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Research Paper

Energy Security in Nigeria: An Examination of Unnerving Legal Issues and The Applicable Legal and Institutional Framework * ** ***

1. A. O. Adeniyi, Department of Jurisprudence and International Law, Faculty of Law l, Ekiti State University, Ado-Ekiti
2.O.O.Omoniyi, Faculty of Law, Redeemer's University, Ede, Osun State
3. O. B. Aiyeleso, Ekiti State Ministry of Justice, Ado-Ekiti

ABSTRACT
Today's modern society cannot be defined without reference to the importance of energy security. The term energy security is a condition that the citizens and businesses of a nation have access to sufficient energy sources at reasonable prices for the foreseeable future and devoid or free from serious risk of major disruption of service. The nexus between adequate energy sources and its legal framework cannot be far-fetched in Nigeria there is vast energy resources but is the country is mal-nourished in terms of adequate energy for its citizens and businesses. The doctrinal method of researched was employed to examine primary and secondary legislation that support the energy sector in Nigeria. This work is in line with goal seven (7) of the sustainable development goals signed by members of the United Nations in 2015. Data was sourced from international and national legal documents, policy papers, textbooks, journal articles and web sources. Energy insecurity is present in Nigeria, not because of inadequacies of law and policies but lack of political will to implement some policies that are in place. Some gaps in law are identified which includes the lack of specific legislation whose goal is security of energy supply like the Energy Security Act of United States. Nigeria has energy good policies like Denmark but there is failure to implement the programs in these policies to tackle the challenge of energy security.

Keywords: *Energy Security, Renewable Energy, Sustainable Development Goals, SDG7*

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I. INTRODUCTION

Energy security is a pivotal issue for all countries irrespective of their level of development. It is a major driver of modern development and economic growth. Policies aimed at securing energy security are one of the most important aspects of policy making for countries, because security of supply is what determines economic growth and economic development. Access to energy at an affordable rate and in an environmentally safe manner is important to any economy, and per capita energy consumption should be the measurement of standard of living in a given country.

Energy security is defined as the presence of energy supply that meets or exceeds energy demand. It is the reliable supply of energy that is provided at a reasonable price.[1]The growing concern for energy security in

[1] D. J. Hough, 'World Trade Organization Agreements and Principles as a Vehicle for the Attainment of Energy Security'(2010) (9) (2) *Richmond Journal of Global Law and Business* 199

most nations has become frequent in agenda of nations and regions are making efforts in securing supply of energy or avoid supply of energy disruption which usually have adverse effect on social, political and economic implications. Security of energy supply is essential in the provision of good health, social amenities and growth.[2] It is the prerequisites for future of global economic growth. It has the possibility of alleviating poverty, which is the major concern of all developing countries such as Nigeria.

The Federal Republic of Nigeria is a country that is richly blessed with great potentials for energy resources which includes coal, crude Oil, natural gas and bitumen. Nigeria is the largest oil producer in Africa and ranks 5th world exporter of Liquefied Natural Gas (LNG.) The Country's location in the world Atlas gives the country renewable energy potentials such as Wind, Solar and Hydropower.[3]

Nigeria is abundantly blessed with adequate energy resources but rated amongst the twenty(20) countries globally with highest deficiency in access to electricity. There are notable long queues at filling stations, which indicate the country's inability to meet up with energy demand in the transportation sector. According to statistics, energy demand in Nigeria exceeds demand exceeds energy supply especially in the power sector.[4] According to the global initiative on accessible, clean and efficient energy, Sustainable Energy for All, populace in Nigeria resort to the use of biomass for cooking and heating which indicate a wide gap between the urban and rural cooking.[5]

Energy security in Nigeria is defined as the ability of the state to provide adequate energy supply to the populace at an affordable price and in an environmentally safe manner. The importance of energy security lies in the essence of development of the country because it increases foreign income because unrefined and refined energy products are exported. Energy production and marketing increase employment rate, generally, productive system and final demand increase. Energy security averts inflation and job loss because it leads to an improvement in energy infrastructure attracts investment thereby increasing foreign direct investment in the country.

