

GAS UTILIZATION UNDER THE PIA: A NEW ERA FOR NIGERIA'S GAS ECONOMY OR MORE OF THE SAME?

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Abstract

Nigeria is blessed with extensive gas reserves and is one of the world's largest producers of natural gas. Over a period of half a century, Nigeria has struggled to benefit from this resource particularly due to gas flaring, lack of infrastructure, regulatory inefficiencies, insecurity, pricing imbalance, among other factors. These challenges have stifled gas utilization in the country, severely affecting Nigeria's gas economy. This unfortunate circumstance continued until the emergence of the Petroleum Industry Act (PIA), 2021, a law enacted to reform Nigeria's oil and gas sector. It is on this premise that this paper using the doctrinal research methodology discusses if the PIA 2021 has indeed brought about much needed reform for gas utilization. This paper revealed that the answer is in the affirmative. Through institutional overhaul, new licensing regimes, fiscal incentives, domestic gas delivery obligation, new pricing mechanisms, the PIA has succeeded in encouraging increased investment in Nigeria's gas sector, through infrastructural and expansion projects which has led to a boost in gas utilization. Of course, challenges are still present which are noted in this paper, but this paper recommends that through a conscious effort by the government to implement the PIA's provisions and close existing gaps and loopholes such as incessant gas flaring, infrastructural gaps, pricing imbalance, gas utilization will be optimal.

Keywords: Gas Utilization, Natural Gas, Gas infrastructure, Nigeria Gas Master Plan, Nigeria Gas Policy

1.0 Introduction

Nigeria, a thriving West African nation, is blessed with extensive natural gas resources. Its proven gas reserves stand at more than 200 trillion cubic feet, making it the eight largest gas reserve holders globally and the largest in Africa.¹ Natural gas was originally discovered in 1958 during the period of the initial discovery and exploration of crude oil in Nigeria,² which is what is known as associated gas. Unassociated gas is discovered independently, in gas reservoirs beneath the soil. Thus, historically, Nigeria's gas discoveries were in association with crude oil exploration and production.³ The vast gas resources are indeed advantageous to Nigeria as the nation's gas reserves are more than enough to meet domestic, regional and international needs. For domestic needs, gas can solve Nigeria's electricity generation and distribution problems and can also be useful for transportation. The resource can serve

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¹ Odinaka Anudu, 'Nigeria's Gas Reserves hit Record 210.5trn Cubic Feet, to Last 93 Years – NUPRC' (Business Day: 12th April 2025). 1st June, 2025.

² A. C. Areremi and C. Emaviwe, 'The Evolution of Gas Development and Utilization in Nigeria' (2023) 1 (1) *KB Law Scholars Journal* 1-23.

³ S. C. Dike and S. E. Osinachi-Nwandum, 'Regulatory Framework governing Gas Operations and Utilization in the Nigerian Petroleum Industry' (2023) 7 (1) *African Journal of International Energy and Environmental Law* 30.

as a transition fuel as many authors and stakeholders have acknowledged.⁴ But the reality of its gas development is not at par with the potentials that exist.

Since the discovery of gas in 1958, gas was largely ignored and wasted due to lack of regulation and a domestic gas market for it since international oil companies (IOCs) at the time preferred crude oil and gas had not been commercially developed globally.⁵ What seemed like the beginning of gas utilization in Nigeria was the period in the 1960s when Shell started the supply of gas to some industries.⁶ The Federal Government was also engaged in some gas supply to few industries at the time.⁷ The enactment of the Petroleum Act of 1969 did not bring much for the development of gas in Nigeria. But by the 1970s little market for gas was visible. It was in 1979 that the Associated Gas Reinjection Act was enacted to bring about the reinjection of gas for utilization and the penalization of gas flaring. The Act did not achieve much since IOCs were willing to pay any fees mandated by the Minister and continue flaring. Additionally, due to Nigeria's domestic gas market being relatively small, the continued gas flaring led to environmental issues and a lack of nationwide gas transmission and utilization infrastructure. Generally, one can say that Nigeria's gas development has slowed over the decades.

Nigeria's gas sector has seen some good attempts at utilization and development such as the establishment of Nigeria Gas Company, Nigeria Liquefied Natural Gas (NLNG) Company Limited, Nigeria Gas Master Plan, Nigeria Gas Policy and various gas projects such as the West African Gas Pipeline Project, but due to the lingering challenges not just with gas development in Nigeria but generally with the nation's petroleum industry, there was need for reform.⁸ The Petroleum Industry Act 2021 was enacted for this purpose and indeed brought about a renewed commitment to gas utilization and development.⁹

The question that this paper seeks to answer is how well the PIA has done in gas utilization, to push the development of the nation's gas economy. Through the utilization of the doctrinal research methodology, this paper will provide an insight into gas utilization in Nigeria pre and post PIA, the reforms brought by the PIA, the current realities with Nigeria's gas economy and a look into gas utilization in a selected country, with a view towards understanding if challenges have been resolved or still persist and what recommendations can be made which if implemented will bring about an improved gas sector economy, placing it on the part towards development.

