

The Role of Nigeria's Petroleum Industry Act (PIA) of 2021 in Addressing the Energy Trilemma of Security, Sustainability, and Affordability

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<https://doi.org/10.56201/ijemt.vol.12.no9.2026.pg127.135>

Abstract

Balancing energy security, affordability and environmental sustainability, the three objectives of Energy Trilemma is one of the problems that has plagued the Nigerian oil and gas industry. The Petroleum Industry Act (PIA) of 2021 aims to address these issues by providing a comprehensive legal, governance, regulatory, and fiscal framework to revitalize the sector. This paper examines the PIA's potential to balance the energy trilemma of security, equity, and sustainability in Nigeria. The study employs doctrinal research methods, analyzing existing literature and secondary data. Key findings suggest that the PIA enhances energy security through regulatory reforms and investment incentives, promotes energy equity by reducing costs and increasing access, and supports environmental sustainability by encouraging clean energy investments and establishing environmental remediation funds. However, the PIA's hydrocarbon focus raises concerns about its adequacy in facilitating a broader energy transition. The Act's successful implementation could significantly advance Nigeria's economic development and energy sector resilience, aligning with global energy transition trends. Nonetheless, further efforts are needed to address ongoing challenges, such as gas flaring and the integration of renewable energy sources.

Key words: Energy Trilemma, Petroleum Industry Act (PIA), Sustainability.

1. Introduction

According to Extractive Industries Transparency Initiative (EITI), Nigeria is world's 12th largest producer of oil and the largest in Africa. It also holds the largest natural gas reserves on the continent. The oil and gas sector play a significant role in the economy, contributing about 65% of government revenue and over 85% of total exports. The first legislation to regulate the sector merely resulted in what became known as the 'oil curse' on the nation. However, it was during the 2000s-2010s that it became a non-renewable source of income due to the increasing demand for energy by the growing global population. It became the economic mainstay of the nation, an avenue to bridge the gap in domestic energy demand and contributed to substantial foreign direct investment in some oil resource-rich regions worldwide. In contrast, some countries like Nigeria have become energy debt-laden because of domestic energy unreliability and unaffordability despite their energy abundance. The life value for people in these energy-rich nations appears to be ever challenging.

1.1 Background of the Petroleum Industry Act (PIA)

Prior to the PIA, the oil and gas industry had four major regulations. Exploration, production and distribution of petroleum products in Nigeria was regulated by several statutes and subsidiary legislations. The most prominent of these laws is the Petroleum Act 1969, Petroleum Profits Tax Act, Deep Offshore and Inland Basin Production Sharing Contract Act, and Associated Gas Reinjection Act. Most of the laws and regulations are outdated and inconsistent with present economic and industry realities. The Petroleum Industry Act now provides a more robust framework to drive growth within the sector (PwC, 2021).

After protracted deliberations and considerations, the Nigerian Senate on the 1st of July 2021, passed the Petroleum Industry Bill (PIB) which was signed into law by the President in August 2021 with slight modifications and to be known as the “Petroleum Industry Act (PIA)” to address fundamental issues that have afflicted the oil and gas industry in Nigeria for over many decades. These issues and the attempts in the form of policies, reforms, wasteful investments, environmental degradations, agitations and demanding acts of vandalizations, blew up despite expensive hosting of energy business throughout various government and ministerial policy forums and think tanking. The 5th Senate saw a thorough collaborative and transparent review of extant legislative frameworks with all stakeholders. The long-awaited Act promises a new approach to petroleum exploration and development in keeping with evolving global energy economics in the march towards clean energy by creating a framework to foster linkages with the hydrocarbon value chain which historically thrived on total resource base exclusion during the colonial period.

