



Energy Diplomacy and Strategic Engagements: Nigeria's role in Shaping the Global Energy Landscape.

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Abstract

In an ever-evolving global energy landscape driven by climate change and technological advancements, Nigeria stands at a pivotal crossroads. Historically reliant on its abundant oil and gas reserves, the nation now confronts the imperative to diversify its energy mix while skillfully navigating the complex realm of international energy diplomacy. These challenges and opportunities demand a strategic response. The urgency to address these issues cannot be overstated, considering Nigeria's pivotal role on the African continent and its significant influence on the world's energy markets. Failing to adapt not only jeopardizes Nigeria's energy security and economic stability but also undermines global endeavours to achieve sustainable energy solutions. This study scrutinizes three critical facets of Nigeria's energy landscape: firstly, how its historically oil-centric sector adapts to the evolving energy era; secondly, the transformative impacts emerging from Nigeria's growing investments in renewable energy; and finally, how Nigeria's participation in international energy diplomacy aligns with global energy security and sustainability objectives. Drawing on Nigeria as a case study, data from diverse documentary sources such as, including government policies and scholarly inputs, are analyzed within the framework of Complex Interdependence Theory. The findings underscore Nigeria's dual role—confronting challenges in its oil and gas sector while embracing opportunities in renewable energy. Recommendations include a swift transition to renewables, robust infrastructure, enhanced security measures, and strategic partnerships. These actions align with global sustainability goals and uphold the principles of complex interdependence in the global energy arena.

Keywords: Energy Diplomacy, Strategic Engagement, Global Energy Landscape, Nigeria, Trade.

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Introduction

Energy diplomacy, an increasingly prominent facet of international relations, revolves around the pursuit of enhanced access to vital energy resources to bolster energy security (Alkyana&Kartini, 2023). In our modern society, energy has transcended the realm of mere utility; it has become an inseparable facet of contemporary existence, underpinning the proliferation of electrification in multifarious domains (Alkyana&Kartini, 2023). Paradoxically, the surging global demand for energy starkly contrasts with the limitations of finite energy sources. Many nations, like Nigeria, find themselves heavily reliant on fossil-based energy systems, exacerbating climate change concerns while reckoning with the inevitability of resource depletion over time (Alkyana&Kartini, 2023). This confluence of factors Alkyana&Kartini argued constitutes a clarion call for the inception of the Global Energy Transition, a monumental shift away from fossil-based energy paradigms toward the ascendance of renewable energy solutions. The dynamics of energy transition carry substantial geopolitical ramifications. As highlighted in the World Oil Outlook 2045, a long-term forecast publication by OPEC (2021), the global appetite for oil is projected to surge from 82.5 million barrels per day (bpd) to 104.4 million bpd within the years spanning 2021 to 2026. (OPEC, 2021), However, a noteworthy transformation emerges beyond this point, marked by a deceleration in oil consumption. (Хор, К. В. С., Кукеева, Ф. Т., Ауган, М. А., &Кыдырбек, Ф. А., 2023).This shift arises from the concerted efforts of developed nations and insightful developing nations, to pivot significantly toward renewable energy sources, particularly within the domains of industry and transportation infrastructure (Хор, К. В. С., Кукеева, Ф. Т., Ауган, М. А., & Кыдырбек, Ф. А., 2023).

Nigeria has consistently occupied a pivotal and enduring position on the global energy stage, driven by its substantial reserves of oil and gas, a presence that has spanned several decades. However, the contemporary global energy landscape no longer adheres to static norms; it now unfolds as a dynamic and ever-evolving stage. This transformation is spurred by a confluence of factors, including technological advancements, climate change exigencies, and shifting geopolitical dynamics. (Alkyana&Kartini, 2023). Amidst these tectonic shifts, Nigeria's role in shaping the global energy narrative has assumed newfound prominence, propelled by the world's imperative to grapple with unprecedented challenges such as climate change mitigation, energy security, and the pursuit of sustainable development. The 21st century unfolds with a new energy paradigm, driven by technological innovations, environmental consciousness, and shifting geopolitical dynamics. (Kresnawan and Wijaya, 2021)

This article aims to explore Nigeria's dynamic role in this unfolding drama – a role that transcends the conventional boundaries of an oil-producing giant. Nigeria's strategic engagements extend to the forefront of renewable energy initiatives and international partnerships that have the potential to not only reshape its energy landscape but also influence global energy sustainability. Hence, the study is guided by the following questions: How has Nigeria's oil and gas sector, historically a cornerstone of its economy, adapted to the challenges and opportunities of this evolving energy era? What transformative impacts are emerging from



Nigeria's burgeoning investments in renewable energy? How does Nigeria's participation in international energy diplomacy resonate with global energy security and sustainability objectives? To answer these questions, we embark on a comprehensive journey through the multifaceted dimensions of Nigeria's energy landscape.

As we navigate this intricate terrain, we will uncover the historical significance of Nigeria's oil and gas sector, delve into the complexities of its challenges and reforms, and peer into the future, where the nation seeks to carve a sustainable niche. We will illuminate the promising endeavours in renewable energy, where Nigeria is pioneering initiatives that hold the promise of a greener and more sustainable energy future. And finally, we will unravel Nigeria's strategic engagements on the international stage, dissecting the geopolitical implications of its energy diplomacy.

