

LEGAL FRAMEWORK FOR THE ADOPTION OF COMPRESSED NATURAL GAS (CNG) IN NIGERIA: INVESTMENT OPPORTUNITIES, INCENTIVES AND CHALLENGES

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1. Introduction

The energy industry is a global market, and domestic energy policies and implementations are predominantly shaped to align with international trends and standards. This pattern for domestic alignment with global trends is not unconnected from the need to demonstrate capacity, conformity, and unionistic behaviour to avoid being red-flagged or sanctioned in the international market, which would have varying damning effects on a country like Nigeria.¹

Discussions on energy transition date back over 4 decades ago after the 1973 oil crisis², when it was perceived that there would be a decline in global oil production in the future. This discussion was later globalised by the United Nations in 1981³ after the 1979 second oil shock.⁴

In recent years, the debates on energy transition have been underpinned by the immediate need for climate change mitigation, preservation, and sustainability of the earth's habitation. This discussion culminated in the Paris Agreement, in which the parties committed to limiting global warming to 1.5°C and ensuring that greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030.⁵ This requires a rapid energy transition with a downshift of traditional fuel production to stay within the carbon emissions budget. At the COP26, H.E. President Muhammadu Buhari announced Nigeria's commitment to carbon neutrality by 2060. This commitment was followed by the passing of the Climate Change Act 2021, and Nigeria's Energy Transition Plan (ETP) was also unveiled.⁶

The Energy Transition Plan acknowledged the role Natural Gas must play as a transition fuel on Nigeria's path to net zero, considering Nigeria's abundant gas reserves and energy security considerations.

Recent developments in the Nigerian energy industry have indicated a motivation for energy diversification, promotion, and investment in Natural Gas as an alternative to diesel fuel⁷ is not limited to environmental preservation but is also geared towards economic emancipation, revitalisation, and improvement of the standard of living due to natural gas's cost-effectiveness.⁸



¹ Chen, Y. E., Fu, Q., Zhao, X., Yuan, X., & Chang, C. (2019). International sanctions' impact on energy efficiency in target states. *Economic Modelling*, Volume 82, November 2019, Pages 21-3482, 21-34. <https://doi.org/10.1016/j.econmod.2019.07.022> <accessed on July 2024>

² Adam Hayes, *1973 Energy Crisis: Causes and Effects* <accessed on January 2025>

³ Basosi, Duccio (2020-03-20). "Lost in transition. The world's energy past, present and future at the 1981 United Nations Conference on New and Renewable Sources of Energy". *Journal of Energy History*. <accessed on July 2024>

⁴ Lucas Downey, *1979 Energy Crisis: Definition, History, Causes, and Impact* <accessed on January >

⁵ <https://unfccc.int/process-and-meetings/the-paris-agreement> <accessed on July 2024>

⁶ Nigeria's pathway to achieve carbon neutrality by 2060 available at <https://energytransition.gov.ng/> <accessed on July 2024>

⁷ Universal Technical Institute "CNG v LPG LNG Fuel: Understanding the Differences" available at *How CNG can sustainably drive a greener Nigeria — News — The Guardian Nigeria News – Nigeria and World News* <https://www.uti.edu/blog/diesel/cng-lpg-lng-fuel> <accessed on August 2024>

⁸ Nigeria Energy Transition Plan, available at - <https://www.energytransition.gov.ng/#Key> <accessed on August 2024>

This insight focuses on developments in the concerted effort to adopt and commercialise CNG as an alternative to traditional fuels like petrol or diesel. It also highlights the opportunities for investment in CNG in Nigeria and risks or barriers that deserve investors' consideration to properly articulate an effective risk management strategy for the investment.