Nigeria’s Petroleum Industry Act (PIA) 2021, is one of the most audacious attempts to overhaul the petroleum sector in Nigeria. The Act seeks to provide legal, governance, regulatory and fiscal framework for the Nigerian Petroleum Industry. Despite being a major source of revenue, the oil sector lags other sectors in terms of GDP contribution. If implemented diligently, the PIA will help facilitate Nigeria’s economic development by attracting and creating investment opportunities for local and international investors. Nigeria is Africa’s largest market, with a young, growing and vibrant population. The population is forecast to grow by an average of 2.6% per annum (World Bank, 2020). This population growth is expected to fuel greater energy demand. This Act is expected to stimulate exploration, enterprise productivity, attract investments, maintain the social license of responsible environmental stewardship and socio-environmental share by reducing the uncertainties in the sector and promoting direct government take of earnings. The bill was enacted to minimize the ills attributed to poor indigenous investment, supposed industry over-regulation, poor government take, FPID expense abuse, and reduced hydrocarbon asset utilization.

The key goals are to help direct earn as much as possible operational expenditures towards deployed investments using a total cost and assure indigenous participation in the sectors at appropriate levels. Both the non-existing total cost and local content monitoring bill have been addressed by the act. One of the challenges that convinced policymakers to address the overdue reforms is the local content demands by indigenes and the society given the stagnated state of the economy almost a decade and half later. Furthermore, the Act aims to promote sustainable practices by encouraging investments and technological advancements to minimize environmental impacts. It recognizes the urgent need for Nigeria, as a major player in the oil and gas industry, to adapt to changing global trends and transition towards renewable energy sources. By fostering collaboration and transparency, the Act seeks to address the longstanding issues that have plagued the sector and hindered its growth and development. It sets the stage for a more integrated and inclusive approach to petroleum exploration and development, ensuring that all stakeholders have

a voice in decision-making processes. The Act also emphasizes the importance of inclusivity and local content development, providing opportunities for Nigerian companies and individuals to participate in the industry and benefit from its activities.

Overall, the Petroleum Industry Act represents a significant milestone in Nigeria's journey towards a sustainable and thriving energy sector that aligns with international best practices and meets the nation's long-term energy needs. With its comprehensive provisions and forward-thinking approach, it is poised to revolutionize the oil and gas industry in Nigeria and position the country as a leader in the global energy transition.

1.2 Definition of the Energy Trilemma

Organizations such as the International Energy Agency (IEA), the European Commission, and many other national governments have identified the "energy trilemma" as a problem and have set about trying to solve it. The energy trilemma refers to the three interconnected goals that energy policymakers and stakeholders strive to balance: energy security, energy equity (accessibility and affordability), and environmental sustainability. It's often depicted as a triangle, with each side representing one of these goals. Achieving progress in one area can sometimes come at the expense of another, making it a challenging balancing act.

