty as possible. Your counterpart, i.e. the host country, can do a lot to alleviate your uncertainty by showing consistency. Certainty, trust and consistency very often go hand in hand. This is the same wherever we operate in the world. Countries that can provide a consistent policy package with good engagement with the stakeholders generally attract more capital at lower rates of return than countries that cannot provide consistency," clarified Heine Melkevik, vice president and managing director of Equinor Nigeria, a Norwegian upstream company and the world's largest offshore operator.

Projects such as Shell's Bonga South/West Aparo, expected to add 143,274 bopd and to be the largest deep-water project since Total's Egina, have yet to reach an FID, in addition to ExxonMobil's Bosi project and Chevron's Nsiko, estimated to boost production by 126,784 bopd and 95,685 bopd respectively. At the fourth Sub Saharan Africa International Petroleum Exhibition and Conference (SAIPEC) in February 2020, Mike Sangster, managing director of Total Nigeria, identified the PIB as a catalyst that will drive investment in Nigeria's oil and gas industry and increase Total's investments in Nigeria, which currently represents only 16% of the US$160 billion Total invested in deep water projects in Africa the last decade.

The federal government of Nigeria (FGN) is aware of the urgency in passing the PIB, notwithstanding it remains a work in progress due to the lack of harmony over the last two decades between the legislative and executive arms of the government. According to Sylva, there is now accord between the two; hence the aggressive promotion of the bill tops his agenda for this year. The legal framework for the industry has not been updated since the Petroleum Act of 1969 was enacted, and the sector has undergone a huge transformation since then. "In 2000, the Nigerian government established the Oil and Gas Implementation Committee (OGIC), which had the mandate to identify how to privatize the industry. I had the privilege of being on that committee and, over the course of the committee's deliberations, the mandate of the OGIC evolved. The OGIC ended up reviewing the legal and regulatory framework for the entire industry and produced a draft of a new law which later became the PIB," stated Sola Adepetun, senior partner at ACAS-Law, a leading law firm in Lagos.

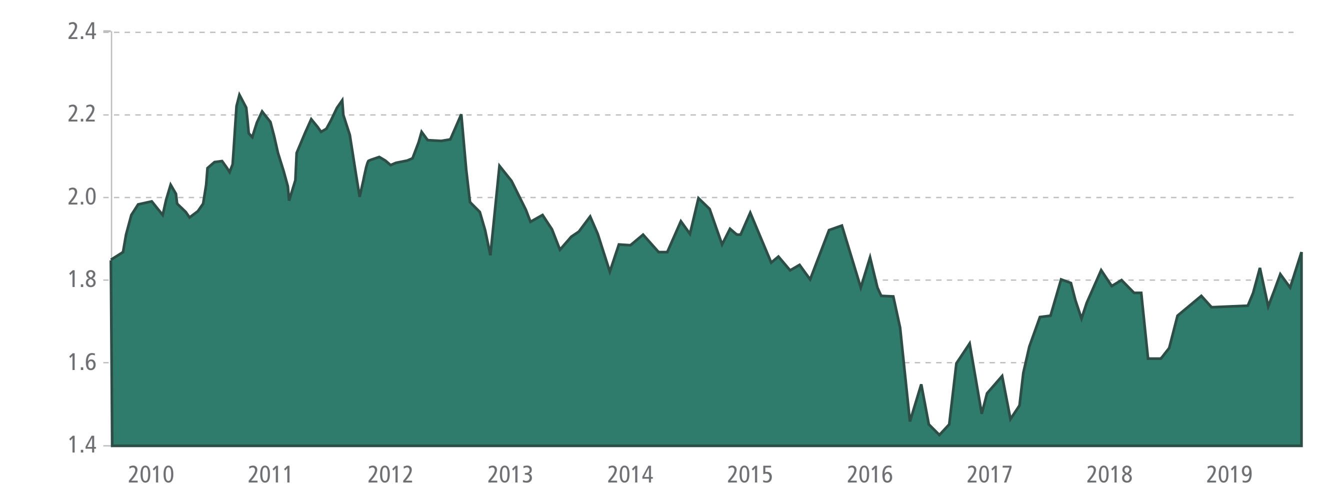
The OGIC published a report that later resulted in the PIB being drafted in 2008. After undergoing several redrafts, including a wholesale amendment, it still failed to pass the sixth National Assembly. The PIB was thus split into three parts for easier passage. "The former Minister came from a legal and petroleum background, so he tackled the issue of the bill aggressively by breaking the PIB into different pieces of legislation guiding specific aspects of the industry: the petroleum industry governance bill (PIGB), the Petroleum Industry Fiscal Bill (PIFB) and the Host Community Bill," commented Abiodun Adesanya, chief executive officer of Degeconek - a geoscience and engineering consulting company. "The PIGB passed the National Assembly in 2016, however, it was refused ascent by the President, his reasons being that his powers i.e. those of the Minister of Petroleum, have been reduced. The industry's leadership lies with the Minister of Petroleum, who is also the President, and the Minister of State for Petroleum Resources, who oversees day-to-day activities. When the bill intertwines with politics it is difficult to reach a decision."

