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2022

NIGERIA GAS MARKET

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INSIGHT

Delve into our in-depth insights on the Nigerian gas market and uncover the key opportunities and challenges shaping its trajectory.

FEATURE

Embark on a comprehensive journey through the Nigerian gas market, guided by insightful interviews with industry experts and a keen focus on companies and projects that shape the landscape.

October 2022

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26 Bank St. , Cybercity
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Mauritius.

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NIGERIA - NATURAL GAS 2022

This market report is a Hawilti report series on Nigeria's natural gas industry prepared by Hawilti's analysts with contributions from various public and private sector executives in Nigeria.

For questions about this report or to provide updates, data, or information that would contribute to the programme, please email info@hawilti.com.

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Key Takeaways

- Nigeria has chosen gas as its key transition fuel and named the 2020-2030 period as "Decade of Gas" in a bid to monetize its 206 Tcf of gas reserves to drive industrialization, create jobs, and generate revenue.

- However, gas production continues to stagnate and most gas produced in the country is still reserved for exports, flared or re-injected. Domestic monetization remains relatively small compared to the size of the market.

- While Nigeria's gas demand is expected to keep increasing, especially in the industrial and transport sectors, the consumption of key commodities such as cooking gas remains very vulnerable to prices fluctuations.

- In the wake of the Russian invasion of Ukraine, and Europe's surging demand for gas in replacement of imports from Russia, Nigeria is trying to position itself as bigger gas trading partner to Europe.

- Little confidence exist in the strength of Nigeria's domestic gas value-chain and the country's midstream gas infrastructure remains inadequate. Gas processing plants are increasingly diversifying their output to generate additional revenue.

- Recent policy interventions and private sector investment are domesticating compressed natural gas (CNG) and liquefied natural gas (LNG) while supporting the expansion of virtual pipelines networks.

- Flaring reduction efforts have stagnated and Nigeria continued to burn over 6.6 Bcm of gas in 2021. To reduce flaring and monetise associated gas, the country is relaunching its Nigerian Gas Flare Commercialisation Programme.

- Because the power sector remains illiquid, the promotion of gas utilization across other industries is seen as a priority by the Nigerian government and the private sector. Chief amongst them is the expansion of the downstream gas sector, especially Autogas for cars and piped natural gas (PNG) for industries.

Recovery & Outlook

A fairly diversified economy where government revenues heavily rely on oil, which is itself the single largest export revenue earner.

Nigeria's gross domestic product (GDP) remains fairly diversified with the oil sector accounting for less than 10% of economic output. Agriculture, particularly crop production, remains the pillar of economic activity and has traditionally contributed a fourth of Nigeria's GDP, followed by trade (15%).

However, filling up state coffers is heavily reliant on oil & gas revenues. Depending on oil prices and oil production levels, the Nigerian government collects 50 to 60% of its yearly revenue from the country's oil sector. Similarly, oil & gas exports account for a whooping 90% of total export revenues, including 80% from oil and 10% from liquefied natural gas (LNG).

Nigeria is recovering from two recessions in the span of five years and continues to face external vulnerabilities that deeply affect its short-term prospects.

The performance of the Nigerian economy continues to be deeply linked with that of its oil sector and of global commodity prices. Unfortunately, the crash of oil prices in 2016 and 2017, and again in 2020, sent it to recession twice in the span of five years. Nigeria experienced five consecutive negative quarters in 2016 and early 2017, and two consecutive negative quarters in 2020 on the back of the Covid-19 pandemic.

Even as the economy recovered in 2021, the country's crude petroleum and natural gas GDP kept falling as under-investment, crude theft, and crippling infrastructure limit production.

Recovering from both recessions has been tedious to say the least. On top of the external shocks caused by fluctuating oil prices and the Covid-19 pandemic, Nigeria's persistent insecurity has not boded well for its economic recovery. Beyond just insecurity caused by Boko Haram across its Northern states, Nigeria must also deal with repeated insurgency in the Niger Delta that targets oil companies, especially their workers and infrastructure, but also a growing herder-farmers' conflict across its central states.