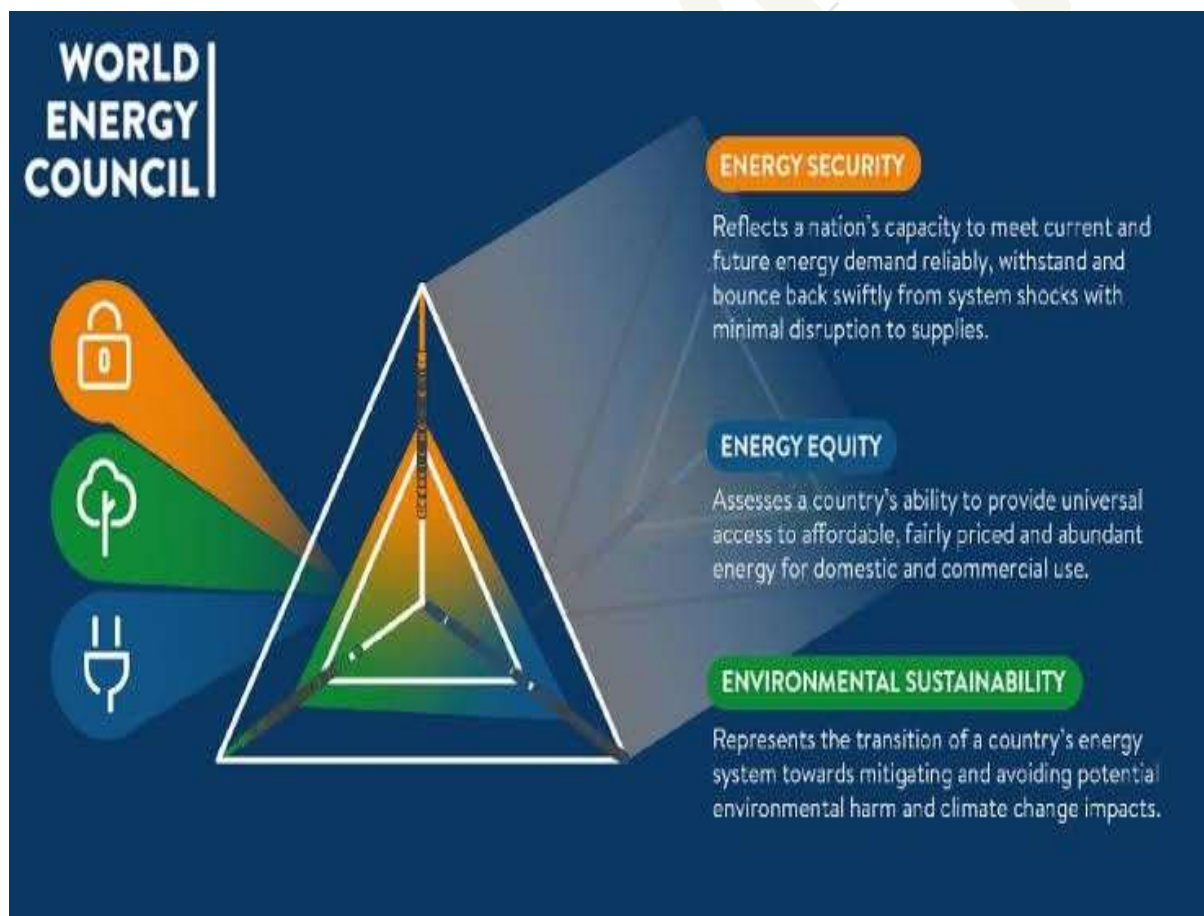


Figure 1: Energy Trilemma (World Energy Council, 2024)

Achieving a balance among these three dimensions is crucial for building a resilient and sustainable energy system that meets the needs of present and future generations. Policies and strategies aimed at addressing the energy trilemma often involve trade-offs and require careful consideration of various socio-economic, technological, and environmental factors. It is worthy of note that the World Energy Council is evolving the World Energy Trilemma framework and its dimensions, extending its use and enabling real-time application through accessible data, new metrics, and expanded practical use of the tool beyond countries to regions and cities as a means of energy transition performance management and pathfinding. The World Energy Trilemma Framework was initially conceived to balance the three pivotal dimensions. Energy security initially focused on safeguarding supply, avoiding shocks from scarcity or geopolitical tensions all the while ensuring the lights stayed on. Energy equity grappled with the key questions of energy access and affordability. Environmental sustainability advocated for practices that would reduce our carbon footprint and preserve the planet for future generations. The Council has identified that the three dimensions are evolving to reflect new ambitions in managing energy for people and planet and the new threat of poly-crises. Energy security now encompasses the reliability of renewables, availability and accessibility of critical minerals, and resilience in the face of physical and cyber threats. Energy equity has deepened to include new demands for justice, fairer access to and equitable distribution of clean energy benefits, and energy transitions' impact on vulnerable communities. Environmental sustainability has broadened to a holistic concern for planetary health, embracing circular economy principles, the interconnectedness of water, food, and energy systems, and the better alignment of decarbonization efforts with the planet's ecological limits. According to the World Energy Council, Nigeria had an overall score of 39.2 and a rank of 94 in the 2023 World Energy Trilemma Index. The country scored 46 in Energy Security, 25.6 in Energy Equity, and 48.2 in Environmental Sustainability.

2. Objectives

This research paper aims to answer the questions; "How will the Petroleum Industry Act (PIA) of 2021 aid in addressing energy trilemma in Nigeria?"