II. Background to the Study

Energy security can be traced back to Winston Churchill's decision that the British naval ship should be fueled with oil (petroleum) instead of coal, which was used to power naval ships around the world. Churchill's decision to power the ships with oil leads to the emergence of energy security, which became a matter of national strategy.[6] Since then, since then energy security has become the number one agenda of G-8 group and international institutions.

Initially, energy security was driven by oil market and oil prices but the paradigm shifted from just oil to terrorism, social instability of exporting nations in the middle east, geopolitical rivalries and countries fundamental need for energy to power economic growth. The concentrate of energy security later shifted to availability of sufficient energy resources to meet the world's energy needs. It also extends to major concerns of electricity blackout in developing countries in Europe, China, India and Africa. One of the major concern was the Russia-Ukraine natural gas dispute which led to cut of supply to Europe.[7] Hence, the growing concern of international organizations, nations and regions alike and their various efforts aimed at securing energy security.

The term energy security from the perspective of nations has shifted from the realm of national security to natural resources, infrastructural security and economic market which as reflected in decisions of the developed countries in diversifying energy sources so as to be energy secured and this is evident in countries like Denmark and Germany that has invested huge money in research and development of renewable energy so as to increase the share of renewable energy in their energy supply. Denmark is one of the few countries whose energy policy is aimed at 100% renewable energy by 2050 and 100% renewable energy in electricity and heating by 2035.

Nigeria is richly blessed with energy resources, largest oil producer in Africa and ranks the 5th world exporter of liquefied natural gas (LNG). Nigeria remains in a precarious position with relation to energy security.

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[2] R. D. Cudahy, 'The Bell Tolls for Hydrocarbons: What is next?' (2008) (29)(2) *Energy Law Journ*al 381

[3] S. Ebatamehi, 'Top 10 Most Oil-Producing Countries in Africa 2025' www.eia.gov/beta/international/analysis.cfm?iso=NGA>accessed 27 June 2025

[4] S. Oyedepo, 'Energy and Sustainable Development in Nigeria: The Way Forward' (2012*) Energy Sustainability and Society (*2)(15)

[5] GS Initiative, Gender and Fossil Fuel Subsidy Reform in Nigeria: Findings and Recommendations available at www.iisd.org accessed 28 June 2025

[6] Winston Churchill believed that coal exhausted the ships. He relied on a secure oil supply from the Persia Gulf. His decision leads to the Allied Forces wining the World War 1 in 1918. The Allied Forces consist of Great Britain, United States, France and Russia.

[7] Yergin, D. 'Ensuring Energy Security' (2006)(85) (2)*Foreign Affairs* 69

III. CONCEPTUAL REVIEW

According to the United Nations Development Programme, energy security is the availability at all time in various forms at an economic affordable rate and in sufficient quantities. This implies that a nation is energy secure when it can provide adequate energy to its citizens at all time and at an affordable rate. It is noteworthy that energy security is a dynamic concept.[8] There have been various definitions of the concept.

There is no universally accepted definition of energy security. It is not a static concept but multi-dimensional and slippery. It means different things to different countries and region. It can take on a number of connotations in different context, they nonetheless all insect and influence each other. What determines energy security is the peculiar circumstance of a country. It is a question of whether the country is a developed or a developing country whose potential is under-utilized, to some countries; it means security of energy supply. The concept of energy security considers a country's energy sector vulnerability to political shift and risk.

The term energy security originated in the mid-twenty centuries. It emanated from the word energy and security, which connotes stable energy flow. Flood of definitions extends beyond mere stable energy flow. Pre 1970s, the concept emphasized on the physical availability of energy especially oil[9], in the 1990s, global warming became apparent, thus the definition of the concept became wider and did accommodate environmental challenges.[10] Recently, energy poverty in the developing countries is increasingly discussed under this concept of energy security. Various studies argues that energy security is a complex goal involving questions about how to equitably provide available, affordable, reliable, efficient, environmentally safe, properly governed and socially acceptable energy services.[11]

The International Energy Agency (IEA) proposes energy security to mean an uninterrupted availability of energy sources at an affordable price and further claim that the concept has many facets, which include the long term, and short-term facets.[12] The long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs while the short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in supply-demand balance. The concept is also defined to mean the security of energy supply from sudden physical shortages that can disrupt economic performance and social welfare of the country in the event of supply interruption or unexpected short-term price increase.[13]

The Asia Pacific Energy Research Centre (ASERC)defined energy security to an economy's capacity to ensure the reliable and sustainable supply of energy resources, while maintaining energy prices at levels that do not negatively impact economic performance.[14] ASERC identified three fundamental elements of energy security, the physical energy security, the economic energy security and environmentally sustainable use of energy resources that meets the needs of the present without jeopardizing the needs of the future generation.[15]

It is noteworthy that energy security is not a static concept; it is a concept that progresses day to day. It is the nexus between national security and availability of natural resources for energy utilization.