Conceptual Explication

Energy Diplomacy

Energy diplomacy, as aptly defined by Zhao (2019), is a comprehensive framework that encompasses a wide spectrum of strategic thoughts and governmental actions. These actions are meticulously designed not only to safeguard a nation's energy security but also to leverage opportunities within the energy sector (Zhao, 2019, p. 16). This multifaceted concept of energy diplomacy finds diverse expressions on the global stage, reflecting the unique imperatives of nations and regions. Within the framework of OPEC+, Krutikhin and Overland (2020) provide invaluable insights into the intricate interplay of energy diplomacy. Their research sheds light on how member countries engage in coordinated efforts, ostensibly propelled by mutual interests. These efforts are aimed at projecting a façade of multilateral cooperation, a strategic manoeuvre intended to influence market psychology and fortify the prevailing global energy order centred around oil (Krutikhin & Overland, 2020, p. 17). Furthermore, examining energy diplomacy within the Association of Southeast Asian Nations (ASEAN), as illuminated by Kresnawan and Wijaya (2021), reveals a distinct form of energy diplomacy rooted in collaboration. Within ASEAN, member countries partake in collaborative endeavours, forging partnerships with a diverse array of stakeholders including dialogue partners, international organizations, private sectors, and academic institutions. Their collective mission is to achieve regional energy targets, exemplifying a collaborative approach to energy diplomacy (Kresnawan & Wijaya, 2021, p. 18). Turning our gaze to China, Kuteleva (2021) delves into the intricacies of China's unique energy diplomacy paradigm. Her research underscores China's pursuit of bilateral energy partnerships, underpinned by the principle of mutual benefit. China's strategic engagements, particularly in its relations with fossil fuel producers such as Kazakhstan and Russia, emphasize a win-win approach that benefits all parties involved (Kuteleva, 2021, p. 19). In the European Union, energy diplomacy occupies a pivotal juncture in the face of a rapidly evolving global energy landscape. While the EU has yet to establish a unified energy policy among its member states, its ambitions in the realm of energy diplomacy are palpable. As articulated by the European External Action Service (2021), the EU has a steadfast commitment



to leading the charge in the decarbonization of the energy sector. This commitment is manifest in a keen focus on energy efficiency, the expansion of renewable energy sources, and the adoption of innovative green technologies, including hydrogen (European External Action Service, 2021).

Strategic Engagements

"While the term 'engagements' maintains a consistent and clear meaning within the context of romantic movies, its usage in the realm of statecraft lacks such clarity." (Resnick, 2001). Strategic Engagements in the global arena entail a form of policy of interaction between states, informing bilateral and multilateral friendship geared towards states' goals and interests. It also involved careful planning, assessment and organization of goals by organisations, nations and corporations

As articulated by Tharme (2014), Strategic Engagement assumes a pivotal role. This multifaceted concept transcends the mere attraction and retention of customers, extending its reach to encompass the cultivation of strategic partnerships, the negotiation of international agreements, and the orchestration of diplomatic manoeuvres within the energy sector. (Tharme, 2014), Strategic Engagement, in this context, harnesses the power of science and technology, intertwining them with the intricacies of creative diplomacy and psychological acumen.

Within the sphere of international energy diplomacy, the objective is not merely to attract and secure energy resources but also to navigate the complex web of global energy politics and economics. Strategic Engagement becomes the linchpin for nations and international organizations seeking to ensure energy security, forge cooperative alliances, and advance sustainable energy solutions. It leverages scientific advancements to optimize resource allocation, employs technological innovations for efficient energy production and distribution, creatively negotiates complex international agreements, and taps into psychological insights to foster cooperation among diverse stakeholders. (Tharme, 2014), In essence, within the context of international relations and energy diplomacy, Strategic Engagement emerges as a multifaceted strategy that harnesses a blend of scientific rigour, technological prowess, creative ingenuity, and psychological insight to achieve not only the efficient utilization of energy resources but also the promotion of international cooperation and the pursuit of sustainable energy solutions.

In their comprehensive study of China's strategic engagements, Spry and Lockyer (2022) discern a compelling relationship between the utilization of soft power as a method of engagement and its strategic impact on the United States, particularly in the context of energy diplomacy. While China's engagement with the region has primarily revolved around economic initiatives, it wields soft power as a key channel through which it exerts influence, not only economically but also strategically. (Spry and Lockyer, 2022) This soft power-driven engagement by China holds significant implications for the United States, transcending mere economic competition. In the arena of energy diplomacy, where nations vie for access to vital energy resources and partnerships, China's adept utilization of soft power serves as a strategic instrument. It not only enhances its economic presence but also fosters diplomatic relationships with energy-rich



nations, including those in the Western Hemisphere and Africa as well. Spry and Lockyer, (2022) further argued that within the realm of energy diplomacy, this strategic engagement can manifest through investments in renewable energy projects, the provision of infrastructure development, and forging energy-related agreements. This can be seen in the Nigeria-China economic relationship in renewable energy and infrastructural development in the areas of electricity generation and quality road network construction. These actions enable China to secure access to crucial energy resources while simultaneously establishing diplomatic ties that strengthen its global energy footprint. This analysis of China's strategic engagements efficiently brings to mind the context of strategic engagements in international relations and the neorealist approach to strategic engagements among nations

Nigeria and the Global Energy Landscape

Nigeria, as the largest oil producer in Africa and a significant member of the Organization of Petroleum Exporting Countries (OPEC, 2022), has relied heavily on oil exports as the linchpin of its economy for several decades. (Nitte, 2023) Despite the country's abundant oil and natural gas reserves, a considerable segment of its population still lacks reliable access to electricity, leading to the challenges of unreliability and high energy costs. (Nitte, 2023) Recognizing the imperative of energy security, the Nigerian government has taken proactive measures by implementing various policies and programs aimed at addressing these energy-related issues yet Nitte failed to empirically demonstrate the role Nigeria has played and playing with leading actors in the global energy landscape.