⁴ A. V. Felix, 'Financing the Nigerian Oil and Gas Industry in the Energy Transition: Challenges and Prospects' (2024) 2 (6) *International Journal of Economics, Business and Social Science Research* 74-102. C. Remteng, 'A Review on the Role of Natural Gas in Nigeria's Energy Transition' (2022) 1 (3) *Environmental Network Journal* 1-27.

⁵ A. E. Adelegan, 'The Role of Natural Gas in Nigeria's Economic Development Calculus: Some Simple Empirics' (2018) 9 (3) *IOSR Journal of Economics and Finance* 13-21.

⁶ R. U. Onolemhemen, et al., 'An Evolution of Domestic Gas Utilization on the Nigerian Economy' (2017) 16 (1) *British Journal of Economics, Management and Trade* 1-13

⁷ Ibid.

⁸ M. Idiong, 'A Critical Appraisal of the Petroleum Industry Act 2021: Challenges and Opportunities' (2021) 6 (1) *African Journal of International Energy and Environmental Law* 178-191.

⁹ Ibid.

2.0 Background: Gas Utilization in Nigeria Pre-PIA

The enactment of the Petroleum Act of 1969 was a turnaround for Nigeria's petroleum industry which had until independence been wholly owned, managed, controlled and regulated by the British colonialists and the laws enacted by them.¹⁰ The Act, however, focused primarily on crude oil and little to no provisions were made for gas utilization or development.

As the domestic market for gas utilization began to be visible (starting from Shell's involvement), although little, the government saw the need to increase involvement in it. The incorporation of the Nigerian National Petroleum Corporation (NNPC) in the late 1970s brought with it the establishment of the Nigeria Gas Company Limited, a subsidiary of the NNPC, in the 1980s¹¹ which was responsible for the development of an efficient gas industry to serve domestic, national and international needs.¹² The Associated Gas Reinjection Act was enacted in 1979 to mandate oil and gas companies to reinject and utilize gas produced which had been previously flared due to the nation's lack of a domestic gas market, gas transmission and utilization infrastructure and prevailing environmental issues in host communities that had been caused by gas flaring.¹³ The Act thus mandated the cessation of gas flaring without the permission of the Minister by 1st January, 1984.¹⁴ The penalty was the forfeiture of any concession granted to the person/company committing the gas flaring.¹⁵ The oil and gas companies were still able to continue flaring gas because under the Act, the Minister could allow the companies to flare gas, subject to payment of prescribed fees, if it was deemed that the utilization or reinjection was not possible in a given field.¹⁶ The oil and gas companies were therefore willing and able to pay any prescribed fees and continue flaring.

While the conscious production of gas increasingly notable and a domestic market began to emerge, as earlier stated, the Petroleum Act, 1969 and the Associated Gas Reinjection Act 1979 did not achieve much since Nigeria's domestic market and the infrastructure to effectively reinject and utilize gas for domestic, national and international needs were not robust. Gas flaring lingered and so did the prevailing environmental issues. Gas development therefore slowed until the emergence of the Nigerian Liquefied Natural Gas (NLNG) Company Limited in the late 1980s to early 1990s. The Nigerian Liquefied Natural Gas (Fiscal Incentives, Guarantee and Assurances) Decree was promulgated in 1989 to encourage utilization of associated gas as LNG. NLNG was a joint venture between NNPC, Shell, TotalEnergies and Eni to develop Nigeria's gas resources, especially the production of Liquefied

¹⁰ Alexander C. Ugwukah and Obinna I. Ohaja, 'A Historiographic Assessment of the Petroleum Industry and its Impact on the Nigerian Economy' (2016) 36 *Historical Research Letter* 19.

¹¹ Bureau of Public Enterprises, 'Nigeria Gas Company Limited (NGC))' (8th January 2006). <<https://www.bpe.gov.ng/nigeria-gas-company-limited-ngc/>> Accessed 2nd May, 2025.

¹² Ibid.