2. Nature of Compressed Natural Gas

As Nigeria strives towards promoting cleaner energy and reducing the emission of greenhouse gases (GHG), the adoption of CNG as an alternative to traditional fuels like petrol or diesel is a significant step towards achieving cleaner energy and limiting environmental degradation. This is because road transportation has been the dominant mode of transportation in Nigeria, and over the years, most automobiles in Nigeria rely heavily on these traditional fuels. When considering the environmental footprint of GHG in Nigeria, the transport sector alone accounted for 24 per cent of Nigeria's GHG emissions in 2020. Without concerted efforts, there are indications that this may increase by up to 50 per cent before 2035. In the face of escalating global concerns about climate change and environmental degradation, Nigeria stands at a critical juncture where, even if crude oil plays a crucial role in the short and medium terms, concerted efforts are required to transition to cleaner energy. Given the current high cost of traditional fuels like petrol or diesel in Nigeria, the adoption of CNG presents a promising opportunity for Nigeria to align with this global shift and ensure climate sanity. Compressed Natural Gas is a gaseous fossil fuel consisting primarily of methane (CH₄), the shortest and lightest hydrocarbon molecule, and is preferred as an alternative to diesel fuel because it is lighter than air and so tends to dissipate.⁹ It is a natural gas under pressure that remains clear, odourless, non-poisonous, and non-corrosive. The storage of CNG inside a cylinder is achieved through compression at a higher-pressure range of 200–300 bar, and since CNG is lighter than natural air, it typically disperses after leakage, thereby providing a considerable benefit over liquefied petroleum gas and conventional fuels.¹⁰

The Federal Government has initiated several policies and programs to promote the utilisation of natural gas in Nigeria. One of them is the National Gas Flare Commercialisation Programme (NGFCP), which was launched in 2016 with the aim of reducing gas flaring by capturing and commercialising flared gas. The NGFCP is expected to create 300,000 jobs, produce 600,000 metric tons of LPG per year, and

⁹ Semin, Awang Idris, Rosli Abu Bakar, (2009), An Overview of Compressed Natural Gas as an Alternative Fuel and Malaysian Scenario, *European Journal of Scientific Research*, ISSN 1450-216X Vol.34 No.1 (2009), pp.6-15.

¹⁰ Nguyen, V. N., Nayak, S. K., Le, H. S., Kowalski, J., Deepanraj, B., Duong, X. Q., Truong, T. H., Tran, V. D., Cao, D. N., & Nguyen, P. Q. P. (2024). Performance and emission characteristics of diesel engines running on gaseous fuels in dual-fuel mode. *International Journal of Hydrogen Energy*, 49, 868-909. <https://doi.org/10.1016/j.ijhydene.2023.09.130>

generate 2.5 gigawatts of power from new and existing plants. One of the potential uses of flared gas is to produce CNG for vehicles and industries. Another policy is the National Gas Expansion Programme (NGEP), which was launched in 2020 to stimulate the growth of the domestic gas market and create a natural gas-based economy. The NGEP focuses on four key areas: Autogas (CNG and LPG), industrial clusters, virtual pipelines, and power generation. The NGEP aims to convert one million vehicles to run on CNG by 2021 and create 12.5 million direct and indirect jobs by 2025.

In Nigeria, further to the Presidential CNG Initiative (Pi-CNG), 12 CNG stations were commissioned by the Nigerian National Petroleum Company Limited (NNPCL) in partnership with the Nigerian Independent Petroleum Company (NIPCO) to drive CNG adoption and access in the FCT and Lagos.¹¹ The above initiative was followed by the Federal Government releasing the list of FG-accredited Autogas conversion centres in Nigeria.¹² In like manner, President Bola Ahmed Tinubu, on August 12, 2024, commissioned 30 hybrid Compressed Natural Gas (CNG) buses and declared Compressed Natural Gas (CNG) transportation as an economic necessity for Nigeria, signalling a significant shift in the country's approach to public transportation and energy use. The President emphasised the urgent need for Nigeria to utilise its vast natural gas resources in the transportation sector, noting that countries like India have mandated the use of CNG for all commercial vehicles since 2004 and reiterated the Government's commitment to leverage Nigeria's abundant gas deposits to enhance the nation's energy competitiveness and bring about transformative changes.¹³

These recent developments underscore Nigeria's commitment to energy transition and diversification. With proper policy reforms that incentivise investments in this sector, Nigeria's path to energy sustainability, economic prosperity, environmental preservation, and climate change goals will be assured.