In Nitte's 2023 study, it is evident that the global economy is presently in the throes of a transformative energy shift, driven by an imperative to curtail greenhouse gas (GHG) emissions and combat the far-reaching consequences of climate change. (Nitte, 2023) This transformation is marked by a growing inclination toward clean, sustainable, and cost-effective energy solutions. It signifies a shift away from conventional fossil fuels like coal, oil, and gas towards harnessing the potential of renewable energy sources such as solar, wind, hydro, and geothermal. (Nitte, 2023) Additionally, this transition encompasses the adoption of energy-efficient systems, the implementation of smart grids, and the integration of energy storage solutions. Noteworthy is the Nigerian government's earnest commitment to addressing the impacts of climate change within the country. (Nitte, 2023) This dedication is exemplified by the launch of the Nigerian Energy Transition Plan (ETP), a strategic initiative aimed at achieving the ambitious goal of net-zero carbon emissions by the year 2060. (Nitte, 2023) This plan serves as a testament to Nigeria's resolve to contribute to global efforts in mitigating climate change and transitioning towards a more sustainable and environmentally responsible energy landscape. (Nitte, 2023)

Langerak (2023) underscored the critical importance of transitioning to renewable energy sources to combat global warming and achieve the climate targets established by the European Union in 2050 (EU) (Langerak, 2023). This shift has gained immense significance in light of challenges to the availability of natural gas in Europe due to the Russian invasion of Ukraine,



driving a notable move toward fossil-free alternatives. In light of this dynamism in the energy transition in the global landscape, the need to understand how Nigeria as a fragile developing state fits in the global landscape overwhelmed by the Russian invasion of Ukraine and uncertainties becomes vital.

In Nitte's 2023 research, a comprehensive examination was conducted regarding the influence of the global energy transition on Nigeria's energy security. This analysis took into account the ambitious objectives outlined in the National Development Plan (NDP), which aim to foster substantial economic growth and alleviate poverty among Nigeria's population. Additionally, it scrutinized the government's energy transition plan (ETP), designed to attain net-zero carbon emissions by the year 2060. The central challenge emerges from the imperative of ensuring energy security in a nation heavily reliant on fossil fuels as its primary energy source. (Nitte, 2023) The research underscores the critical necessity of diversifying Nigeria's energy portfolio, tapping into a rich array of renewable energy resources. Simultaneously, it accentuates the importance of achieving equitable access to energy as the country moves toward the increased adoption of natural gas as a transitional fuel. Notably, it highlights the global shift away from investing in new hydrocarbon projects, a trend that carries substantial implications for Nigeria's energy security. Ultimately, the research underscores the pivotal role of energy security in Nigeria's economic advancement and development. (Nitte, 2023) It emphasizes the imperative for the government to uphold sound policies and initiatives that promote the adoption of sustainable energy sources while aligning with the evolving global energy landscape.

In the realm of energy poverty and its implications for economic development in Nigeria, Aigheyisi and Oligbi (2020) conducted a comprehensive analysis using the ordinary least squares estimator. Their study, spanning from 1990 to 2017, revealed a crucial linkage between improved access to electricity and economic development. Energy poverty, they found, exerts a negative impact on a nation's economic progress. Moreover, they highlighted the pivotal roles of domestic investment and the labour force as significant factors in fostering development within the country. On the flip side, foreign direct investment (FDI) inflows, trade openness, and currency depreciation were identified as factors detrimental to Nigeria's economic development. This underscores the country's need for enhanced preparedness to navigate the challenges posed by globalization.

Moving forward to the examination of renewable energy adoption in Nigeria, Osunmuyiwa and Kalfagianni (2016) employed a multi-faceted analytical framework, incorporating niches, regimes, and landscapes. Their study illuminated a stark contrast between high-income and middle-/low-income countries. High-income nations demonstrated pioneering roles in renewable energy adoption, facilitated by regimes equipped with transition-supporting institutions and coalitions. Conversely, middle-/low-income countries lagged, characterized by regimes marked by weak support from political actors. Osunmuyiwa and Kalfagianni underscored the central role played by government and political actors in shaping the energy transition processes within Nigerian states.



Shifting the focus to the potential of renewable energy resources, Ademiloye et al. (2020) emphasized that Nigeria could overcome its persistent electricity shortages by fully harnessing available renewable energy sources. This, they argued, could serve as the solution to provide a consistent power supply for electricity consumers in the country.

Furthermore, Akpabio and Ebeleme (2019) delved into Nigeria's socio-economic benefits arising from a transition to renewable energy sources. They emphasized the vulnerability of the country, heavily reliant on fossil fuels for power generation and economic development, to price volatility and supply disruptions in global oil and gas markets. Their study advocated for a shift towards renewable energy sources as a means to diversify Nigeria's energy mix, enhance energy security, and achieve sustainable economic growth.

Collectively, these studies highlight the pressing need for Nigeria to adapt to the global energy landscape through strategic engagements that promote energy diversification, enhance energy security, and drive sustainable economic development. These strategic initiatives should involve government policies, political actors, and investments in renewable energy to foster a more resilient and responsive energy sector in the face of global challenges and opportunities.