¹³ Abubakar Ibrahim and Faith Esifiho, 'Gas Flaring: A History of Missed Deadlines' (Business Day: 12th February, 2024). <<https://www.google.com/amp/s/businessday.ng/energy/oilandgas/article/gas-flaring-a-history-of-missed-deadlines/%3famp%3F>>

¹⁴ AGRA 1979, s. 3 (1)

¹⁵ Ibid. s. 4 (1)

¹⁶ s. 3 (2)

Natural Gas and Natural Gas Liquids for utilization and export.¹⁷ This was a great initiative for Nigeria and has been beneficial because gas exports were profitable and there was a small increase in gas utilization for domestic and industrial use. Projects like the Escravos Gas to Liquids Project, OSO NGL Project, West African Gas Pipeline Project, Ekpe Gas Compression Project, Belema Gas Injection Project and Odigbo Node Gas Project were some of the projects that occurred during the era.¹⁸ These projects increased Nigeria's gas economy potentials but since the export part was of more interest to the IOCs, Nigeria's domestic gas sector struggled to totally capitalize on the massive gas potential.

The late 1980s to 1990s saw some regulatory involvement in gas utilization by the government. The Associated Gas Framework Agreement was introduced in 1992 to further incentivize involvement in gas utilization.¹⁹ The Downstream Gas Act and the Natural Gas Fiscal (Incentives, Guarantees and Assurances) Act were also enacted in the 1990s to foster a fair return rate for participants in the gas economy.²⁰ All these were in a bid to position Nigeria's gas economy for progress. The domestic market for gas had potential because gas was needed for a wide range of projects including electricity and industrial such as fertilizer making, plastics, aluminum, plastics, among others. But challenges associated with the implementation of these laws still persisted.

Gas transmission and distribution remained an ever-present problem due to lack of widespread investment by the government in largescale gas infrastructure to feed not only industries, but domestic needs and needs for electricity distribution since the nation's electricity sector relied primarily on gas.²¹ Furthermore, Nigeria's gas pricing mechanism being largely regulated failed to foster a framework that would allure private capital investment in gas development in the country.²² The inadequate fiscal and pricing policies affected investment in gas development. The IOCs were mostly focused on gas for exports because of the high commercial and income returns in the LNG plant and the security of income associated with international LNG business. Therefore, gas for the domestic market suffered due to limited confidence in the domestic market also as a result of lack of infrastructure and insecurity issues arising from pipeline vandalism, militancy in the Niger Delta where gas was primarily located in.

The establishment of the Gas Master Plan (2008) and Nigeria's Gas Policy (2017) by the Federal Government came in a bid to revitalize Nigeria's gas economy and improve gas utilization by expanding

¹⁷ Shell 'NLNG – Nigeria LNG Limited'. <<https://www.shell.com.ng/about-us/what-we-do/nlng.html>> Accessed 3rd June, 2025. M. Nnamdi, 'NLNG: The Rare Success Story in the Nigerian Oil and Gas Sector' (Investogist: 15th May, 2020). <<https://investogist.com/nlng-the-rare-success-story-in-the-nigerian-oil-gas-sector/>> Accessed 3rd June, 2025.

¹⁸ H. Biose, 'Gas Production and Utilization in Nigeria: A Long-Term Perspective' (2019) 6 (5) *International Journal of Engineering Technologies and Management Research* 58-72.

¹⁹ E. O. Ekhaton, 'Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation' (2016) 21 (1) *Annual Survey of International and Comparative Law* 43-91. Thisday, 'Effective Legislation needed for Gas Development' (2018). <<https://www.thisdaylive.com/2017/11/07/effective-legislation-needed-for-gas-devt/>> Accessed 4th June, 2025.

²⁰ O. J. Olujobi and T. Olusola-Olujobi, 'The Appraisal of Legal Framework regulating Gas Flaring in Nigeria's Upstream Petroleum Sector: How Efficient?' (2019) 10 (5) *International Journal of Civil Engineering and Technology* 256-272.

²¹ Stephen Onyekwelu, 'Gas Pricing, Inadequate Infrastructure Deter Industrialization in Nigeria', (Business Day: 22nd September, 2020) <<https://www.google.com/amp/s/businessday.ng/energy/oilandgas-pricing-inadequate-infrastructure-deter-industrialization-in-nigeria/%3famp>> Accessed 4th June, 2025.

²² Ibid.

gas demand and infrastructure, through a dedicated gas framework and public-private partnership.²³ These plans and policies incorporated focus on balancing pricing, public-private interest and investment, expansion of domestic market, security of supply, infrastructural development and regulatory reform.²⁴ But the much needed reform would not come until the enactment of the Petroleum Industry Act 2021 which was first introduced as a Bill in 2009.