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3. Legal and Regulatory Framework for Compressed Natural Gas Adoption in Nigeria

The 1999 Constitution of the Federal Republic of Nigeria (as amended) provides that the entire property in and control of all minerals, mineral oils, and natural gas in, under, or upon any land in Nigeria or in, under, or upon the territorial waters and the Exclusive Economic Zone of Nigeria shall vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National Assembly.¹⁴

¹¹ Mary Izuaka, NNPC, NIPCO commission 12 CNG stations in FCT, Lagos, [NNPC, NIPCO commission 12 CNG stations in FCT, Lagos \(premiumtimesng.com\)](https://premiumtimesng.com) <accessed on July 2024>

¹² Cynthia Egboboh "Full list of FG's Autogas conversion centres in Nigieris" available at <https://businessday.ng/news/article/full-list-of-fgs-autogas-conversion-centres-in-nigeria/> <accessed on January 2025>

¹³ Jonathan Nda-Isaiah "NNPC Foundation Donates 10 CNG Buses to DAPPMAN Initiative" available at <https://leadership.ng/nnpc-foundation-donates-10-cng-buses-to-dappman-initiative/> <accessed on January 2025>

¹⁴ Section 44(3) of the Constitution of the Federal Republic of Nigeria, 1999 (as Amended).

In the exercise of its powers to legislate on the management of natural resources under the 1999 Constitution, the National Assembly enacted the Petroleum Industry Act (PIA) of 2021,¹⁵ which defines petroleum to include natural gas.¹⁶ The PIA conferred wide powers on the Minister of Petroleum to administer the Act, formulate, monitor, and administer government policy in the petroleum industry, and give general policy directives to the Commission on matters concerning upstream petroleum operations and to the Authority on issues relating to midstream and downstream petroleum operations.¹⁷ It suffices to say, therefore, that the Petroleum Industry Act (PIA), passed in 2021, is the primary regulatory framework for the entire oil and gas sector, including CNG.¹⁸

It is essential to state that the PIA classified petroleum operations under the Upstream, Midstream, or Downstream operations and established the Nigerian Upstream Petroleum Regulatory Commission (the Commission)¹⁹ responsible for the technical and commercial regulation of the upstream petroleum operations and the Nigerian Midstream and Downstream Regulatory Authority (the Authority)²⁰ Responsible for the technical and commercial regulation of the midstream and downstream petroleum operations.

Natural gas production is, therefore, usually an incident of crude oil exploration that requires a Petroleum Exploration License, a Petroleum Prospecting license, and a Petroleum Mining Lease (PML), formally known as an Oil Mining Lease (OML).²¹

The administration of the midstream and downstream gas operations is within the purview of the Nigerian Midstream and Downstream Regulatory Authority (the Authority).²² The PIA further provides that the Authority shall make regulations or guidelines for the grant or renewal of licences for midstream and downstream petroleum operations.²³ Further to the above power conferred on the Authority, it has, over time, issued Regulations that, cumulatively with the PIA, constitute the legal framework for the operation and adoption of CNG in Nigeria. **The Midstream and Downstream Petroleum Operations Regulations 2023.** (the Regulations), as one of the legal frameworks, it makes provisions for the licensing regime for CNG operations in Nigeria. The licences required to carry out midstream and downstream CNG operations are as follows:

¹⁵ An Act to provide legal, governance, regulatory and fiscal framework for the Nigerian Petroleum Industry, the development of host communities and related matters.