The politicization of the PIGB prevented its passage and quelled the industry's renewed optimism after almost two decades of deadlock. This first series of the PIB, the PIGB, seeks to establish a framework for the creation and alteration of commercially and profit driven petroleum entities, and alter the current framework of the petro-state's institutionalization. In an effort to enhance transparency and efficiency, the industry's powerful behemoth, the NNPC, will be divided into smaller entities and will be replaced by the NPC, which will oversee the nation's joint venture assets and refineries. The NRPC will act as a single regulatory and supervisory body for the industry funded by the FGN's annual budget, replacing the DPR and the Petroleum Products Pricing Regulatory Agency (PPPRA).

What concerns investors most is the PIFB, which will alter the existing fiscal terms of production sharing contracts (PSCs), joint ventures, royalties and taxes. Even though the PIFB is yet to pass, the Deep Offshore and Inland Basin PSC Act (DOIBP-

Photo courtesy of Green Energy Limited Nigeria.

Crude Oil Production in Nigeria 2010 – 2019 (million barrels per day)



Source: Federal Ministry of Finance, Nigeria

SCA) was amended in the fourth quarter of 2019. Dayo Okusami, partner at Templars, one of the leading full-service law firms in Nigeria, explained: "With regards to the PSC Amendment Act, the Original Act came out in 1993 and provided for periodic reviews of the PSCs, taxes and royalties that are supposed to apply to these upstream assets. In spite of these provisions, no review has been done since the act was passed, which has resulted in the government's recent amendment of the act. In the short term, the amendments significantly increase the government's share from the increase in royalty rates. However, this will have a detrimental effect on operating companies as they have invested in their projects based on certain economics which have now changed."

The Amendment Act introduces a new royalty regime, highlighting a baseline royalty of 10% for condensates and crude oil produced in deep offshore, and 7.5% of the frontier and inland basin. An additional royalty will be applied if the crude oil price exceeds US$20 per barrel.

Changes in the DOIBPSCA in 2019, coupled with further amendments under the PIB if it passes at the end of 2020, create confusion. Meanwhile, disagreements between stakeholders on the regulatory frameworks such as the power of the Minister, ownership and control of the resources, as well as host community benefits are the main reasons behind the current setback and delay. However, regardless of these disagreements and the certainty the PIB will bring, the bill remains inherently vague to some extent, lacking major clarifications. The power it grants to the NRPC, for example, remains broad and not well defined. It also fails to acknowledge the conflict of interest that arises when the NRPC is granted the authorization to charge fees for 'services rendered' to players. The bill also lacks provisions to ensure stable tenures for executive

Offshore operations. Photo courtesy of Point Engineering.

directors that insulates them from the political dynamics. Even though the broader aim of the PIB is to introduce deregulation, one of the NRPC's functions is to compute a fair market value for petroleum products and tariffs for gas transport and processing. This somewhat increased regulation could reduce incentives for private oil and gas companies to develop power plants and distribution networks as the price could be fixed at an economically unviable level. Finally, further uncertainty is introduced with the new entity, NAPLMC, due to the lack of clarity regarding which liabilities of the NNPC it will receive.