3.0 The Petroleum Industry Act 2021 and Reforms in Nigeria's Gas Sector

This paper notes that the prior regulatory framework for Nigeria's oil and gas industry did not make much provision for the gas sector leading to a grossly underutilized and underdeveloped gas industry. Coupled with the already existing numerous challenges facing Nigeria's oil and gas industry,²⁵ the need for reform ushered in the introduction of the Petroleum Industry Bill in 2009 which was enacted as an Act in 2021 after a decade of consideration, to transform the nation's oil and gas landscape, repositioning it for success.²⁶ The Act brought with it notable provisions that were hoped to reform the oil and gas industry. These reforms relative to the gas economy are discussed below:

3.1 Institutional Overhaul

Prior to the Petroleum Industry Act, 2021, Nigeria had several bodies regulating the oil and gas industry. The Department of Petroleum Resources (DPR) was primary regulator of the petroleum industry. This body was, however, bedeviled by challenges which were visible in its failure to optimally regulate petroleum activities.²⁷ The NNPC and the DPR played dual roles of regulating and commercial involvement which was disadvantageous to the industry.²⁸ Thus, the coming of the PIA created new regulatory bodies poised for effectiveness and efficiency, effectively dismantling the old regulatory agencies. They were established under the Act, two regulatory agencies known as the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) and the Nigerian Mid-Downstream Petroleum Regulatory Authority (NMDPRA). The NUPRC is the sole regulator of upstream oil and gas activities²⁹ while the NMDPRA is the sole regulator of mid-downstream oil and gas operations replacing the DPR and other agencies.³⁰ As Nwuke notes, these regulatory bodies are responsible for the technical and commercial regulation of oil and gas operations within their respective sectors.³¹

²³ Humphrey Onyeukwu, 'Nigerian Gas Masterplan and Policy: Is it a Constrained Energy Policy?' Paper presented at the Nigeria Annual International Conference and Exhibition, 2010.

²⁴ Ibid. E. L. Esitkot, 'Enabling Energy: Optimizing Nigerian Oil and Gas Policies for Enhanced Efficiency and Job Creation' (2025) X (IV) *International Journal of Research and Innovation in Applied Science* 614.

²⁵ C. S. Odumugbo, 'Natural Gas Utilization in Nigeria: Challenges and Opportunities' (2010) 2 (6) *Journal of Natural Gas Science and Engineering* 310-316.

²⁶ S. E. Imoisi, P. A. Aidonojie and O. I. Edetalehn, 'Legal Issues and Innovations introduced by the Petroleum Industry Act 2021 in the Nigerian Oil Industry' (2023) 10 (2) *NAU Journal of Commercial and Property Law* 231-232.

²⁷ Alex Gboyega, 'Political Economy of the Petroleum Sector in Nigeria' World Bank Policy Research Working Paper No. 5779, 2016 27-28.

²⁸ S. C. Dike, E. Ehie and C. Okachi-Dike, 'Appraising the Layers of Governance under the Petroleum Industry Act 2021' (2022) 6 (1) *African Journal of International Energy and Environmental Law* 164.

²⁹ Section 4 of the PIA 2021, Chapter 1, Part III.

³⁰ Section 29 of the PIA 2021, Chapter 1, Part IV.

³¹ Karim Nwuke, 'Nigeria's Petroleum Industry Act: Addressing Old Problems, creating New Ones' (Brookings: 24th November, 2021). <<https://www.brookings.edu/articles/nigerias-petroleum-industry-act-addressing-old-problems-creating-new-ones/>> Accessed 5th June 2025

Particularly important to gas development, the PIA provides that the NUPRC must prescribe and allocated domestic gas delivery obligations upon all lessees.³² The NMDPRA, on the other hand, is responsible for determining the domestic gas demand requirement and ensuring that it is met.³³ The NMDPRA is saddled with another crucial responsibility which settles on granting, renewing or terminating licenses for mid-downstream operations.³⁴ By creating these regulatory bodies, the PIA seeks to ensure that optimal performance of Nigeria's oil and gas industry can be achieved.

3.2 Mid-Downstream Gas Licensing

The PIA introduced an extensive mid-downstream gas licensing framework for mid-downstream gas operations which were absent in previous regulatory framework.³⁵ The NMDPRA was the regulatory body responsible for issuing, renewing or revoking gas These licenses include; gas processing license for gas processing operations, bulk gas storage license for storage of gas in bult, gas transportation pipeline license for operation of a gas transportation pipeline, gas transportation network operator license for the operation of gas transport network, wholesale and retail gas supply licenses for wholesale and retail supply of gas, gas distribution license for gas distribution operations and domestic gas aggregation license.³⁶ These licenses were introduced to improve investment in gas operations, which if implemented will facilitate gas utilization in Nigeria.

3.3 Fiscal Incentives

Notable fiscal incentives for the gas sector were introduced under the PIA 2021 to promote gas development which was absent in previous regulatory framework such as the exemption of companies engaged in upstream gas operations from hydrocarbon tax.³⁷ The Company Income Tax Act also brought some incentives such as multi-year tax breaks to companies engaged in gas pipeline operations.³⁸ Investors in gas pipeline operations were accordingly granted five years tax-free period after the expiration of the tax-free period stipulated under the CITA, cumulating into a tax-free period of up-to 10 years.