In a comprehensive exploration of energy resource diversification and energy security within the Nigerian context, Yohanna et al. (2021) demonstrated that regions blessed with comparative advantages in natural resources, specifically those with untapped hydroelectric, wind, and solar energy potentials, should be harnessed to their full potential. This strategic approach enables the efficient prioritization of energy distribution for various sectors, including industry, commerce, and households, thus facilitating optimal resource utilization.

Furthermore, the International Monetary Fund (IMF) has offered valuable insights through several reports on the subject of energy transitions. In a recent publication, the IMF (2020) underscored the imperative of transitioning to renewable energy sources as a critical component of sustainable recovery from the COVID-19 pandemic. The report highlighted the potential for renewable energy investments to stimulate job creation, bolster economic growth, mitigate greenhouse gas emissions, and enhance energy security.

Similarly, the World Bank has contributed to the discourse on energy transitions, emphasizing their significance in achieving Sustainable Development Goals (SDGs) and reducing poverty. One of their reports (World Bank, 2019) articulated the multifaceted benefits of transitioning to renewable energy, including improved access to electricity, reduced energy costs, and job creation within the energy sector. This aligns with Nigeria's efforts to adapt to the global energy landscape and enhance energy equity.

Moreover, scholars have delved into the economic implications of energy transitions, as exemplified by Huang's study (2022) on China's energy transition. Huang's findings elucidated the positive relationship between transitioning to renewable energy sources and economic growth, underscoring the role of natural resources and economic factors in driving this transition.



These insights resonate with Nigeria's aspirations to harness renewable energy for sustainable economic development.

The financing challenges associated with energy transitions have not gone unaddressed. Ashaye and Helmi (2019) examined financing options and developments in renewable energy, emphasizing the need to consider funding impacts, policy designs conducive to renewable energy adoption, and incentives tailored to market dynamics. Similarly, Sarangi (2018) advocated for innovative financing mechanisms, such as green bonds and crowdfunding, to overcome these challenges and expedite the transition to renewable energy.

Delving into the geopolitical realm, Höysniemi's research (2022) explored the global energy transition's dependence on Russian energy. The study revealed that a shift toward renewable energy sources posed significant challenges to Russia's economy and geopolitical influence. Consequently, European countries now confront the task of reshaping their energy security strategies after reducing their reliance on Russian energy sources.

In recent years, significant advancements in our understanding of potential energy landscapes have emerged, and these contributions can be attributed to the pioneering work of David J. Wales. These developments encompass a broad spectrum, including both theoretical innovations and computational breakthroughs. A particularly crucial aspect of this progress involves addressing the intricate high dimensionality inherent in molecular and condensed matter systems of contemporary relevance. This complexity is central to unravelling how emergent properties are intricately woven into the energy landscape and, equally important, for accurately calculating these properties while faithfully representing the barriers that separate various structural forms (Wales, 2018). Moreover, these advanced insights into energy landscapes extend to characterizing pathways within their full dimensionality. Hence the need for this study to understand the role and challenges of Nigeria as well as the diplomatic ties with other nations in fostering energy diplomacy. The nation's pursuit of sustainable energy sources aligns with the broader global trend towards clean and renewable energy, contributing not only to energy security but also to economic growth and environmental sustainability. In the context of Nigeria, these insights into energy transitions and their diverse implications hold profound relevance. As Nigeria adapts to the global energy landscape, strategic engagements aimed at diversifying energy resources, optimizing energy distribution, and addressing financing challenges become imperative.

Theoretical Framework

In the case of Nigeria's role in shaping the global energy landscape, Complex Interdependence Theory allows us to explore the intricate web of energy diplomacy, economic relationships, and environmental considerations. Complex Interdependence Theory recognizes that state behaviour is influenced by a range of factors beyond traditional power politics, making it well-suited to analyze Nigeria's multifaceted energy engagements. Complex Interdependence Theory, developed by Robert Keohane and Joseph Nye in the 1970s, is a suitable theoretical framework



for this study. “Interdependence in world politics refers to situations characterized by reciprocal effects among countries or actors in different countries.”(Keohane& Nye, 1977: 8) Robert O. Keohane and Joseph Nye argue against defining interdependence solely as situations of perfectly balanced mutual dependence. They contend that it's the asymmetries in dependence that often serve as sources of influence for actors in their interactions. In other words, actors with lower levels of dependence in an interdependent relationship can leverage this unevenness to their advantage, using the interdependence dynamic as a source of power during negotiations over specific issues and, potentially, in shaping broader discussions on other matters (Keohane& Nye, 1977:10-11). Rana (2025) observed that “a crucial facet of 'Complex Interdependence' is its fusion of opposing perspectives, combining elements of power politics and economic liberalism”. This approach acknowledges and weighs both the costs and benefits inherent in interdependent relationships.

This theory is often applied to analyze international relations in the context of multiple channels of interaction, emphasizing economic interdependence, as well as diplomatic, social, and environmental factors. As Nigeria engages in energy diplomacy, it interacts with various actors in the global energy landscape. Understanding the dynamics of cooperation and interdependence in this context is crucial for analyzing how Nigeria's strategic engagements influence the broader global energy scene. Nye and Keohane's argument about increasing economic interdependence is particularly relevant. Nigeria's role as a major oil producer and exporter makes it a key player in global energy markets. The economic interdependence resulting from energy trade and cooperation can shape Nigeria's relationships with other states and its influence in the global energy landscape. This theory is very significant as It helps frame the broader context in which Nigeria operates as it shapes the global energy landscape through its strategic engagements.