Nigeria's Quarterly Real O&G GDP Growth at Constant 2010 Prices, % (2016 - 2022)

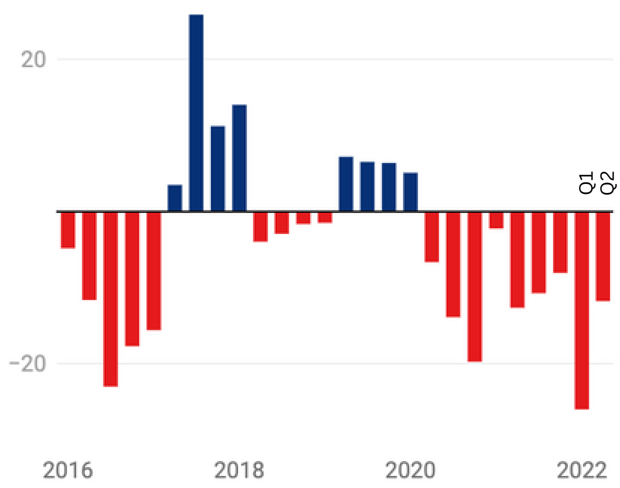


Chart: Hawilti • Source: NBS

Throughout 2022, crude theft has imposed itself as the single most important challenge faced by the industry and the country. By August 2022, Nigeria's oil production had fallen below the 1m bopd threshold, a historic low that the country had not seen in decades. This is in turn affecting the production of gas, especially associated gas from onshore fields reserved as feedstock for power and LNG production.

Nigeria's 2022 Budget Assumptions

Nigeria's Budget Assumptions	2022 Rev.	Actual H1 2022
Projected production, mbpd	1.60	1.32
Benchmark Price, $/bbl	73.00	103.60
GDP Growth, %	4.20	3.32
Exchange rate, NGN/USD	410.15	415.19
Inflation, %	13.00	17.71
Total expenditure, NGN tn	17.32	N/A

Table: Hawilti • Source: Budget Office

In this context, maximizing gas utilization and monetizing gas reserves remains critical to supporting economic growth and diversification.

Nigeria's government, along with its public and private sector, are all aligned on the urgent needs to monetize natural gas to support industrialization and expand energy access across the country.

According to the International Energy Agency (IEA), over 80m Nigerians still do not have access to electricity out of a population of 200m. Meanwhile, the ones who do continue to rely on intermittent grid power or expensive and polluting diesel generators. Similarly, only 15% of the population has access to clean cooking.

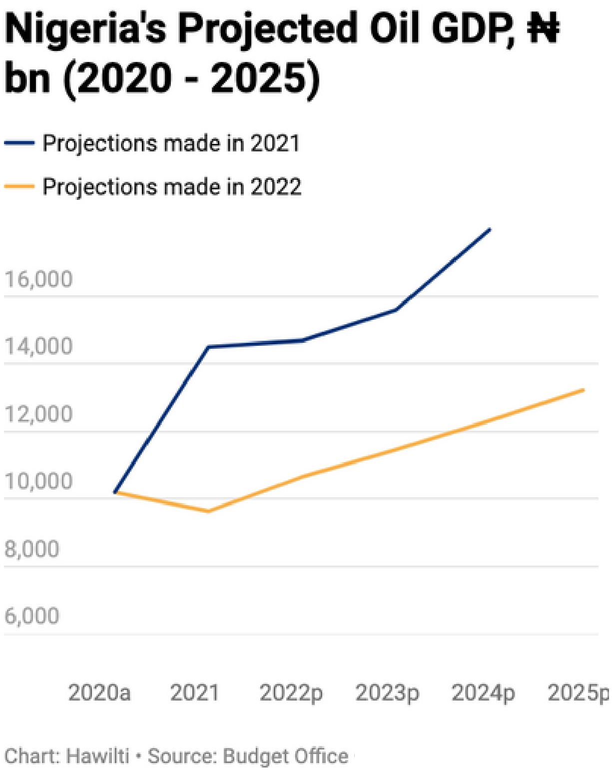
Put simply, Nigeria is far off from providing access to affordable, reliable, sustainable, and modern energy to its citizens and industries. Daily available grid-power generation capacity stands at below 6 GW, an abysmal figure for a country whose GDP is the biggest in Africa.

As a result, some 20 to 25 GW of power remains consumed off-grid and is generated from imported diesel and premium motor spirit (PMS) at four to five times the cost of on-grid gas-fired electricity.

Energy consumption levels also remain very low. Nigeria consumes about 130 kWh/capita of electricity according to the World Bank. This remains massively below the Modern Energy Minimum of 1,000 kWh per person per year recommended by the Energy for Growth Hub, inclusive of both household and non-household electricity consumption.