¹⁶ Section 318 of the Petroleum Industry Act

¹⁷ Section 3 of the Petroleum Industry Act

¹⁸ John O. Oladipo; 'CNG Adoption in Nigeria: Legal Frameworks, Economic Significance, Risks, and Mitigation Strategies' <https://www.opinionnigeria.com/cng-adoption-in-nigeria-legal-frameworks-economic-significance-risks-and-mitigation-strategies-by-john-o-oladipo/> Accessed on October 15, 2024

¹⁹ Section 4 of the Petroleum Industry Act

²⁰ Section 29 of the Petroleum Industry Act

²¹ Section 70(1) of the PIA.

²² Part IV, Section 125 of the PIA.

²³ Section 113 (1) of the PIA.

- i. **Gas Processing Licence** authorises the holder to install and operate facilities for the removal of impurities and production of ethane, propane, butane and other natural gas liquids and marketable natural gas, gas to liquid plants, LNG plants, ethane extraction plants and other plants requiring a gas processing license.²⁴
- ii. **Bulk Gas Storage Licence** grants the licensee the right to store natural gas in bulk either for its own account or on behalf of customers.²⁵
- iii. **Gas Transportation Pipeline Licence** grants the holder the exclusive right to own, construct, operate, and maintain a gas transportation pipeline within a route defined in the license for its account with third-party access provisions or as a common carrier as may be stipulated in the license.²⁶
- iv. **Gas Transportation Network Operator Licence** authorises the holder to convey natural gas through the gas transportation network, balance the inputs and offtakes from the gas transportation network, charge for the use of the gas transportation network, etc.²⁷
- v. **Wholesale Gas supply licence** authorises the holder to purchase natural gas directly from any lessee or third party and sell and deliver wholesale gas to wholesale customers and gas distributors at any location in Nigeria.²⁸
- vi. **Retail Gas Supply Licence** authorises the holder to sell or retail compressed or liquified marketable Natural gas to customers and establish, construct, and operate facilities to deliver compressed natural gas. It also authorises the holder to purchase marketable natural gas directly from a lessee, a wholesaler gas supplier, or a third party and sell and deliver compressed or LNG to customers at any location in Nigeria on a free market basis.²⁹
- vii. **Gas Distribution Licence** grants the holder the right to establish, construct, and operate a gas distribution system and to distribute and sell its natural gas to consumers in a local distribution zone, including retail customers.³⁰
- viii. **Domestic Gas Aggregation Licence** is issued for 2 years, and renewal is also for 2 years in each instance. A domestic gas aggregator supports the implementation of the domestic gas delivery obligation in addition to other functions that it is expected to carry out.³¹

²⁴ Section 129 of the PIA.

²⁵ Section 132 of the PIA and Section 17 of the Midstream and Downstream Petroleum Operations regulation (2023).

²⁶ Section 135 (1) of the PIA.

²⁷ Section 138 of the PIA and Section 15 of the Midstream and Downstream Petroleum Operations Regulation (2023).

²⁸ Section 142 of the PIA and Section 18 of the Midstream and Downstream Petroleum Operations Regulation (2023).

²⁹ Section 146 of the PIA and Section 19 of the Midstream and Downstream Petroleum Operations Regulation (2023).

³⁰ Section 148 of the PIA and Section 15 of the Midstream and Downstream Petroleum Operations Regulation (2023).

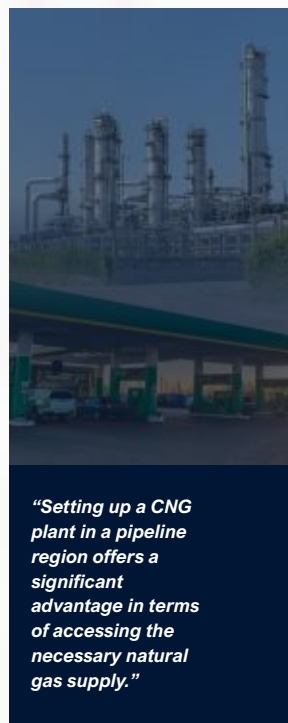
³¹ Section 153 of the PIA and Section 20 of the Midstream and Downstream Petroleum Operations Regulation (2023).