Methodology

This study adopted a qualitative case study approach. Raison d'être for Case studies provides an in-depth exploration of a specific context or phenomenon, allowing researchers to gain a comprehensive understanding of complex issues. In this case, the study involves analyzing Nigeria's energy diplomacy and strategic engagements as a singular case within the global energy landscape. This approach was crucial in identifying key diplomatic initiatives, agreements, and partnerships involving Nigeria in the energy sector such as bilateral agreements, regional collaborations, and interactions with international organizations.

Data were collected from various sources, including government documents, policy papers, and relevant academic literature. Thematic analysis was useful in further identifying recurring themes and patterns in the data. This involved categorizing diplomatic strategies, assessing the impact of energy engagements on Nigeria's global positioning, and examining the role of economic interdependence.



Using a case study methodology within the framework of Complex Interdependence Theory will allow for a deep exploration of Nigeria's energy diplomacy and its impact on global energy dynamics, providing valuable insights into this complex issue.

Data Presentation And Analysis

Nigeria's Oil and Gas

Since it discovered oil in commercial quantity in the 1950s, Nigeria's current energy landscape has predominantly relied on natural gas, considered a transitional fuel, and hydropower, even though the country boasts abundant renewable energy resources like solar, wind, and hydropower. (Nitte, 2023) This energy scenario unfolds amid Nigeria's diplomatic engagements with developed nations. Consequently, the government has initiated strategic policies and programs aimed at fostering the growth of renewable energy, exemplified by the National Renewable Energy and Energy Efficiency Policy (NREEP) and the Renewable Energy Master Plan (REMP). (Nitte, 2023)

However, Nigeria's energy consumption has accelerated over the years with little to no effort by the government toward renewable energy which has had a drastic impact on the Nigeria economy.

Table 1: Nigeria's Energy Overview.

Crude oil and other petroleum liquids	Natural gas	Coal	Nuclear	Hydro	Renewables and other	total	
Primary energy consumption (quad Btu)	1.0	0.8	0.0	0.0		0.1	1.9
Primary energy consumption (percentage)	52%	44%	0%	0%		4%	100%
Primary energy production (quad Btu)	3.4	1.6	0.0	0.0		0.1	5.2
Primary energy production (percentage)	67%	32%	0%	0%		1%	100%
Electricity		23.4		0.0	8.0	0.1	31.5



Crude oil and other petroleum liquids	Natural gas	Coal	Nuclear	Hydro	Renewables and other	total
generation (TWh)						
Electricity generation (percentage)		74%		0%	25%	0% 100%

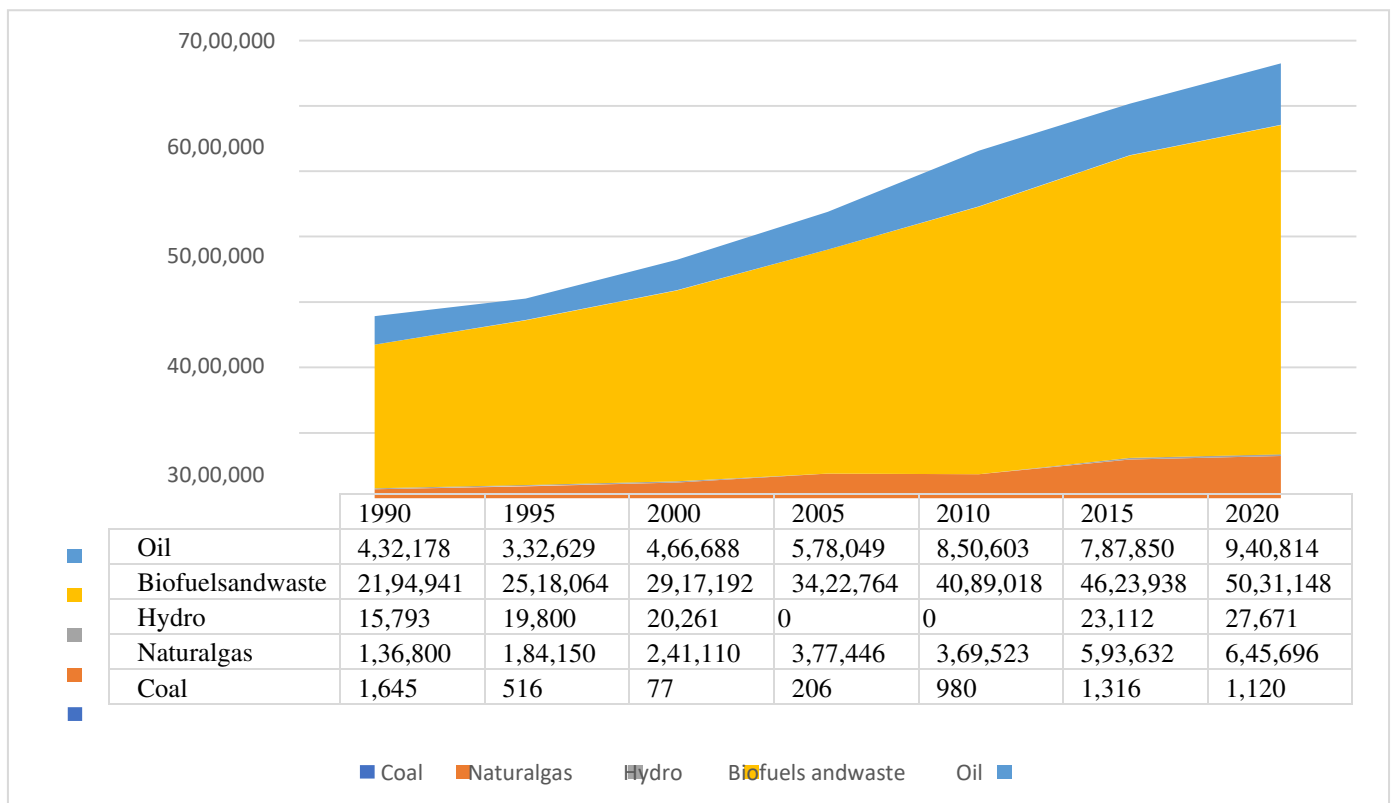
Data source: U.S. Energy Information Administration, International Energy Statistics database 2021