IV. Components of Energy Security

Energy security in the conventional context is perceived as a national or transnational security issue, as ensuring a reliable supply of fossil fuels is essential for economic operation and the defence of a nation or organisation. Simultaneously, there are apprehensions regarding the effects of fossil fuel extraction on the environment and human health, necessitating a more balanced strategy for achieving overall energy security. The International Energy Agency[16] defines energy security through the following essential attributes;

1. Availability: the capacity to supply energy in a sufficient amount and of a suitable quality in a consistent manner. It is the tangible availability of energy resources that are currently used in the energy system

[8] A. Cherp & J. Jewell, 'The Concept of Energy Security: Beyond the Four As' (2014) available at www.sciencedirect.com accessed 14 July 2025

[9] R. B. Lindsay, 'The Concept of Energy and its Early Historical Development' (1971) 1 (4) *Foundations of Physics* 385

[10] M. Radetzki, ' Shocks: Plausible Shocks in World Energy in the 1990s' (1989) 17 (4) *Energy Policy 332*

[11] B. Barton et.al, Energy *Security: Managing Risk in a Dynamic Legal and Regulatory Environment*. (Oxford University Press, 2004)

[12] J. Kim, A. J. Parton & G. Schwerhoff, 'Energy Security and the Green Transition' (2024) *International Monetary Fund Working Paper 11*

[13] C. Winzer, 'Conceptualizing Energy Security' (2012) 46 *Energy Policy* 37

[14] P. Gasser, 'A Review on Energy Security Indices to Compare Country Performances' (2020) 139 *Energy Policy* available at www.sciencedirect.com accessed 14 July 2025

[15] *Ibid*

[16] J. Strojny, A. Krakowiak-Bal, J. Knaga & P. Kacorzyk, 'Energy Security: A Conceptual Overview' (2023) 16 (13)

in a variety of ways.[17] The essence is to ensure access to sustainable and modern energy in line with goal seven (7) of the United Nations sustainable development goals.

2. Affordability: this is to ensure that energy expenses are maintained at a level that is accessible to all social and economic strata. This is also related to the expenses of the energy system and its affordability for users.

3. Acceptability: the energy must be capable of fulfilling social requirements and anticipations about energy security. This relates to how the public views and supports different energy sources, which frequently includes social aspects like environmental concerns and social assistance. In other words, the energy must not have negative impact on the environment at large.[18]

4. Accountability: Guaranteeing the responsibility of nations and other energy-related organizations for their choices and activities in order to maintain security. This entails having adequate access to energy sources and the ability to employ them to promote social equality.

V. ENERGY SOURCES IN NIGERIA

Nigeria has abundant resources of all forms of energy such as fossil fuels and non-fossil fuel (renewable energy) sources. Energy is the solid rock of production and socio-economic development in any nation. Nigeria, a significant oil producer has a wealth of alternative energy sources. These consist of tar sands, coal, gas, wood and hydropower. Our focus is going to be on renewable and non-renewable source of energy.

A. Renewable Energy Sources: Nigeria is blessed with adequate renewable energy sources. There include solar, wind, hydropower and biomass. The awareness of environmental pollution created a shift to an environmentally friendly energy source known as the renewable energy. Renewable energy sources are characterised as any energy resource that can be replenished naturally at a rate equal to or above the consumption rate of that resource, or as sustainable resource that is abundantly present in nature.[19] It is called re-new-able as the name implies because this is the type of energy that is inexhaustible because it replenishes itself once used. This type of energy provides a safe and feasible option for the provision of clean energy with no production of carbon dioxide emission. Renewable energy sources can be categorized as wind energy, solar energy, hydropower, biomass energy, geothermal energy and ocean energy, which encompass wave energy, tidal energy and ocean current energy.[20]

