Natural Gas Development in Nigeria – A compelling investment frontier in a turbulent oil market

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Osagie Okunbor is Country Chair, Shell Companies in Nigeria and Managing Director of The Shell Petroleum Development Company of Nigeria Limited (SPDC). He is a Business Administration graduate of the University of Benin. He joined Shell over 28 years ago in Lagos.

Osagie recently worked as Senior Advisor in Shell’s Upstream International Operated business, based in The Hague, Netherlands (2013 – 2015). One of his key responsibilities was supporting the implementation of the Shell Group revised strategy for the Nigeria business aimed at positioning the Shell Companies in Nigeria for a stronger and more sustainable future. Prior to that, he was the Vice President Human Resources for Shell’s Upstream Business in Sub-Saharan Africa (2008 – 2013). In 2006, he became Human Resources Director and member of the Board for the Shell Petroleum Development Company. He was appointed Vice President for Infrastructure and Logistics for Shell Nigeria between 2007 and 2008.

Osagie was appointed Managing Director of SPDC & Chairman of Shell Companies in Nigeria on March 1, 2015. He is married to Soala, and they have three children.
Ladies and gentlemen, distinguished guests. 
Greetings. 

Today I will share experiences of the past, review the current situations and ongoing activities, but more importantly frame the future for gas development in Nigeria, where the gas industry is in transition. 

We all know about the oil price drop by 50-60% in a few months. Now, I turn to how expanding the gas business in Nigeria may be a compelling investment. 

Gas demand is on the increase in Nigeria, surpassing current limited supply; in turn, limited supply is slowing down economic growth. The potential is clearly there, the question is: how are we going to unlock it? 

First, a word about natural gas. Natural gas is abundantly available globally, it is accessible and cleaner than coal as a source of electricity. It is also flexible and versatile. It can be used as a source of electricity, heating, base chemicals and fertilisers. When liquefied, it can be used as Floating Liquefied Natural Gas (FLNG). Another way to create value from natural gas is to convert gas into high quality liquid fuels and products, referred to as Gas-to-Liquids or GTL. In Qatar, Shell operates Pearl GTL, the world’s largest source of GTL products. 

Nigeria, too, is a beehive of activities throughout the value chain, in both the upstream and midstream. A few examples are Escravos Gas-to-Liquids and Nigerian Liquefied Natural Gas Company (NLNG), one of the country’s major revenue earners. There are also many local players in the downstream. 

We know that many countries are looking at energy cities, value chain strengthening and big industries as outlets to monetize gas resources in a sustainable way. This creates jobs with multiplier effects on the economy. Many developing countries are unlocking the gas value chain and Nigeria is one of them. 

Nigeria is richly endowed with natural gas and has a proven resource base of about 182 Tcf with potential scope for additional volume. In the past, active exploration for gas was low due to low economics compared to oil. Other African countries like Mozambique and Tanzania have also discovered huge gas resources and now compete for investment with Nigeria. 

As part of Nigeria’s resolve to become a major player in the international gas market, the oil and gas industry jointly developed the Nigerian Gas Master Plan (NGMP) which the government approved on February 13, 2008. 

The NGMP provides a solid framework for Nigeria to develop a gas economy. It addresses challenges relating to gas availability, affordability, deliverability and commerciality of supply. 

The NGMP has three components, they are: policy, regulations and the infrastructure blueprint. 

Under the NGMP, the government plays a key role in providing the backbone infrastructure either directly or through Public—Private Partnership (PPP), while further expansion is driven by market development and private sector investment. 

Gas production has improved in Nigeria, but production levels are still not enough to meet the rising gas demand. The appetite in our country is huge. We need more gas to build an industrial base and grow the economy. 

Nigeria still requires major infrastructure investment, and Public-Private Partnership might be a good vehicle to drive this development. Full liquidity of Nigeria domestic gas market can only be feasible with fully developed and interconnected gas infrastructure across the country. 

The NGMP implementation progress has been slow, time is ripe to fine-tune it, in
order to unleash the market forces for Nigeria’s gas market.

Royal Dutch Shell (RDS) has huge experience in all parts of the integrated gas value chain and has executed big technically challenging projects around the world.

RDS is a pioneer in Liquefied Natural Gas, with over 50 years of experience. We helped build the first commercial onshore LNG plant in Algeria in 1964. Today, we are at the forefront of massive floating LNG projects with Prelude in Australia.