The study examines the PIA to identify its prospects, policies and provisions aimed at balancing the three pivotal dimensions of the Energy Trilemma: Energy Security, Energy Equity (Accessibility & Affordability), and Environmental Sustainability.

It also seeks to identify the implications for policy makers, industry stakeholders, and researchers.

3. Methods

The methodology the study utilizes is doctrinal research with reports from existing literature and tertiary data sources such as newspapers, the Internet, and websites. Pertinent data collected from these sources were theoretically analyzed and argued with current literature on the subject.

The Petroleum Industry Act (PIA 2021) was examined as the main legal source.

4. Literature Review

The Petroleum Industry Act (PIA) which is categorized into 5 Chapters, 319 Sections, and 8 Schedules was designed to provide legal, governance, regulatory and fiscal framework for the Nigerian Petroleum Industry. It addresses the Energy Trilemma of energy security, affordability, and environmental sustainability in Nigeria through several key provisions:

4.1. PIA and Energy Security

Energy Security is the uninterrupted process of securing the amount of energy that is needed to sustain people's lives and daily activities while ensuring its affordability.

According to the International Energy Agency (IEA), energy security has two main aspects: long-term and short-term energy security. The former deals with investments on energy supply and how it connects to timely economic developments and environmental needs. The latter, on the other hand, mainly tackles the energy system's ability to carry out prompt responses to sudden changes in the energy supply and demand cycle. The IEA's World Energy Outlook 2023 highlights that today's energy and climate policy settings are already set to lead to a peak in demand for each of the fossil fuels before 2030 and a peak in global energy-related CO₂ emissions by 2025. This change in the outlook is the result of efforts by governments to promote clean energy technologies such as renewables, energy efficiency and heat pumps, not only for the climate but also for energy security and affordability objectives. The PIA enhances regulatory frameworks to boost investment in the gas sector. By providing tax holidays and other incentives, the Act aims to increase Nigeria's energy supply and diversify its energy mix (Idiong, 2023). It provides improved regulations and incentives for gas investment with tax holidays of up to 10 years and expansion of incentives to cover midstream gas operations. Section 64 of the act also stipulates that NNPC Limited is to engage in the development of renewable resources in competition with private investors. It also mandates the establishment of the Frontier Exploration Fund to support the exploration of new frontier acreages, thereby increasing the potential for new energy sources within the country. The Frontier Exploration Fund shall be funded by 10% of rents on petroleum prospecting licenses, 10% rent on petroleum mining leases; and 30% of NNPC Limited's profit oil and profit gas in the production sharing, profit sharing, and risk service contracts. NNPC Limited shall transfer the 30% of profit oil and profit gas to the frontier exploration fund escrow account dedicated for the development of frontier acreages only (PIA, 2021).

4.2. PIA and Energy Equity (Accessibility and Affordability)

The 7th goal of the United Nation's Sustainable Development is to "ensure access to affordable, reliable and modern energy for all by 2030," including universal access to electricity and clean cooking, a greater share of renewables in the energy mix, and a doubling of the rate of improvement of energy efficiency. Access to reliable and affordable energy is not just a matter of convenience; it is a fundamental driver of human development and well-being (Ramabharathi, 2024). The IEA defines energy access as "a household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average". This energy access definition serves as a benchmark to measure progress towards goal SDG 7. Energy equity grappled with the key questions of energy access and affordability. However, it has deepened to include new demands for justice, fairer access to and equitable distribution of clean energy benefits, and energy transitions' impact on vulnerable communities. Considering the PIA as a tool to foster energy equity in Nigeria, we can see clearly that the Act includes fiscal measures such as reduced royalty rates and the elimination of certain taxes on hydrocarbons to attract investments. These measures are expected to stimulate economic growth and create jobs, which can help lower energy costs through increased supply and competition. The PIA also introduces a new tax regime for the oil and gas industry. It scraps the Petroleum Profits Tax (PPT) regime/rate and replaces it with the National Hydrocarbon Tax. The new rate of