4. Legal & Social Incentives for Compressed Natural Gas Adoption in Nigeria

One of the roles of Government is to shape human behaviour, and one of the ways of achieving this is through policy formulation and execution. It, therefore, follows that where the government desires to encourage investment in a sector, it has to first make the industry attractive by promoting ease of doing business in that sector and the economy generally, in addition to creating other attractive incentives for investors in the industry. With this knowledge and in furtherance of Nigeria's National Gas Policy and Energy Transition Plan, the Federal Government has put some incentives in place to encourage investment in CNG operations and its adoption as a preferred alternative to PMS.³² The market for CNG in Nigeria presents significant opportunities alongside notable gaps that must be addressed to realise its full potential. Despite Nigeria's substantial natural gas reserves, estimated at over 200 trillion cubic feet, the transition to CNG has been slow due to infrastructure limitations, high initial conversion costs, and low public awareness.

Setting up a CNG plant in a pipeline region offers a significant advantage in terms of accessing the necessary natural gas supply. However, Nigeria faces challenges with gas pipeline infrastructure, which hinders the growth of the CNG sector. Virtual pipeline distribution models, which use trucks²⁴ to transport CNG, are presented as a solution to bypass the need for extensive pipeline construction. This approach can be particularly beneficial in regions with existing pipeline infrastructure but lacking last-mile connectivity. The Presidential CNG Initiative aims to rapidly expand CNG infrastructure, with plans to establish numerous CNG stations across the country, thereby making it accessible to a broader population. For example, the collaboration of NNPC with NIPCO Gas Ltd. aims to set up 35 CNG stations by 2025, potentially serving over 200,000 vehicles daily.³³ This initiative not only reduces fuel costs but also supports energy security by leveraging abundant natural gas reserves in Nigeria. The prospects for CNG in Nigeria are increasingly promising, especially in the transportation and cooking sectors, given the current economic and environmental landscape.

The transportation sector presents a significant opportunity for CNG adoption, driven by the potential cost savings for consumers and revenue generation for investors.



"Setting up a CNG plant in a pipeline region offers a significant advantage in terms of accessing the necessary natural gas supply."

³² National Gas Policy, 2017.

³³ C. Izuora, "NNPC-NIPCO CNG Devt To Serve 200,000 Vehicles Daily", available at [https://Leadership.Ng/Nnpc-Nipco-Cng-Devt-To-Serve200000-Vehldaily/#:~:Text=The%20partnership%2C%20which%20seeks%20to,200%2C000%20vehicles%20daily%20in%202024%20.\)](https://Leadership.Ng/Nnpc-Nipco-Cng-Devt-To-Serve200000-Vehldaily/#:~:Text=The%20partnership%2C%20which%20seeks%20to,200%2C000%20vehicles%20daily%20in%202024%20.)) <accessed on January 2025>

Compared to petrol and diesel, CNG offers substantial cost benefits. As of recent estimates, the price of CNG per litre equivalent is approximately NGN 250 per litre, compared to NGN 950 per litre for petrol and NGN 1403.96 per litre for diesel.³⁴ This price differential translates into significant savings for vehicle operators. At these prices, let's consider, for example, a commercial bus operator who typically consumes about 50 litres of petrol per day could save up to NGN 35,000 daily by switching to CNG, amounting to annual savings of over NGN 12 million.

For investors, the revenue potential is equally promising. Given that Nigeria has over 12 million registered vehicles³⁵, with a significant portion used for commercial transportation, the potential market for CNG is vast. If just 10% of these vehicles were to convert to CNG, the demand could reach over 1.2 billion litres equivalent per year. Assuming a profit margin of NGN 30 per litre, investors could generate annual revenues exceeding NGN 36 billion from the transportation sector alone.