The PIB should modernise the industry and provide more certainty for IOCs and NOCs to explore, develop the nation's refining capacity and ignite its gas revolution with a new regulatory and fiscal framework that replaces the industry's out-dated regulation with a more comprehensive industry law that aligns with global standards. To that extent, 2020 brings renewed hope and, even if a cloud of scepticism hovers about, the majority of industry professionals that we met with were optimistic that the ninth National Assembly will likely break the jinx this time around.

Nigeria's security challenges

Given Nigeria's economic, cultural and demographic hegemony, its elusive quest for stability has inextricable consequences across the African continent. Unfortunately, Nigeria has become an incubation centre for violence fuelled by poverty, incompetent institutions and rampant corruption as a result of decreased political accountability. The nation's great oil wealth is associated with great risk that negatively impacts investment due to the unpredictable nature of its multifaceted security problems, from Boko Haram to piracy and militancy in the Niger delta.

The constant clashes between the government and Boko Haram, a jihadi terrorist group in existence since 2010 in the north of the country, has detrimental effects on the petroleum industry. In July 2017, the government had to halt exploration in the north after Boko Haram terrorists attacked and killed dozens of NNPC oil contractors in an ambush. President Buhari is leading an aggressive campaign to bring an end to the national suffering they cause.

Nonetheless, the pain inflicted by Boko Haram on the nation's petroleum industry is less severe than that caused by the militants in the oil-rich Niger Delta. "In the Niger Delta, also known as the south-south, the government has made a choice to turn a blind eye to oil theft," said Tunde Aleye, senior partner at SBM Intelligence, a local geopolitical macroeconomic research firm operating in Lagos.

Black gold carries with it influence and profit, attracting the attention of thieves and kidnappers in the region. Militancy in the Niger Delta developed as a result of grievances arising due to the exploitation of the region. Despite its oil wealth, the people of the Niger Delta remain deeply impoverished. "Resource allocation in Nigeria has been unfair to the host communities who should come under the local content initiative. The increased violence in the Nigeria Delta since 2005 can be traced back to these communities trying to draw government attention to their plight," explained Atamuno Atamuno, managing director of Midis Energy, an indigenous oil and gas service company.

The violence began in 2005, when a group known as the Movement for the Emancipation of the Niger Delta (MEND) attacked key oil installations and conducted high profile kidnappings. MEND isthe most organised militant group in the Niger

delta, however other acts of violence are committed by a loose network of individuals and smaller groups of host communities in the Delta region. For example, in April 2019, two foreign oil workers were kidnapped from an offshore oil rig only two weeks after two Shell workers were also abducted and their police escorts killed.

In addition to kidnappings, acts of vandalism and theft also prevail. According to the NNPC, a total of 2,146 vandalised points in pipelines have been recorded between September 2018 and September 2019. Blessing Ayamhere, managing director of Umugini, a local pipeline infrastructure service company, described the unfortunate consequences faced in the midstream sector due to pipeline vandalism: "It leads to the intermittent shutdown of our pipelines, loss of revenue to crude oil producers who depend heavily on the evacuation of their product through the use of the pipelines and effectively reduces government revenue, as well as increased security, surveillance and maintenance costs. Pipeline vandalism pollutes and degrades the environment where these activities take place, which in turn becomes hazardous to the people that live in the affected communities."