Table 1 above reveals a complex landscape with various energy sources contributing to Nigeria's primary energy consumption and production. This energy profile has implications for Nigeria's energy diplomacy and engagement with other nations. Nigeria's primary energy consumption was dominated by crude oil and other petroleum liquids, accounting for 52% of total consumption. (See table 1 above) This highlights Nigeria's significant role as an oil-producing nation, making it a key player in global energy markets. Energy diplomacy efforts likely revolve around oil trade and partnerships with other oil-dependent countries. Natural gas constituted 44% of Nigeria's primary energy consumption, indicating its importance in the country's energy mix. Nigeria's vast natural gas reserves have positioned it as a critical player in the global natural gas market. While renewables and other energy sources contributed a smaller percentage to primary energy consumption (4%), they are increasingly important in global energy discussions. Nigeria's diplomatic engagements include efforts to diversify its energy mix and collaborate with countries investing in renewable energy technologies. Nigeria's primary energy production was dominated by crude oil and petroleum liquids (67%) and natural gas (32%). This reinforces Nigeria's status as a major energy producer, underscoring its role in shaping energy dynamics regionally and internationally.

In terms of electricity generation, Nigeria relied heavily on hydro (25%) and renewables (100%). This highlights the importance of hydropower and renewable energy sources in Nigeria's electricity generation. Energy diplomacy may involve partnerships with countries specializing in renewable energy technology to enhance electricity generation capacity.



Figure 1. Total Energy Supply (TES) in Nigeria 1990-2020



Source: International Energy Agency (IEA) World Energy Balances 2022 <https://www.iea.org/data-and-statistics/data-product/world-energy-statistics-and-balances> (Culled from Nitte, 2023)

Figure 1, illustrates a unique facet of Nigeria's energy diplomacy – a dominant reliance on biofuels. Biofuels, sourced from organic materials like agricultural remnants, forestry byproducts, and municipal



solid waste, play a pivotal role in Nigeria's energy landscape. This prevalence is largely attributed to the abundance of agricultural waste, including palm kernel shells, sawdust, and rice husks, which are ingeniously transformed into a source of energy. Firewood, a notable biofuel category, holds a commanding presence, constituting over 50% of the nation's total domestic primary energy consumption. This biofuel variety takes centre stage in the household sector (FMP, 2022). By adopting biofuels for energy generation, Nigeria achieves dual benefits. Firstly, it contributes significantly to the reduction of greenhouse gas (GHG) emissions, aligning with global sustainability goals. Secondly, biofuels offer a lifeline to rural communities, often devoid of access to public electricity grids. This vital energy source plays a crucial role in bridging the energy gap in these underserved areas.

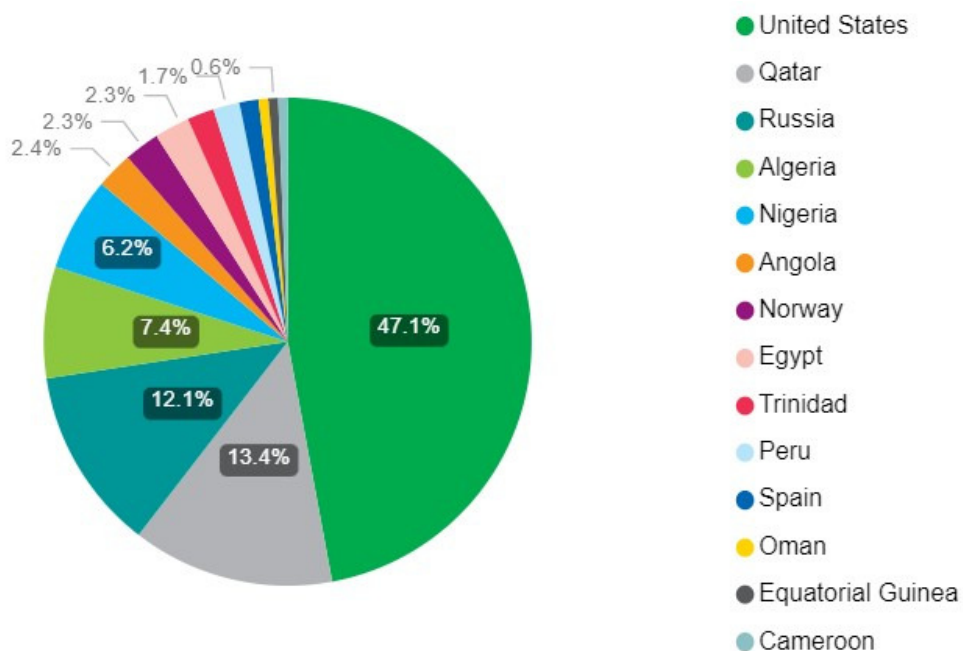
Notably, the cumulative energy supply derived from biofuels in Nigeria is estimated at approximately 5 million TJ. This distinctive energy profile underscores Nigeria's role not only as a global player in the energy diplomacy arena but also as an innovator in sustainable energy solutions, with biofuels at the forefront of its strategy. (Nitte, 2023)