We also have experience in domestic gas. In the Netherlands, Shell has operated in the domestic gas industry for decades. We have also operated in countries with difficult business terrain like Iraq.

We want Nigeria to benefit from this experience That is why Shell has partnered with the Nigerian government to develop gas and power. A few examples of these partnerships include the NLNG plant at Bonny Island, which has an overall capacity of 21.6 million tonnes and accounts for 10 percent of the world’s total LNG capacity. The Shell Petroleum Development Company (SPDC), which I oversee, produces approximately 2.3 billion cubic feet of gas per day through ten gas plants. Other notable examples are Shell Nigeria Exploration and Production Company (SNEPCo), operator of the Bonga deepwater field and Shell Nigeria Gas (SNG) company, which serves over 70 industrial customers in Nigeria and has a capacity of 42 million standard cubic feet.

Recent divestments by SPDC have transferred producing assets with huge gas reserves to local players. Despite divestments, SPDC JV is still a big upstream player and the main supplier of gas to NLNG.

NLNG has not only brought substantial revenue to the country, it has also helped to reduce gas flaring. Today, Nigeria ranks ahead of Russia and Iraq in gas flaring reduction.

We are present across the gas value chain in Nigeria. Shell is the only International Oil Company (IOC) in Nigeria which operates a wholly-owned downstream natural gas distribution company, Shell Nigeria Gas Ltd, or SNG. SNG serves over 70 industrial customers in Nigeria.

The Gbaran Ubie Gas Plant, Okoloma Gas Plant and Afam VI Power Plant are examples of gas and power projects we have developed and executed with the Nigerian government.

The Afam VI power plant is a flagship project that has been hugely successful and produces about 14–20 percent of Nigeria’s current power. In 2008, SPDC JV generated first power from the power plant. Afam VI has consistently delivered electricity to the country’s grid with over 95 percent availability.

Afram VI illustrates the opportunity. As we all know, gas plants are more efficient compared to coal when converted into energy(55-60 percent vs 34-42 percent). Given that in Nigeria, gas supply projects take relatively long to develop, it may be faster to add steam turbines to existing Open Cycle Gas Turbines to increase power generation in the short term – which can be done at existing gas supply levels. We should start thinking in terms of integrated gas and power projects.

What are the main challenges that we need to address?

1. **Infrastructure:** The major backbone required for the Upstream infrastructure is still inadequate in Nigeria. There are also attendant challenges in the production and processing of power generation, transmission and distribution facilities.

2. **Price and Fiscals:** Across the gas to power value chain in Nigeria, prices are economic and market driven. Pricing regimes have also been historically far
below commercially attractive and sustainable levels. The development of gas-friendly fiscals are important, as an increase in taxation for a sector requiring increased investment is not commercially attractive for investors. Another challenge is non-paying customers. The major off taker – the power utility of Power Holding Company of Nigeria (PHCN) has not been able to pay for gas taken at the current prices. This has resulted in huge gas supply debts by PHCN which government through the Central Bank of Nigeria (CBN) is now attempting to pay back.

The provisions in the current draft of the proposed Nigerian Petroleum Industry Bill (PIB) require improvement on gas to attract the required level of infrastructure investment to match Nigeria’s gas requirement now and the future. With tax and royalty on gas increasing from the current rates for big producers and minimal tax allowances, many gas projects will struggle to be economic.

3. **Funding:** The nature of the gas industry in Nigeria requires a long-term view. It is therefore pertinent to have a holistic approach for project funding to make funding available in an integrated manner on a multi-year basis. This is especially so for JV companies and government controlled entities.

Our belief is that the industry can help Nigeria fulfill its oil and gas potential with more funding than we have received in recent years. All players in the industry must keep looking for innovative ways to inject additional capital. Delivering higher funding levels must be matched with the ability to ensure predictable multi-year funding. Resolving the JV Funding challenge could increase gas production.

4. **Product Sharing Contract (PSC) Gas Terms:** In Nigeria, lack of comprehensive PSC gas terms is holding back development of large discovered offshore resources like Nwa Doro. Development of these resources could triple gas production by 2025.

In summary, natural gas is the most abundant, acceptable and affordable fossil energy source. Nigeria in particular is blessed with abundant natural gas resource that is sweet and rich in liquids. Our country also has a massive under-served and growing market.

Opportunities abound to monetize Nigeria’s gas, provided key enablers for investment and commercial operations are put in place. Nigeria can learn from similar examples around the world to develop a vibrant gas economy.

Thank you.