3.4 Domestic Gas Delivery Obligation and Domestic Gas Demand Requirement

An important innovation brought by the PIA 2021 was the inclusion of a domestic gas delivery obligation, to promote gas supply for Nigeria's domestic market.³⁹ In the past, Nigeria's domestic market had not been given much attention because of lack of infrastructure and the IOCs focus on exports since that was where much of the revenue from gas came from. Thus, the PIA came into force to promote investment in Nigeria's domestic gas sector. The PIA provides that the Upstream Commission is responsible for prescribing and allocating the obligation of delivery of gas domestically among the lessees and must ensure that the lessees comply with the obligation.⁴⁰ Penalties are thus

³² PIA 2021, s. 110.

³³ S. 173.

³⁴ S. 32.

³⁵ S.125 PIA 2021, Chapter 1, Part IV.

³⁶ PIA 2021, Part IV, Chapter 2.

³⁷ S. 261.

³⁸ S. 3.

³⁹ PIA 2021, s. 110 (1).

⁴⁰ Ibid.

prescribed for failure to carry out the obligations as prescribed.⁴¹ The NMDPRA on the other hand has the responsibility to determine the domestic gas demand requirement and crude oil required for meeting the DCSO.⁴² Accordingly, the Act seeks to ensure that gas demand for the commercial, industrial and power sectors is met in order to facilitate investment in sectors that need gas to thrive, thereby promoting trade and economic progress.

3.5 Prohibition of Gas Flaring

Although previous regulatory framework made provisions for gas flaring penalties, there were a lot of leeway and loopholes which allowed for the continuous flaring of associated gas which caused massive environmental pollution in areas where they occurred. The Associated Gas Reinjection Act⁴³ did not do much to quell gas flaring. The PIA 2021 seemingly came to ensure that gas flaring was eliminated by making it an offence for gas to be flared except in line with the exceptions provided for under the Act.⁴⁴ Penalties for gas flaring are stipulated thereunder and another important provision under the Act is the requirement placed on licensee or lessee producing gas to submit a natural gas flare elimination and monetization plan to the Commission.⁴⁵ The Flare Gas (Prevention of Waste and Pollution) Regulations though enacted in 2018 is important to consider as it is in line with the PIA and seeks to promote gas flare capture for commercialization.⁴⁶ This is important for the promotion of gas utilization.

4.0 Critical Assessment

It was noted that Nigeria has extensive gas reserves which is more than sufficient to position Nigeria for growth and development. But the decades preceding the enactment of the PIA 2021 did not experience much of the much-needed development. The Petroleum Act of 1969 was particularly disastrous for Nigeria's gas sector as it did not make adequate provisions for the regulation of Nigeria's immense gas resources, investment in the sector or for the utilization of gas so that gas flaring would be minimal. The inadequacy of this Act was vastly responsible for the little to no investment in the sector which was linked to the epileptic power supply in the country, infrastructural deficit, among other unfortunate realities existent at the time.

The enactment of the PIA 2021 was no doubt a transformative legislation especially for Nigeria's gas sector. As stipulated under the Act, one of its objectives was to "promote transparency, good governance and accountability in the administration of oil and gas resources of Nigeria."⁴⁷ The Act did indeed bring about reforms in the industry as promised especially concerning regulation (by creating the NUPRC and NMDPRA), mid-downstream gas licensing, fiscal incentives and domestic gas delivery obligation which have been noted to bring about an improvement in Nigeria's gas sector. Placing special

⁴¹ PIA 2021, s. 110 (8).

⁴² S. 32 (v).

⁴³ Associated Gas Re-Injection Act Cap A 25 LFN 2004. Now repealed by S.310 (1)(a) of the PIA.

⁴⁴ S. 107-108.

⁴⁵ Ibid.

⁴⁶ Amala Umeike and Chizitereihe Oti, 'Regulations for Investors in Gas Flaring Reduction and Utilization Projects' (Business Day: 8th May, 2023). <<https://www.google.com/amp/s/businessday.ng/news/legal-business/article/regulations-for-investors-in-gas-flaring-reduction-and-utilization-projects%3famp>> Accessed 5th June, 2025.

⁴⁷ PIA 2021, s. 2.

importance on the gas sector through the NMDPRA indicates commitment to transforming Nigeria's gas sector realities. Nigeria has begun to benefit from both gas exports and domestic gas utilization.