In the cooking sector, CNG provides a cost-effective alternative to both biomass and Liquefied Petroleum Gas (LPG). The current cost of LPG in Nigeria is approximately NGN 1483.69 per kilogram,³⁶ whereas CNG, when measured in energy equivalence, could cost as low as NGN 230 per kilogram. For a typical household consuming 15 kg of LPG per month, switching to CNG could result in monthly savings of around NGN 18,800 or NGN 225,600 annually. The potential market size in the cooking sector is substantial, with over 40 million households in Nigeria. If 5% of these households adopt CNG as their primary cooking fuel, the demand could reach 300 million kilograms annually. Investors entering this market could see significant returns, particularly if they target urban centres where the infrastructure for CNG distribution is more feasible.³⁷

The Federal Government has provided some incentives to strengthen the seamless transition to the use of CNG in Nigeria, which are discussed below.

A. TAX INCENTIVES

The fiscal incentives provided by the Federal Government for investment in CNG operations are contained in the circular, F.1781/T/39, issued by the Honourable Minister of Finance and the Coordinating Minister of the Economy on December 7, 2023, titled "Fiscal Incentives for the Presidential Gas for Growth Initiative" (the Circular).³⁸ The circular provides for the following incentives:³⁹

³⁴ Intercity "Discover fuel prices at leading stations in Nigeria" available at [Fuel Prices | IntercityNG](#) <accessed January 2025>

³⁵ Nbs, <https://nigerianstat.gov.ng/>, <accessed January 2025>

³⁶ Nbs, <https://nigerianstat.gov.ng/>, <accessed January 2025>

³⁷ Ahmed Adamu "Unlocking The Potential of Compressed Natural Gas (CNG) In Nigeria: A Technical and Market Analysis " available at [D1506034247.pdf](#) <accessed on January 2025>

³⁸ Federal Ministry of Finance, Circular F.17981/T/39 "Fiscal Incentives for the Presidential Gas Growth Initiatives" 7th December 2023.

³⁹ Wale Ajayi, Federal Ministry of Finance issues Circular on fiscal incentives for presidential growth gas initiatives, tax-alert-issue-2.3-february-2024 - KPMG Nigeria <accessed on July 2024>

To reduce the cost burden of CNG adoption in Nigeria, the Nigerian government has implemented tax incentives to make CNG more attractive to investors and stakeholders. These incentives provide financial benefits and are designed to expedite the expansion of CNG.

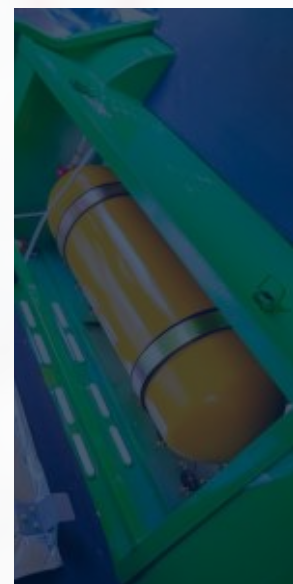
The Circular delineates key fiscal incentives aimed at stimulating and supporting the growth of the gas sector within the framework of the Presidential Gas Growth Initiative. The incentives include an import duty waiver on all items or equipment listed under Appendix 1 of the circular imported in relation to Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG), which shall now be imported at a zero per cent duty rate.⁴⁰

The circular also provides for zero-rated value-added tax (VAT) for specified items, which include Feed Gas for all processed gas, Compressed Natural Gas, Compressed Natural Gas (CNG) equipment components, conversion and installation services, and all equipment and infrastructure related to the expansion of CNG, LPG, and the Presidential CNG Initiative, including conversion kits.

To enjoy the above incentives, importers of Compressed Natural Gas equipment must apply and obtain a letter of support from the Office of the Special Adviser to the President on Energy to be exempted from import and customs duty.