On top its ability to generate power and provide energy to Nigerian households, natural gas also plays a critical role in the country's industrialization and economic diversification strategy.

The commodity can easily provide feedstock to anchor industries such as fertilizer, petrochemicals, cement, ammonia, or methanol. These have in turn the power to create thousands of jobs while diversifying the country's export basket.



"Some 20 to 25 GW of power remains consumed off-grid and is generated from imported diesel and premium motor spirit (PMS) at four to five times the cost of on-grid gas-fired electricity."

▲ *In August 2022, NNPC Ltd resolved disputes with several PSC contractors and renewed the leases for OMLs 128, 130, 132, 133, 138, and 125.*

The Decade of Gas

In order to state its commitment to monetizing Nigerian gas, the Federal Government launched in 2020 what it called the "Year of Gas".

The initiative aimed at gathering all stakeholders around the need to increase investment across the country's gas value-chain to support economic diversification and jobs creation.

Considering its momentum, the "Year of Gas" turned into the "Decade of Gas" covering the 2020-2030 period.

The launch of the Decade of Gas comes as Nigeria implements its most ambitious regulatory reform yet – the Petroleum Industry Act (PIA) of 2021 – and seeks to embrace the "energy transition" by adopting gas as a transition fuel.

It is accompanied by several public and private sector programmes, including an NGN 250bn intervention facility set up by the Central Bank of Nigeria in August 2020, and the launch of the National Gas Expansion Programme (NGEP) in December of the same year.

On the tax and policy front, machinery and equipment purchased for the utilization of gas in downstream operations remain exempt from VAT.

Similarly, companies engaged in gas utilisation (downstream) can also get a tax holiday of three to five years.

The newly-enacted PIA provides additional tax incentives, including for midstream and downstream petroleum operations. These notably include a new reduced royalty and taxation system for gas, and an additional five-year tax holiday for investors in gas pipelines.

However, these incentives have so far paled in comparison to the capital-intensive nature of developing and operating gas projects in Nigeria.

In addition, industry stakeholders have pointed out to several policy inconsistencies when it comes to promoting the adoption of gas in the country.

The newly introduced VAT (Modification) Order 2021, for instance, imposed VAT on the supply of natural gas to most gas-based industries (except for the power generation companies), and on the supply of imported liquefied petroleum gas (LPG).

Finally, the country's gas pricing reform is still in progress to transition from a regulated to a market-driven pricing framework with a willing buyer-willing seller (WBWS) regime.

Industry stakeholders, led by the Nigerian Gas Association (NGA), are advocating for a long-term liberalization of the market and hope to see a willing-buyer willing-seller (WBWS) regime by 2023.

Nigeria has chosen gas as its key transition fuel

At the UN COP-26 climate conference in Glasgow last year, Nigeria committed to reaching net zero emissions by 2060. However, the country also stressed that developing countries need technical and financial support to hit targets.

Equally important, President Muhammadu Buhari made it clear that natural gas will retain a key role in the country's energy transition. "The data and evidence show that Nigeria can continue to use gas until 2040 without diverting from the goals of the Paris agreement," he said in Glasgow.

His Vice President Yemi Osinbajo has also been increasingly vocal about the need for a just transition to global net-zero and the dangers of defunding natural gas projects in developing countries.

In response, Nigeria has developed an Energy Transition Plan which shows that achieving net-zero by 2060 will require investments in the order of $410 billion above business as usual. Under this plan, natural gas plays a critical role in addressing the clean cooking challenge, providing grid stability, and spurring enough economic growth to lift millions of Nigerians out of poverty.

> *"The world should not have to choose between energy poverty and climate change as this can be addressed with both natural gas and LPG as transition fuels alongside other renewable sources,"*
>
> *Vice President Yemi* Osinbajo, LPG Week, Dubai (December 2021).

During a visit to Washington D.C. in September 2022, Vice President Osinbajo sought an initial $10bn to finance Nigeria's Energy Transition Plan (ETP).