However, the upstream sector faces more adverse costs relative to the midstream. As the IOCs moved offshore, they handed over the burden of addressing host communities' violence, and especially oil theft, to the National Oil Companies (NOCs) that bought their oil mining licenses (OML) "The theft is significantly impacting on our cash flow as we are losing approximately 20 - 30% of our production. We are working on improving community engagement to prevent illegal bunkering," confirmed Dr Ladi Bada, managing director of Shoreline Natural Resources, holder of the OML30.

According to Reuters, oil theft cost Nigerian oil companies US$1.39 billion in lost revenue in the first of six months of 2019 alone. Oil theft begins with hot tapping, then connecting a secondary pipe to an illegal refinery where the crude oil is refined and smuggled out of the country. Asharami Energy, a Nigerian E&P subsidiary company of Sahara Group with operations across West Africa, recognises the root of oil theft as being unemployment. "When trust exists between operating companies and host communities, it significantly decreases security risks. At Asharami Energy, we have a very cordial relationship with our host community, a development that makes our operations seamless. We have also laid electric poles from our station to the community to supply them power," elaborated Olajumoke Ajayi, managing director of the company.

The IOC's, meanwhile, face the new challenges of piracy in open Nigerian waters. According to the International Maritime Bureau, Nigeria witnessed 48 piracy attacks in 2018, a twofold increase since 2017. Services offered by maritime security companies such as Aquashield Oil and Marine Services have become essential to reduce the risk by escorting vessels to and from terminals or through patrols to secure the deep-water wells. Ahmad Ojeh, executive technical director at Aquashield, gave an insight into the dangers of Nigerian waters: "Militants in Nigerian waters are well equipped. Their goal is not theft but instead the kidnapping of the highest-ranking officer or engineer on board for a ransom, then they take them to secluded areas such as mangroves and jungles where they cannot be found. A vessel coming into Nigerian waters without security is exposed to high risk, however the militants do not approach a vessel when it is escorted by security, especially when the Nigerian navy is present on board."

The Nigerian navy is battling the piracy crisis in the Gulf of Guinea, that saw a 50% increase in maritime kidnappings in 2019 compared to 2018, according to the International Chamber of Shipping. Greg Ogbeifun, the chairman of Starzs limited, op-

Acetylene gas plant, photo courtesy of Hopeup Integrated Industries.

erators of the oldest indigenous ship repair yard in Nigeria, suggested a less aggressive manner to address piracy issues that threaten Nigeria's maritime economy: "It is necessary to conduct a study to understand why piracy occurs. The ecosystem of the people has been destroyed and degraded and the people in the region have not been carried along in the development of the oil and gas industry and the country. Developing human capital and integrating communities into operations and the industry will significantly alleviate the piracy issue"

Unemployment, which is expected to reach 33.5% by the end 2020 according to the federal government, breeds poverty which leads to theft when complemented with vengeance and corruption. As long as a market for stolen crude oil exists, theft will persist if sanctions and surveillance remain weak and inadequate.

The downstream sector is also exposed to risk, as highlighted Abayomi Awobokun, chief executive officer of Enyo Retail, a technology-driven fuel retail company: "Enyo operates out of 19 states and there are security risks both for the trucks in transit and at the operations. We have put a lot of thinking into how we can keep our staff and sites protected. We keep very little cash on the forecourt, if at all, and are deeply invested in cashless sales. We are also working with technology partners to ensure cybersecurity."

Due to the financial burden of pipeline vandalism and theft on all sectors of the industry, the federal government under president Olusegun Obasanjo set up a committee to address the issue. In 2009, the government launched a military strike against operational bases of MEND. Chief Sylva has prioritized addressing security challenges around oil and gas installations on his agenda for 2020. Companies are resorting to the use of technologically advanced leak detection mechanisms and must invest in training and hiring unemployed youths from host communities.

"A more permanent solution, however, is needed to untangle the complex roots of the Niger Delta involving the three tiers of government, the petroleum industry and Niger Delta communities who must communicate and collaborate to reduce tensions" highlighted Chinedu Maduakoh, managing director of Topline limited, a Nigerian process engineering company specialising in pipeline construction.