The Federal Government has expressed commitment in actualizing the provisions of the Act, to expand Nigeria's gas economy and position it for success, as it sees the Act as a solution to Nigeria's gas sector infrastructural gaps.⁴⁸ It is without a doubt that the PIA 2021 was the catalyst for renewed commitment into Nigeria's gas sector. Nigeria's Decade of Gas Initiative which was launched by President Muhammadu Buhari in 2021 was done so in furtherance of the Federal Government's plan to boost gas development Nigeria between 2021-2031, calling it "The Decade of Gas Development for Nigeria".⁴⁹ By this initiative the government sought to partner with the private sector to transform Nigeria into a gas-powered economy by 2030 through investment in gas infrastructure, policy reforms, expanding export projects, investment in gas-to-power projects, gas-to-industries and homes, thereby closing the gaps in Nigeria's gas usage.⁵⁰

Since the enactment of the Act, over 50 companies have been licensed by the Authority to participate in gas processing operations.⁵¹ In 2025 alone, up-to 10 gas distribution licenses were awarded by the government to six companies.⁵² Gas-to-power projects are being commissioned since the enactment of the Act,⁵³ to improve Nigeria's power sector. Additionally, more companies operate in gas transportation network than ever before, giving way for gas utilization to thrive.⁵⁴ By unbundling the licensing system and introducing fiscal incentives for gas, the Petroleum Industry Act 2021, together with Nigeria's gas master plan which was introduced to promote investment in pipeline infrastructure and reinjection projects, creates opportunities for investment and participation in Nigeria's gas sector, which can ultimately enhance gas utilization in Nigeria and promote economic growth in the country.⁵⁵

A number of gas utilization projects which existed before the advent of the PIA 2021 but were slow in progress have received renewed attention since the enactment of the Act. Projects such as NLNG Train 7 project, Ajaokuta-Kaduna-Kano Gas Pipeline Project, OB3 Pipeline Project are in their completion stages,⁵⁶ with new projects in consideration such as Nigeria-Morocco Gas Pipeline Project,⁵⁷ Nigeria-

⁴⁸ Omono Okonkwo, 'PIA is a Solution to Nigeria's Gas Infrastructure Deficit – Ekperikpe Ekpo' (Nairametrics: 25th October, 2023). <<https://nairametrics.com/2023/10/25pia-is-a-solution-to-nigerias-gas-infrastructure-deficit-ekperikpe-ekpo/>> Accessed 5th June, 2025.

⁴⁹ Brevity Anderson, 'The Decade of Gas'. <<https://brevityanderson.com/decade-of-gas/>> Accessed 5th June, 2025.

⁵⁰ Decade of Gas, 'Decade of Gas Initiative 2021'. <<https://decadeofgas.com.ng/about-decade-of-gas>> Accessed 5th June, 2025.

⁵¹ O. K. Nwankwo, et al., 'Understanding the Gas Value Chain in Nigeria as Envisaged by PIA 2021 for Economic Growth'. Paper presented at the SPE Nigeria Annual International Conference and Exhibition 2024.

⁵² Emmanuel Addeh, 'FG Issues Distribution Licenses to Six Firms to Expand in-Country Gas Usage' (This Day: 2th January, 2025). <<https://www.thisdaylive.com/2025/01/29fg-issues-distribution-licenses-to-six-firms-to-expand-in-country-gas-usage/>> Accessed 5th June, 2025.

⁵³ Obinna Nwaoku, 'FG Commits to Clean Energy, inaugurates Gas, Power Plants in Rivers' (The Guardian: 19th March, 2025). <<https://guardian.ng/news/fg-commits-to-clean-energy-inaugurates-gas-power-plants-in-rivers/>> Accessed 6th June, 2025.

⁵⁴ Nwankwo and others (n. 49)

⁵⁵ Ibid.

⁵⁶ Mkpoikana Udoma, 'AKK, OB3 Gas Pipelines will Transform Nigeria's Economy – Ekpo' (Sweet Crude Reports: 9th March, 2025). <<https://sweetcrudereports.com/akk-ob3-gas-pipelinesll-transform-nigerias-economy-ekpo/>> Accessed 6th June, 2025. Ambrose Nnaji, 'Train 7 to Expand LNG Capacity to 30m Tons' (The Nation: 12th February, 2025).

⁵⁷ Energy Capital, 'Nigeria seeks \$25B to Develop Nigeria-Morocco Gas Pipeline' (4th June, 2025). <<https://energycapitalpower.com/nigeria-seeks-25b-to-develop-nigeria-morocco-gas-pipeline/>> Accessed 6th June, 2025.

Equatorial Guinea Gas Project,⁵⁸ Compressed Natural Gas (CNG) Projects for domestic road transportation,⁵⁹ Liquefied Petroleum Gas (LPG) Projects and others for industrial purposes are being developed indicating that there is an increase in both international and domestic gas demand which is important for gas utilization.