SWOT Analysis:
Nigeria's Natural Gas Industry

STRENGTHS

- With over 200 Tcf of proven gas reserves, Nigeria holds the world's eighth largest proven gas deposits with relatively high prospectivity.
- Both public and private sector players have reached a strong consensus on the need to adopt gas as a transition fuel.
- Nigeria has a relatively diversified gas sector with natural gas used to in gas-to-industry but also to produce electricity, urea and fertilizers, LNG, LPG, etc.
- The country relies on a growing base of local gas producers and local services companies able to support LNG, LPG, and CNG ventures.

WEAKNESSES

- Uncertainty over the implementation of the Petroleum Industry Act (PIA) and its impact on investor sentiment, especially when it comes to the pricing of gas.
- Unstable security context, repeated pipeline vandalism and outages, resulting in international companies divesting from onshore and shallow water Nigerian blocks.
- The size of the existing domestic gas market does not support yet the necessary economies of scale to make investments in gas infrastructure bankable.
- The electricity sector — which accounts for a majority of Nigeria's domestic gas sales — is illiquid and not commercially viable.
- Pricing structure: a willing-buyer willing-seller (WBWS) regime is yet to be implemented.

OPPORTUNITIES

- Efficient monetisation of associated gas, which could cut flaring and help expand access to energy and clean cooking.
- The new Petroleum Industry Act (PIA) provides several fiscal incentives for midstream and downstream gas projects.
- The possible reduction of subsidies on premium motor spirit (PMS) from 2023 could help make gas more competitive for retail consumers.
- Increasing diesel prices are already driving demand from the industrial and transport sectors, which is helping make the case for additional CNG and LNG facilities in the country.
- The exit of IOCs from the Niger Delta present attractive opportunities to invest in low-cost brownfield gas assets.

THREATS

- Continued insurgency in the Niger Delta and maritime insecurity in the Gulf of Guinea.
- IOCs are divesting from strategic gas assets that are supposed to provide gas feedstock to major off-takers and future gas-based facilities.
- Uncertainty remains on the timeline of key gas projects, including NLNG T7, HI, and HA.
- Economic and political constraints prevent electricity utilities from charging cost-reflective tariffs, which adversely impacts their capacity to pay for gas supply.
- Continued subsidies on the sale of premium motor spirit (PMS) prevent CNG from being competitive for Nigerian retail consumers.
- Multilateral and international investors are increasingly shying away from investing in fossil fuel projects, which severely impacts the ease of accessing finance for gas projects.

Keeping track - the latest on gas in Nigeria

13 January 2022: The board of Nigeria LNG approves the supply of 100% of its LPG production (propane & butane) to the Nigerian market.

31 March 2022: Sojitz Corporation announces its acquisition of 25% in Axxela from Helios Investment Partners.

26 April 2022: Worley announces it has been awarded a contract to provide main FEED (Ph. 2) services for the Nigeria-Morocco Gas Pipeline (NMGP) project.

16 May 2022: The Lagos Free Zone (LFZ) signs a Gas Infrastructure Development Agreement with Optimera Energy FZE to develop its own gas distribution network. The special purpose vehicle (SPV) gathers Falcon Corporation Ltd along with ND Western and First Hydrocarbon Nigeria (FHN) via their respective subsidiaries ND Western Midstream Ltd and FHN Gas Ltd.

23 May 2022: West Africa Gas Ltd (WAGL) takes delivery of the MT SAPET and MT BARUKM LPG vessels at the Hyundai MIPO Dockyard in Ulsan, South Korea.

30 May 2022: Deadline for the submission of Expression of Interests for the EPCC package of the Padah LNG terminal (Akwa Ibom).

7 July 2022: The African Export-Import Bank (Afreximbank) announces its execution of a project preparation facility financing head of terms with UTM Offshore Limited, under which it will part-finance activities designed to progress the UTM FLNG project to bankability.

13 July 2022: PetroNor confirms that it has completed the purchase of Pan-Petroleum Aje Ltd and now has an economic interest of 12.1913% in OML 113. The transaction clears the path for the establishment of Aje Production AS as a jointly-owned venture with Yinka Folawiyo Petroleum to redevelop the Aje field.

12-16 August 2022: NNPC Ltd resolves disputes with several production sharing contractors and renewed the PSCs over OML 128, OML 130, OML 132, OML 133, OML 138, and OML 125.

30 September 2022: the NUPRC officially relaunches the Nigerian Gas Flare Commercialisation Programme (NGFCP).

Upstream Gas.

Exploration
Production
Consumption

Demand
Flaring
Outlook