"The specter of corruption, violence, insecurity and sabotage are the most important hindrances to the industry's and the country's social and economic development. The security issues in some part of the country have stalled gas development in the country."
– Tunde Ajala, Founding Executive Director, Dovewell Oilfield Services

The Petroleum Host and Impacted Communities Development Bill attempts to do just that, with an objective to foster sustainable, shared prosperity amongst the oil and gas companies and host communities. It stipulates that an annual contribution of 2.5% of the actual operating expenditure (OPEX) of the E&P company will be placed into a fund. 70% of the fund will be allocated to a Board of Trustees for projects in each host community, meanwhile 10% will be used to support the impacted communities. If the PIB passes in 2020, it will contribute to lowering the oil theft rates if host communities are satisfied.

Bracing for 2020

Concerted government coordination and action is needed to develop nation-wide physical, legal and fiscal infrastructure to utilize Nigeria's resources efficiently for the nation's prosperity. More importantly, persistent neglect of the importance of integrating the petroleum industry into the mainstream economy through local refineries is preventing Nigeria from realising its potential, coupled with increasing security threats and corruption. "The spectra of corruption, violence, insecurity and sabotage are the most important hindrances to the industry's and the country's social and economic development. The security issues in some part of the country have stalled gas development in the country," maintained Tunde Ajala, founding executive director of Dovewell Oilfield Services, a Nigerian-owned oil and gas service company.

2020 brings a new set of challenges to the Nigerian petroleum industry, as oil producing countries embark on a horrific year amid the coronavirus crisis bringing businesses to a standstill, and the ongoing price war between Saudi Arabia and Russia. OPEC and IEA warned in March 2020 that developing countries might lose up to 85% of oil and gas income this year, if current market conditions persist. Nigeria is therefore rethinking its 2020 budget that estimated crude oil price of US$57. "Nigeria is blessed in a way, even if it drops to US$30 per barrel, the majority will continue producing due to the low cost of operation compared to elsewhere," highlighted Wale Adelaja, managing director/CEO of Ashbard Energy, an indigenous engineering services provider operating in the energy sector.

The cost of producing one barrel of oil in Nigeria is US$15-17. As of the 27th of March 2020, the price of Nigeria's Bonny Light has dropped to US$24.83, 56.4% below the US$57 per barrel benchmark that the government anchored its budget on.

According to Kyari, Nigeria has about 50 and 12 stranded cargoes of crude oil and LNG, respectively, that have not found landing due the low demand in March 2020. As it struggles to find buyers, Nigeria is facing a crisis as revenues from oil production represents 31% of the 2020 budget and accounts for 90% of foreign exchange. The downturn does, however, offer some opportunities, suggested Kayode Thomas, managing director at Substrata Oil and Gas, a local oilfield service company: "The industry is aware of the volatility and constant downturns which it should use to its advantage by conducting exploration activities which should be undertaken in the downturn phase of the cycle, as it is cheaper due to lower cost of services."

Nigeria's over-reliance on petroleum hurt the economy in 2014, and will likely do so again in 2020. "The strength of an economy lies in diversification. Nigeria could become one of the technology hubs of Africa," stated Huub Stokman, CEO of OVH Energy, an Africa-focused downstream company. "One needs to diversify one's economy when there is money and time are there to do so. I hope that Nigeria uses the time while the oil and gas prices are reasonable, to invest in those areas."

Gbolahan Elias, partner at G. Elias & Co, a leading indigenous law firm, believes that Nigeria is already diversifying, "the ICT sector is greater than the oil and gas sector, representing 13% of GDP as opposed to oil and gas, which represents 9-10%. Oil is the second largest source of foreign currency, after remittances. The economy is being diversified and I believe that this trend will continue in the future."

The extent to which the economy diversifies will increase its immunity against the volatility of the petroleum industry, however, it is unlikely to shield it against the ongoing pandemic that is already taking its toll on nation-wide industries.