International Partnerships and Impact on Global Landscape

In recent years, Nigeria has emerged as a significant partner for India, particularly in the realm of crude oil supply. (Dash, 2023) India has steadily increased its import of crude oil from Nigeria, with this source now accounting for approximately 8% to 12% of India's total crude requirements. However, beyond the traditional trade in hydrocarbons, the collaboration between Nigeria and India has evolved to encompass various aspects of the energy sector. Like China, India has actively engaged in Nigeria's upstream sector, reaching a crucial stage of involvement in both upstream activities and refining processes. A pivotal moment in this partnership occurred during 2005-2007 when Indian companies actively participated in Nigerian bid rounds and succeeded in securing rights to develop six oil blocks. These included ONGC Mittal (OMEL) with three blocks (OPL279, OPL285, and OPL297), Sterling with two blocks (OPL2005 and OPL2006, with crude production commencing in the latter during the second half of 2011), and Essar with one block (OPL226) (Affairs, 2013). This collaboration not only underscores the depth of the partnership between India and Nigeria but also exemplifies Nigeria's proactive efforts to engage with other nations, both in terms of oil production and broader energy initiatives. It highlights Nigeria's role in shaping global energy relationships and its willingness to partner with countries like India in advancing its energy agenda.



Figure 2: Suppliers of LNG in Europe and Nigeria’s impact on the Global Energy Landscape.



Source: S&P Global Commodity Insights

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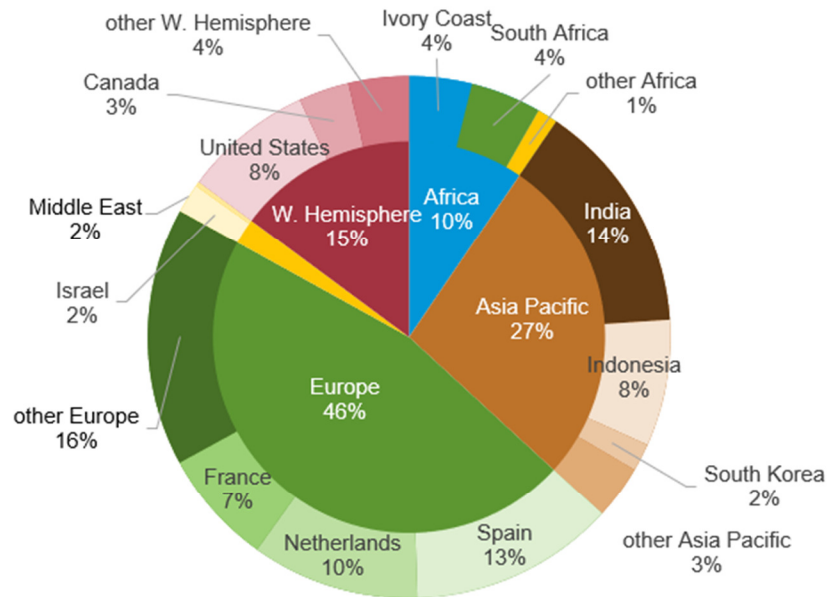
Source: S&P Global (2023)

Figure 2 above, presents the LNG supply sources to Europe in May 2023, it becomes evident that within the European LNG market, the United States stands as the most substantial supplier, commanding a substantial 47% share. Qatar and Russia follow closely behind in terms of supply. Among European import markets, France emerges as the frontrunner, boasting an 18% market share, closely trailed by the United Kingdom and Spain. Nigeria, with a 6.2% share, underscores its significant position in shaping the



global energy landscape. This data underscores the importance of Nigeria's energy diplomacy efforts in securing its presence in the European LNG market and its contribution to global energy dynamics.

Figure: 3 Nigeria's crude oil and condensate exports by destination



Data source: Vortexa

Note: 2022 total export volumes exclude export volumes that have a destination territory labeled as "undetermined"

Figure 4 illustrates key insights regarding Nigeria's role in the global energy landscape:

In Africa, Nigeria exports 127 thousand barrels per day to African countries. Significant export destinations include Ivory Coast (52 thousand barrels per day), South Africa (58 thousand barrels per day), and other African nations (17 thousand barrels per day). This demonstrates Nigeria's role in contributing to energy stability within the African continent through oil exports and fostering regional partnerships. In Asia Pacific: Nigeria exports a substantial 364 thousand barrels per day to the Asia Pacific region. India (193 thousand barrels per day), Indonesia (104 thousand barrels per day), and South Korea (23 thousand barrels per day) are major importers. Nigeria's oil exports to Asia Pacific countries illustrate its global energy diplomacy, engaging with major Asian economies to meet their energy demands. While in Europe, Nigeria's oil exports to Europe total 618 thousand barrels per day. Key European importers include Spain (170 thousand barrels per day), the Netherlands (139 thousand barrels per day), and France (96 thousand barrels per day). This underscores Nigeria's strategic engagement with European nations, contributing significantly to Europe's energy security and supply. While the Middle



East receives a smaller portion (28 thousand barrels per day) of Nigeria's oil exports, Israel (24 thousand barrels per day) and the United Arab Emirates (4 thousand barrels per day) are notable importers. This highlights Nigeria's engagement with Middle Eastern countries, albeit to a lesser extent. Additionally, Nigeria exports 199 thousand barrels per day to the Western Hemisphere, with the United States (107

thousand barrels per day) and Canada (42 thousand barrels per day) being significant importers. Nigeria's presence in the Western Hemisphere reflects its broader global energy engagement, including partnerships with North American countries. (Skopljak, 2022)

The analysis above clearly indicates Nigeria plays a crucial player in international energy partnerships through the exportation of crude oil and condensates to various regions around the world. These exports have a significant impact on the global energy landscape, as Nigeria contributes to the energy security and supply of African, Asian, European, Middle Eastern, and Western Hemisphere countries. Nigeria's energy diplomacy is evident in its strategic engagements with these diverse regions, making it a key player in the global energy arena.