B. CNG CONVERSION PROGRAM

The Federal Government, through its Presidential Compressed Natural Gas Initiative (P-CNGi), has kicked off a free CNG conversion program for vehicles across states in Nigeria. The program will see selected vehicles converted from petrol to CNG at no cost to the owners. This program seeks to promote the adoption of CNG as the conventional fuel for transportation. The P-CNGi signed a Memorandum of Understanding (MoU) to convert one million commercial vehicles to CNG by 2027, selecting 2,000 workshops to support the project.⁴¹



5. Challenges to Accelerated Adoption of Compressed Natural Gas in Nigeria

Notwithstanding the government's efforts to promote the use of compressed natural

⁴⁰ Appendix 1 of the Circular

⁴¹ Caleb Obiwo, FG activates CNG conversion program in 8 states, plans expansion to 9 More before year end.

<https://nairametrics.com/2024/09/14/fg-activates-cng-conversion-program-in-8-states-plans-expansion-to-9-more-before-year-end/> accessed October 2, 2024.

gas (CNG) as a cleaner and more cost-effective alternative to traditional gasoline and diesel fuels, the result of these efforts leaves more to be desired due to some challenges that have hampered the rate of CNG adoption in Nigeria.

One of the significant challenges for widespread CNG adoption in Nigeria is the absence of sufficient CNG infrastructure. Unlike diesel fuel stations that are easily accessible at all locations, there is limited diesel fuel available at CNG conversion centres and CNG refuelling infrastructure.⁴² It is also worth noting that the limited CNG infrastructure is yet to be evenly distributed nationwide in furtherance of the goals behind the inauguration of the Presidential CNG initiative by the Nigerian President, as no single CNG infrastructure has been set up in quite a number of the states of the federation, the Presidential Compressed Natural Gas Initiative announced that Nigeria now has 171 CNG conversion centers.⁴³ This limited availability of CNG infrastructure makes it challenging for potential CNG vehicle owners to access the fuel, deterring them from switching from traditional fuels and thus limiting the widespread adoption and profitability of investment in the market.⁴⁴ There is also existing misinformation on the safety of CNG conversion and durability, which needs to be dispelled.

Another challenge to CNG adoption in Nigeria is the absence of awareness and efficient sensitisation of the citizens on the benefits derivable from transitioning from diesel fuel to CNG. It is common knowledge that converting a vehicle to run on CNG or purchasing a CNG-powered vehicle requires significant upfront investments, which one would not ordinarily undertake unless the person understands the long-term benefits of the capital expenditure he would incur in the process of the transition to CNG. For instance, converting a petrol vehicle with a 1.6-litre engine can cost between ₦300,000 and ₦400,000, while larger vehicles may incur costs up to ₦1.8 million.⁴⁵

To address these challenges and accelerate the adoption of CNG in Nigeria, a multi-faceted approach is required. The government should, in addition to the targeted incentives already being implemented, invest in the expansion of the CNG conversion and refuelling infrastructure in all the states of the federation to be situated in the most accessible and strategic areas of the state in the first instance.

In addition to the above, the government should collaborate with other industry stakeholders to undertake a comprehensive public sensitisation and education drive to enlighten Nigerian consumers about the benefits of CNG, address their concerns, and encourage the transition from traditional fuels like petrol or diesel.

⁴² Cyrus Ademola "FG, NNPC commission 12 new CNG stations in Lagos, Abuja" available at <https://nairametrics.com/2024/07/05/fg-nnpc-commission-12-new-cng-stations-in-lagos-abuja/> accessed on October 2024.

⁴³ Princess Etuk "Nigeria's CNG conversion centres reach 171, aiming for 200 by year end" available at Nigeria's CNG conversion centres reach 171, aiming for 200 by year-end accessed on January 2025

⁴⁴ Ismaila Umaru Lere "Why CNG Adoption is Stuttering in Nigeria" <https://www.thevaluechainng.com/why-cng-adoption-is-stuttering-in-nigeria/> accessed October 2, 2024.