i. Solar Energy Source: solar energy, which is derived from the sun, is the most affordable and plentiful natural energy source on the planet. It is the process of directly using the sun to generate heat.[21] This has existed since the planet was created and has persisted across time. It is demonstrated by sun drying of clothing, farm products, animals and personal belongings. The development of of numerous uses, including solar cookers, freezers, irons, ovens, dryers and more has led to an evolution in solar energy over time. Nigeria's location on the equator is such that it gives the country high potential for solar energy. This type of energy source is derived from the use of solar cells converting sunlight directly into electricity using a semi conducting material.[22]

ii. Wind Energy: Wind is a natural source of energy that is freely available day to day. Wind energy, also called wind power refers to the process by which wind is used to generate mechanical power or electricity via the use of a wind turbine.[23] As a sustainable substitute for fossil fuels, wind energy has become a well-known renewable energy source. The horizontal movement of air brought on by variations in pressure is known as wind.[24] The primary purpose of wind energy is to produce power. Wind is referred to as a renewable energy source since it will continue to blow as long as the sun is shining. People have been using the energy of the wind since prehistoric times. For example, ships on the Nile River were sailed by the Ancient Egyptians using wind more than 5,000 years ago.[25] A wind turbine produces power by converting the kinetic energy generated by

[17] J. A. Paravantis, 'Dimensions, Components and Metrics of Energy Security: Review and Synthesis' (2019) 69 (4) *SPOUDAI Journal of Economics and Business* 44

[18] H. Khatib et.al, 'Energy Security' available at www.undp.org/sites/g/files/zskgke326 accessed 14 July 2025

[19] J. Twidell and T. Weir, *Renewable Energy Resources* (2nd edn, Taylor & Francis Group, 2006) 13

[20] D. Maradin, 'Advantages and Disadvantages of Renewable Energy Sources Utilisation' (2021) 11 (3) *International Journal of Energy Economics and Policy* 177

[21] F. G. Akinboro, L. A. Adejumobi & V. Makinde, 'Solar Energy Installation in Nigeria: Observations, Prospect, Problems and Solution' (2025) 2 (4) *Transnational Journal of Science and Technology* 74

[22] T. Jian *et.al,* ' A Review on Energy Conversion using Hybrid Photovoltaic and Thermoelectric Systems' (2023) 562

[23] W. Hermann-Josef, 'Introduction to Wind Energy Systems' (2024) available at www.epj.conferences.org accessed 28 July 2025

[24] K. D. C. Sankalpa *et.al*, 'Wind Energy Technologies: A Complete Review of the Wind Energy Technologies' (2024) 5 (3) *Journal of Research Technology & Engineering* 178

[25] E. F. Wind, 'Wind Energy' (2008) available on www.ei.lehigh.edu accessed 28 July 2025

rotating blades by the force of wind into electrical energy. Wind potential depends on certain factors such as average wind speed, statistical wind speed distribution and turbulence intensities.[26] Wind energy has gained worldwide recognition and it is one of the fastest growing renewable energy markets in the world especially in Europe. The utilization level for wind energy in Nigeria is relatively low, at present there is no wind power plant that are connected to the grid. Concisely, Nigeria has good potential for utilization of wind energy but it is yet to utilize this potential.

iii. Hydropower: hydropower, which derives its name from the Greek word *hydor*, which means water, is energy derived from the force of flowing water.[27] Hydro energy is simply energy that is taken from water and converted to electricity. For ages, hydropower has been utilised. The Greeks ground wheat into flour almost 2,000 years ago with water wheels. Machines in American and European companies were powered by water wheels in the early 1800s.[28] The most common method of hydro energy is the hydroelectric dam, where water turbine converts the potential energy of water to cause a shaft rotation and energy is captured to run a generator, power can also be generated from the energy of tidal forces or wave power, which uses the energy created from water waves. For many years, hydropower has been crucial to the reliable, efficient and safe operation of electric power systems. As the largest renewable energy source in the world, hydropower not only produces electricity but also bears a significant amount of the regulatory and balancing burden in numerous power systems worldwide.[29] One of the most effective forms of renewable energy is hydropower.