taxes will be levied on profits of any company engaged in upstream petroleum operations in relation to crude oil profits related to such operations, while companies in Production Sharing Contracts will be charged and assessed separately on the profits from each petroleum mining lease of which the hydrocarbon tax is payable every accounting period. The hydrocarbon tax is in addition to the companies' income tax at the rate of 30%. It is expected that the new regime introduced by the PIA would attract investment to the upstream industry as the terms seem to address and simplify the regulatory and fiscal issues that have plagued the industry. Exempting the deep offshore from Hydrocarbon Tax should attract investment into this segment if complemented with appropriate regulatory terms. Additionally, by promoting gas as a transition fuel, the PIA aims to reduce the cost of energy production and enhance affordability for consumers.

4.3. PIA and Environmental Sustainability

In recent times, clean energy has accounted for the majority of global investments in the energy sector. According to the International Energy Agency (IEA), investments in new power generation are expected to account for 70% of USD 530 billion to be spent on all new generation capacity in 2021. Nigeria, like other parties to the United Nations Framework Convention on Climate Change (UNFCCC) and other treaties aimed at stabilizing greenhouse gas (GHG) emissions (i.e. the Kyoto Protocol and Paris Agreement), participated actively in the 2021 UN Climate Change Conference (COP26) which took place in the last quarter of 2021 in Glasgow. During COP26, Nigeria committed to achieve net-zero by 2060. The PIA recognizes the need for a transition to cleaner energy. It encourages investments in renewable resources and mandates the Nigerian National Petroleum Corporation (NNPC) Limited to engage in renewable energy development.

It also establishes an Environmental Remediation Fund to manage and mitigate the environmental impacts of petroleum operations. This fund ensures that financial resources are available for environmental restoration efforts. License holders in midstream operations are required to set up a decommissioning and abandonment fund which must be held by a financial institution that is not related to the license holder. The regulator will have access to the funds in settling such obligations where the license holder fails to do so. The amount to be contributed will be based on the decommissioning and abandonment plan provided to the authority. The Act also includes provisions for host communities, aiming to ensure sustainable development and address environmental and social impacts at the local level. The Host communities are an integral stakeholder for successful operations in the petroleum industry and as such, the Act has a Chapter dedicated to the development of host communities. The Act creates a framework to support this development, fosters sustainable prosperity and provides direct social and economic benefits to the host communities from petroleum operations. It also seeks to enhance harmonious coexistence between the communities and the operating companies.