Nigeria's Renewable Energy Odyssey: Balancing Promise and Perplexity

At the vibrant core of West Africa, Nigeria finds itself at a crossroads, where the allure of renewable energy promises a brighter future, yet formidable challenges cast intricate shadows upon this path to sustainability. Within Nigeria's diverse topography lie abundant resources, notably in the forms of hydroelectric and solar power. However, despite their immense potential, these opportunities remain tantalizingly out of reach, ensnared by a complex web of challenges that test the nation's resolve in pursuit of a cleaner and more sustainable energy paradigm (Nitte, 2023).

Nigeria's Hydroelectric Giants: Nigeria's northern territories boast hydroelectric titans such as Kainji, Shiroro, and Jebba, capable of generating over 10,000 MW of electricity—enough to illuminate cities and energize industries (Nitte, 2023). Yet, as of 2012, a mere 15% of this hydroelectric potential had been harnessed, reminiscent of a slumbering giant yearning to awaken from its slumber. The Mambilla power project envisioned as the key to unlocking Nigeria's hydroelectric prowess, finds itself entangled in the intricate tapestry of politics and bureaucracy, where the lack of political will and implementation hurdles cast shadows over Nigeria's ambitions to tap into its hydropower potential (Izuaka, 2022).



The Radiance of Solar Hope: Amid the hydroelectric challenges, solar energy emerges as a ray of hope, as Nigeria bathes in year-round sunlight that beckons solar power as a viable solution (Nitte, 2023). Initiatives spearheaded by the Rural Electrification Agency (REA) seek to harness this immense potential. However, challenges in the form of funding constraints, technological readiness, and public awareness loom ominously, threatening to obscure the full-scale deployment of the solar revolution.

Grid Resilience and Transformation: The grid, a lifeline for power distribution, faces its reckoning as it grapples with frequent blackouts and unreliability (Nitte, 2023). The integration of renewable energy sources, particularly solar, into this ageing infrastructure poses a formidable challenge. Striking a balance between grid stability and the imperative for sustainable energy sources presents a daunting technical and financial conundrum.

Hurdles in Rural Frontiers: In the rural hinterlands, where off-grid solutions are most urgently needed, infrastructure deficits emerge as formidable foes (Nitte, 2023). The expansion of renewable energy technologies necessitates the construction of a robust distribution network. However, many regions continue to languish in energy poverty, hindered by underserved infrastructure, thus obstructing the realization of clean energy access for all.

In this unfolding narrative, Nigeria stands poised at the precipice of its renewable energy odyssey, navigating the intricacies of promise and perplexity. The nation's determination to overcome these challenges, to awaken the slumbering giants of hydroelectric power and embrace the radiance of solar hope, will determine not only its energy future but also its place in the global pursuit of a sustainable tomorrow.

Conclusion:

In this paper, we have examined Nigeria's dynamic role in the unfolding drama as an oil-producing giant in the global energy landscape. Nigeria's strategic engagements and international partnerships have been examined along with Nigeria's oil and gas sector, and Nigeria's burgeoning investments in renewable energy. The study concludes that Nigeria's energy landscape, governed by the principles of complex interdependence, reveals a nation facing both challenges and opportunities. Historically reliant on oil and



gas, Nigeria grapples with disruptions, outages, and declining production. These challenges emphasize the need for adaptation and diversification in its energy sector. Simultaneously, the analysis has shown that Nigeria's journey into renewable energy investments signifies a transformative shift. The nation acknowledges the imperative to reduce fossil fuel reliance, address environmental concerns, and align with global sustainability objectives. In the context of complex interdependence theory, which emphasizes the multifaceted nature of international relations, Nigeria's participation in international energy diplomacy holds the key to addressing global energy security and sustainability goals. By diversifying energy sources and engaging in collaborative renewable energy initiatives, Nigeria plays a crucial role in

reshaping the global energy landscape. Additionally, partnerships with countries specializing in renewable energy technology can play a role in Nigeria's electricity generation strategy.

Recommendations

Drawing from the findings and analysis of this study, the following recommendations were suggested.

1. **Diversify Energy Sources:** Nigeria should accelerate its transition to renewable energy sources, particularly solar and hydropower. This diversification aligns with global sustainability objectives and mitigates the vulnerabilities associated with overreliance on fossil fuels.
2. **Invest in Infrastructure:** To overcome supply disruptions and facilitate renewable energy expansion, Nigeria should prioritize infrastructure development. Enhanced security measures for oil infrastructure and robust grid infrastructure for renewables are essential.
3. **Strengthen International Collaborations:** Nigeria's participation in international energy diplomacy should be further strengthened. The nation should forge partnerships that promote renewable energy technology transfer and knowledge exchange, aligning with the principles of complex interdependence in the global energy arena.

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