Stakeholders in Nigeria's gas sector have commended the government's commitment towards expanding the gas industry by actualizing the PIA 2021 and investments in the various on-going gas projects.⁶⁰ Stakeholders however note that there is need for further streamlining, transparency, balance between foreign investor and domestic investor interests as there exists some shortfalls which are affecting gas industry expansion in Nigeria.⁶¹

While it is generally agreed that the PIA brought much needed reforms for Nigeria's petroleum industry and particularly the gas sector, pending issues and challenges still affect the development of Nigeria's gas sector.⁶² One notable challenge is the fact that the demand for gas currently is becoming increasingly higher than supply despite the increase in gas projects like those aforementioned. The NUPRC has in fact acknowledged that gas demand in Nigeria is rapidly growing and expected to increase at an annual growth rate of up-to 16 percent by 2030, outpacing supply which could lead to 3.1 billion cubic feet per day shortfall in supply.⁶³ This shortfall can hinder optimal gas utilization.

The present state of gas supply shows that there still exists a lack of extensive gas network, transmission and distribution infrastructure across the nation which still hinders full utilization of gas as an energy resource. The Transmission Company of Nigeria admitted that Nigeria's chronic low gas supply hurt the nation's electricity generating capacity.⁶⁴ Due to the lack of extensive gas supply and feedstock shortages, there still exists frequent power outages and high electricity costs because gas-to-power is not yet optimal which stalls economic growth.⁶⁵ Low supply hinders the optimal fulfillment of the domestic gas delivery obligation mandated by Section 110 of the PIA 2021. It is clear that the materialization of measures to increase investments in the gas sector is still slow as infrastructure gaps still and regulatory bottlenecks still exist. Although, the new gas pricing system is in line with the PIA

⁵⁸ Energy Capital, 'Nigeria Signs Natural Gas MoU with Equatorial Guinea' (4th March, 2022). <<https://energycapitalpower.com/nigeria-signs-natural-gas-mou-with-equatorial-guinea/>> Accessed 6th June, 2025.

⁵⁹ Dare Olawin, 'CNG will reduce Transportation Costs – FG' (Punch Newspapers: 27th February 2025). <<https://www.google.com/amp/s/punchng.com/cng-will-reduce-transportation-costs-fg/%3famp>> Accessed 6th June, 2025.

⁶⁰ Dipo Oladehinde, 'Streamline Gas Regulations to boost Investment – NGA' (Business Day: 10th March, 2025). <<https://businessday.ng/energy/article/streamline-gas-regulations-to-boost-investment-nga/#google-vignette>> Accessed 7th June, 2025.

⁶¹ Ibid.

⁶² Areremi and Emaviwe (n. 2)

⁶³ NUPRC, 'Rising Gas Demand in Nigeria could Outpace Supply by 2030 Despite Major Projects' (NUPRC: 3rd October, 2024). <<https://www.nuprc.gov.ng/rising-gas-demand-in-nigeria-could-outpace-supply-by-2030-despite-major-projects-nuprc-warns/>>

⁶⁴ Yunus Kemp, 'Nigeria: Cost of Energy Production to Increase as Natural Gas Price upped' (ESI Africa: 2nd April, 2024). <<https://www.esi-africa.com/finance-and-policy/nigeria-cost-of-energy-production-to-increase-as-natural-gas-price-upped/>> Accessed 7th June, 2025.

⁶⁵ Oladehinde Oladipo, 'Gas-rich Nigeria faces Blackouts as Supply shortage worsens' (Business Day: 26th January, 2024). <<https://www.google.com/amp/s/businessday.ng/energy/article/gas-rich-nigeria-faces-blackouts-as-supply-shortage-worsens/%3famp>> Accessed 7th June, 2025.

2021, the imbalance between regulated and unregulated market mechanisms affects gas pricing which may make gas costly for consumers since gas supply to strategic sectors is not yet optimal.⁶⁶

The gas export subsector has not been so great either. There has been a drop in Liquefied Natural Gas exports from Nigeria. The International Gas Union 2024 World LNG Report revealed that Nigeria's LNG exports had dropped by 13 percent from 15.1 million tonnes in 2022 to 13 million tonnes in 2023 due to feedstock shortages, taking Nigeria from sixth position to eight position in the list of LNG exports from countries.⁶⁷ This reduction has been attributed to the ever-present challenge of insecurity in the oil producing regions, pipeline vandalism, leakages and aging fields which have led to declining output.⁶⁸ A reduction in exports can lead to a reduction in revenue and jobs which is not great for Nigeria's economy.