5. Results

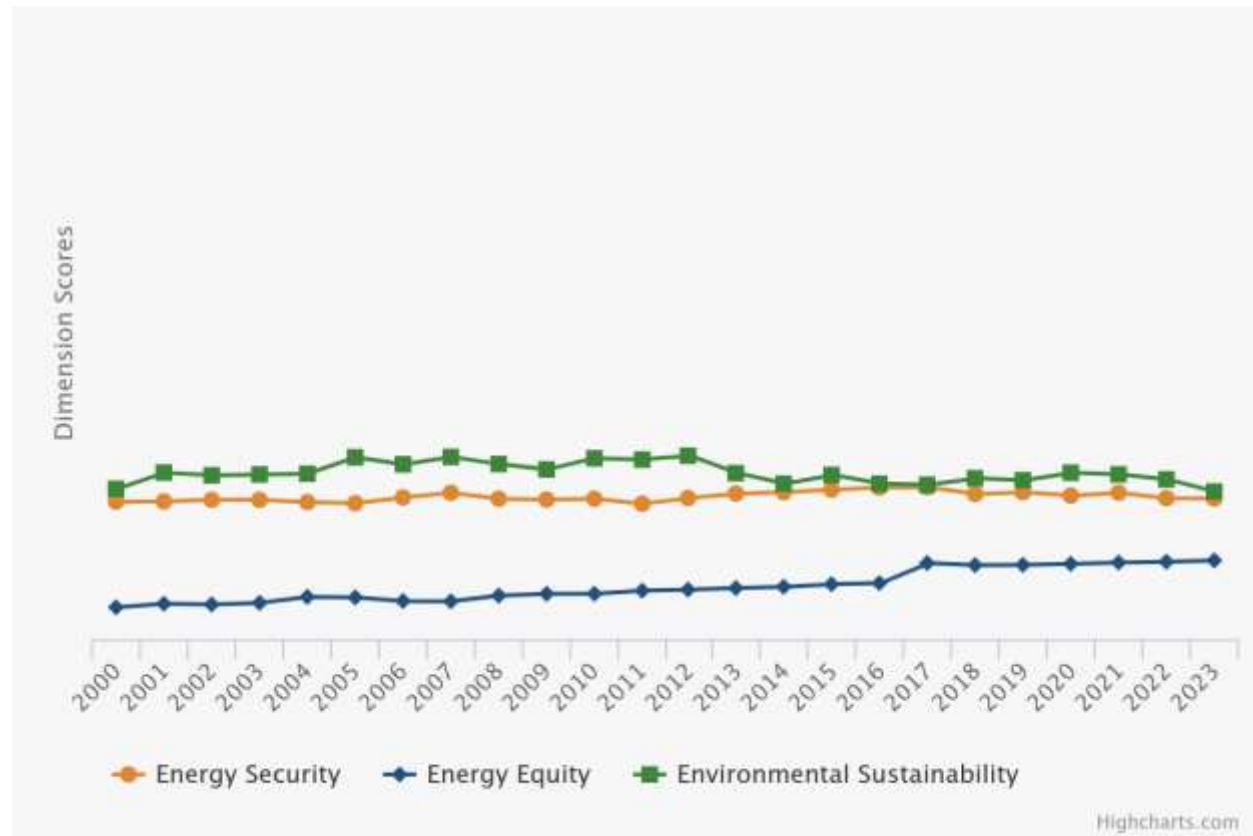


Figure 2: Nigeria's Historical World Energy Trilemma Index (source: World Energy Council)

According to the World Energy Council, from 2021 to 2023, there has been slight changes in Nigeria's energy trilemma index. Energy security score went from 47.77 in 2021, down to 45.96 in 2023. Energy equity score rose from 24.96 in 2021, to 25.65 in 2023 and energy sustainability score went from 53.79 in 2021, down to 48.19 in 2023. From these scores, we can say that there has not been much positive change in Nigeria's energy trilemma index. Infact, the trend has been largely negative. Does this mean that the Petroleum Industry Act hasn't done much on addressing the energy trilemma in Nigeria? maybe. However, there is need for a drastic positive change if we as a nation will attain sustainable development.

6. Implications for policy makers, industry stakeholders, and researchers.

Pertaining to the Frontier Exploration Fund provided by the PIA, exploration is a high-risk endeavor. Additionally, raising the needed finance for the development, production and evacuation from the frontier basins might be a tall order as investors are staying away from high-cost emission-intensive assets. These basins will compete for funds with ambitious and more-environment friendly projects like gas, hydrogen, solar and wind. Rather than a frontier exploration fund, Nigeria could consider setting up a "Future Energy Fund". The amounts being set aside in the PIA for the frontier exploration fund can be applied towards funding the development of Nigeria's future energy potentials, which will include but not be limited to petroleum, in readiness

for the energy transition. The fund can also be deployed for funding the development of abatement technologies that can aid carbon neutrality (PwC, 2021). Without a doubt, the Nigeria's PIA of 2021 is a landmark improvement in Nigeria's oil and gas industry. Nonetheless, the act still has some flaws such as the recurring conundrums of gas flaring that have not been adequately addressed by the act. Likewise, the need for an energy transition in the context of the global demand and campaign against fossil fuels in an era when decarbonization is a global necessity (Borha, 2023).

7. Conclusion

Overall, the PIA provides a comprehensive framework to enhance energy security, make energy more affordable, and promote environmental sustainability in Nigeria.

However, the PIA by its very essence is hydrocarbon-centered. While the PIA is expected to attract investment into the Nigerian oil and gas sector and serve as a catalyst for the development of the sector, the PIA doesn't say much on the energy transition and its likely impact on the sector and its outlook.

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