

Post- Subsidy Removal: Unlocking the Utilisation of Compressed Natural Gas (CNG) as a Vehicular Fuel in Nigeria



Introduction

Adopting Compressed Natural Gas (CNG) as an alternative transportation fuel in Nigeria portends significant socio-economic and environmental impacts for its people. While adopting CNG would create new jobs, its displacement of Petroleum Motor Spirit, as the national fuel of choice, would significantly reduce carbon emissions, in line with Nigeria's net zero target by 2060. CNG is a compressed or concentrated form of natural gas used in a combustion engine and is considered relatively safer than traditional vehicular fuels. However, until the recent removal of the Nigerian PMS subsidy, the high up-front costs associated with converting vehicles from PMS to CNG hybrid vehicles have posed a significant obstacle to its adoption.

While CNG has always been slightly less expensive than conventional fuels, such as PMS and diesel, the initial cost of converting PMS-fueled vehicles to CNG hybrid vehicles, calculated as being between N350,000 and N450,000, has always been cost-prohibitive for private citizens. Yet, the price of CNG is currently set at N130 per litre, as opposed to the N620 post-subsidy price of PMS. Nigerians are taking a second look. With such a wide pricing differential, the upfront conversion cost will be offset by the savings on fuel costs over time. Studies have also shown that PMS consumes more energy than CNG when driving at an average speed of 100km/hr and

has a remarkably lower fuel consumption than PMS.

However, despite the significant potential of CNG in Nigeria, several barriers hinder the widespread adoption of this fuel. Some of these barriers are:

- 1 Inadequate Infrastructure:** The natural gas industry has a significant infrastructure deficit ranging from processing, logistics and utilisation, such as the lack of pipelines to transport natural gas to CNG stations and limited CNG refuelling stations across the country.
- 2 Low Investment and Funding:** The cost of converting petrol and diesel cars into Compressed Natural Gas (CNG) engines and the limited number of refilling stations are key issues de-laying greater use of gas-powered vehicles on Nigerian roads. The high cost of purchasing CNG vehicles and importing conversion equipment poses a considerable risk to the widespread adoption of CNG in Nigeria.
- 3 Low awareness and acceptance:** Many Nigerians are unfamiliar with CNG as an energy source, which has led to scepticism from consumers regarding its safety and reliability.

- 4 Technical challenges:** Nigeria has an acute shortage of trained technicians and mechanics for CNG vehicles due to the overreliance and dependence on conventional energy sources.

Policy Recommendations

The federal government should implement the following recommendations to promote the utilization of Compressed Natural Gas in Nigeria.

- 1 Enhancing Infrastructure Development:** Increased investment in the pipeline network, speedy development, and the expansion of CNG refuelling stations will encourage the widespread adoption of CNG in Nigeria.
- 2 Awareness Creation and Education:** Through nationwide public awareness campaigns emphasising the benefits of CNG, the government can conduct enhanced educational programs and training for professionals in the natural gas sector to help upgrade their skills. The government can partner with research and academic institutions to promote research and development in the energy sector.
- 3 Strengthening Fiscal Incentives:** Financial incentives like reduced taxation, tax holidays, low-interest loan programs and grants for small and medium entrepreneurs to help attract investors to the natural gas sector. The federal government must establish a well-regulated pricing framework to bolster investor confidence and promote long-term sustainability.
- 4 Temporary Subsidies:** The government should provide temporary price subsidies on CNG vehicle conversion to encourage the widespread adoption of CNG.
- 5 Addressing Policy Regulatory Framework:** Standard regulations that cover safety, licensing, approvals and compliance procedures should be enacted and implemented. The government should build the capacity of regulatory bodies that monitor strict implementation while collaborating with non-governmental organisations and other relevant stakeholders to work together to increase sustainable economic and technical feasibility.
- 6 Enhancing International Collaborations:** International collaboration to gain insights and increase knowledge transfer to promote best practices will improve the potential of CNG in Nigeria. These partnerships will also facilitate access to funding opportunities, eventually leading to a thriving commercial CNG market in Nigeria.

Conclusion

CNG promises to be a cheaper alternative to PMS; however, there is a need for the government and key stakeholders to implement the identified approaches to address the accompanying challenges for widespread adoption.