Another present challenge affecting gas utilization is gas flaring. Although efforts over the decades and after the emergence of the PIA to curb gas flaring has been successful, gas flaring still persists, placing Nigeria among the top ten countries globally where gas flaring still occurs.⁶⁹ The persistence of gas flaring has affected gas supply for the gas market. This is particularly bad for Nigeria's gas economy because gas flared is much needed and can be utilized for commerce, power and industry. Gas flaring not only affects the economy but the environment as well. Gas flaring is one of the significant causes of environmental pollution in the Niger Delta, creating severe ecological and health impacts.⁷⁰ The fact is that gas flaring still persists, notwithstanding the reforms put in place through the Gas Master Plan, PIA and Decade of Gas Initiative, due to present infrastructural deficits especially infrastructure for reinjection, processing and distribution for utilization.

It can thus be argued that whereas due to the PIA and additional initiatives discussed above, reforms have been made in Nigeria's gas sector which has improved the state of affairs and has made gas more beneficial for Nigeria, the aforementioned challenges hinder optimal gas utilization in Nigeria.

5.0 Conclusion and Recommendations

This paper has examined the realities of Nigeria's gas sector in light of the Petroleum Industry Act 2021 and preceding regulatory framework. It was revealed that prior to the PIA and related reforms, Nigeria gas sector suffered greatly because the Petroleum Act of 1969 did not make adequate provisions for gas sector investment and gas utilization. The answer to the question posed is therefore nuanced. The Petroleum Industry Act 2021 has indeed brought reforms for Nigeria's gas sector as extensively discussed in this paper which is a new era for the nation's gas economy. Gas utilization is increasing

⁶⁶ Ifeanyi Onuba, 'How new Gas Price Template for Strategic Sectors will Benefit Nigerians' (Premium Times: 4th April, 2024). <<https://www.premiumtimesng.com/683138-how-new-gas-price-template-for-strategic-sectors-will-benefit-nigerians-by-ifeanyi-onuba.html>> Accessed 7th June, 2025.

⁶⁷ Nse Anthony, 'Liquefied Natural Gas Export from Nigeria Drops by 13%' (Leadership Newspapers: July, 2024). <<https://leadership.ng/liquefied-natural-gas-export-from-nigeria-drops-by-13/>> Accessed 7th June, 2025.

⁶⁸ Ibid.

⁶⁹ C. Nwaoha and D. A. Wood, 'A Review of the Utilization and Monetization of Nigeria's Natural Gas Resources: Current Realities' (2014) 18 *Journal of Natural Gas Science and Engineering* 412-432.

⁷⁰ J. P. Esavwede and U. G. Oyibodoro, 'Gas Flaring in Nigeria's Niger Delta: Legal Challenges and Lessons from Norway's Regulatory Framework' (2025) 5 (1) *Journal of Environmental Law and Policy* 18-166.

now than ever before. Gas flaring has dropped significantly due to reinjection and increased investment in associated gas utilization.

The projects embarked upon and increased investment in the gas sector is proof of renewed commitment towards making Nigeria's gas industry profitable for not just the government but for investors and the masses. But this is not all there is to Nigeria's gas economy as revealed in this paper. Challenges centering around low gas supply, persistent gas flaring, insecurity resulting in pipeline vandalism and leakages and infrastructural deficit affect the implementation of the PIA 2021 to achieve much needed turnaround in Nigeria's gas sector. Nigerians still struggle with average to low power supply, CNG for transportation is still very limited and Nigeria's gas exports have fallen due to the aforementioned challenges. The good news, however, is that these challenges can be resolved. Nigeria can learn from other gas rich countries, such as Qatar that have been able to reduce flaring, maximize exports making it among the top five natural gas exporting countries and optimize its gas utilization for electricity, commerce and industry. This paper makes recommendations to that effect which if implemented will place Nigeria's gas sector on the right track for success.

These recommendations are as follows:

- i. Renewed Political Will by Government to Implement Petroleum Industry Act 2021, Gas Policy, Master Plan and Initiatives

The key to a profitable gas economy lies in the will of the government to increase implementation of the provisions of the Act. The Act brings extensive reforms for the gas sector particularly as regards regulatory institutions, mid-downstream licensing and fiscal incentives. Implementing the aforementioned laws, policies, plans and initiatives boosts investor confidence in the government, thereby encouraging investment in Nigeria's gas sector.

- ii. Further Investment in Gas Reinjection, Transmission and Utilization Infrastructure to Increase Gas Supply

It is crucial for the government to upscale investment in gas, processing, distribution and utilization infrastructure, so that there will be more gas available for the strategic sector which includes the power and industrial sector and for the commercial sector which will enhance gas utilization and improve exports.

- iii. Balance between regulated and unregulated Market Mechanisms to make Gas affordable

There needs to be a balance between regulated and unregulated market mechanisms, coupled with transparency in the industry which can be fostered by the NUPRC and NMDRA and competitive pricing which will make gas affordable. Price control and lack of infrastructure need to be promptly addressed to unlock the potential of the gas sector for domestic energy use, foreign exchange earnings and power generation, all of which will transform Nigeria into a profitable gas economy.