⁴⁵ Chika Izuora. "Cost Slows CNG Conversion as Alternative Auto Fuel. Leadership News" available at <https://leadership.ng/cost-slows-cng-conversion-as-alternative-auto-fuel/> accessed on December 2024

6. Considerations for CNG Investors in Nigeria

The transition to using CNG in Nigeria is still evolving, and Investors need to navigate the complex regulatory landscape.

1. **Licence and Permits:** Investors in the CNG transportation initiative will need to obtain necessary licences and permits from the National Midstream and Downstream Petroleum Regulatory Authority (NMDPRA) and the National Automotive Design and Development Council (NADDC), and follow any guidelines provided. There are several categories of licences available, and the specific service being offered will determine the appropriate licence to be obtained. Additionally, all activities of these Investors must comply with Environmental Impact Assessment regulations set by the National Environmental Standards and Regulations Enforcement Agency (NESREA).
2. **Safety Standards:** Investors must adhere to the strict safety standards set by the Federal Road Safety Corps (FRSC), which is responsible for road safety, including regulations related to CNG vehicle conversion and operation and the Standard Organization of Nigeria (SON), which sets standards for CNG equipment and installations.
3. **Pricing and Distribution:** Investors must adhere to the pricing regulation set by the Nigerian Midstream and Downstream Petroleum Regulatory Authority to create fair and competitive pricing practices and further adhere to the regulations of the various distribution networks.

7. Recommendation for Stakeholders

1. Create a specialised agency focused on CNG adoption to streamline policy development, coordinate efforts across government departments, and enforce standards.
2. Expand safety regulations and standards for CNG vehicles, refuelling stations, and conversion workshops, including rigorous certification processes for all stakeholders.
3. Define specific, time-bound targets for CNG adoption and infrastructure development supported by robust monitoring and evaluation systems. Implement

regular reporting and public disclosure of key performance indicators to ensure transparency and accountability in achieving these goals.

4. Encourage local manufacturing and technology transfer through regulations that mandate minimum local content for CNG equipment and vehicle components. Facilitate joint ventures between international providers and local firms. Establish certification programs for local technicians and engineers specialising in CNG technologies and develop strategic infrastructure regulations to ensure equitable access to CNG refuelling stations.
5. Implement mechanisms for consumer protection, including mandatory warranties for CNG vehicles and conversion kits, competitive pricing regulations, and a specific consumer complaint resolution process. Mandate data collection and sharing from vehicle manufacturers, converters, and refuelling station operators to support evidence-based policymaking and continuous improvement of the CNG program while ensuring user privacy.⁴⁶

8. Conclusion

Nigeria's move toward the use of compressed natural gas (CNG) offers a positive path toward a future in which energy is more ecologically friendly and sustainable. Reduced greenhouse gas emissions, cheaper fuel prices, and less reliance on imported gasoline are just a few benefits of CNG. However, there are many obstacles in the way of Nigeria's widespread adoption of CNG, which have been highlighted to include the absence of sufficient infrastructure for CNG production, distribution, and retail sale to the final consumers, amongst other challenges that need to be addressed in order to accelerate the nationwide adoption of CNG as a suitable alternative for traditional fuel.

Therefore, while the adoption of CNG in Nigeria holds great promise for a cleaner and more cost-effective energy landscape, addressing the existing legal, infrastructural, and financial barriers is essential for realising its full potential. To actualise this, the government has to implement targeted policies to attract investments in this sector so that Nigeria can leverage its abundant natural gas resources to enhance its energy security and economic prosperity.

⁴⁶ Kingsley Jeremiah "How CNG can sustainably drive a greener Nigeria" available at [How CNG can sustainably drive a greener Nigeria — News — The Guardian Nigeria News – Nigeria and World News](#) <accessed on January 2025>

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