iv. Biomass: Biomass is an organic matter derived from living matter. In essence, biomass is a source of stored solar energy that is first gathered by plants during the process of photosynthesis, which captures carbon dioxide and transforms it into plant materials, primarily cellulose, hemicelluloses and lignin.[30] It includes a a variety of recently created organic components derived from plants and animals that consume them. This type of energy derived from the energy stored in plants and organic matter. It is used to meet a variety of energy needs, which includes generating electricity, heating homes, providing furls. There are five basic biomass energy materials, which are as follows: virgin woods, energy crops, agricultural residues, food waste and co products. The above-mentioned materials are compounds of carbon, oxygen, nitrogen and sulfur, with significant amounts of free energy in the forms of chemical bonds.[31] In Nigeria, about 70% of Nigerian families rely on fuel wood for cooking, making it the country's most common energy source.[32]

B. NON-RENEWABLE ENERGY

Non-renewable energy is biological materials, which had absorbed carbon dioxide from the atmosphere million years ago. They are formed from the remains of living organisms, which had decayed or decomposed. This includes coal, gas and oil, which contain high energy density and sulphur. Nuclear energy, fossil fuels (coal, oil and natural gas) and several metals and minerals are examples of nonrenewable resources that cannot be swiftly replenished after use.[33] Because of their extraction and use, these resources are frequently vulnerable to depletion and environmental issues.

i. **Coal:** The first discovery of first fossil fuel in Nigeria was in the year 1909 at the bank stream of Udi escapement in Enugu State by a British Mines engineer named Albert Kitson.[34] Coal was mainly used to power trains and for electricity generation. Coal production and use fell precipitously as a result of the switch from coal to diesel for rail powering and to gas and hydro for electricity generation. As a result, Nigeria's two coal-fired power plants in Ijora, Lagos and Oji in Enugu were shut down.[35] There was a drastic decline in the production

[26] A. Yashalom, 'How Can Wind Turn Into Electricity?' (2023) 11 *Earth Sciences* 1

[27] A. K. KUndu & R. Gupta, 'Hydropower an Efficient Renewable Source of Energy: An Analysis' (2022) 3 (3) *International Journal of Recent Advances in Multidisciplinary Topics* 81

[28] *Ibid*

[29] W. Yang, 'Hydropower Plants and Power Systems: Dynamic Processes and Control for Stable And Efficient Operation' (2017) available at www.diva-portal.org accessed 28 July 2025

[30] B. Supply, Bioenergy Project Development and Biomass Supply (2007) available at www.ieabioenergy.com/wp-content/uploads accessed 28 July 2025

[31] Z. Al-Hamamre *et.al*, 'Waste and Biomass Materials as Sustainable Renewable Energy Resources for Jordan' (2017) 67 *Renewable and Sustainable Energy Reviews* 297

[32] T. I. Asefon & K. Adepoju, 'A Review on Fuel Wood Consumption and Implications on the Environment' (2024) available at www.researchgate.net accessed 29 July 2025

[33] G. R. Plitnik, 'Renewable and Nonrenewable Resources' (2025) available at www.ebsco.com accessed 29 July 2025

[34] O. I. Ogunsola, 'Coal Production and Utilization Trends in Nigeria' (1991) 9 (10) *Fuel Science and Technology International* 1211

[35] B. O. Oboirien *et.al*, 'Analysis of Clean Coal Technology in Nigeria For Energy Generation' (2018) 20 *Energy Strategy Reviews* 67 available at www.sciencedirect.com accessed 29 July 2025

of coal because of its unclean environmental factor, at present day, coal fired power plant production and utilisation is very low. The Nigerian Coal Corporation (NCC), which mo nopolised the coal industry, lost its power following the privatization policy implemented by President Obasanjo.[36] Attempts to revitalize the industry has met limited success due to the slow growth of alternative markets and failure to polish mechanization programs. This present day, coal reserves in Nigeria are estimated to be 2-75 billion metric tons which means that coal reserves are yet to be explored to its full potentials.[37]

ii. **Crude Oil:** Nigerian oil prospecting began in 1903, but drilling operations did not begin until 1951. Oil was discovered in 1956 in the Oloibiri community (modern day Bayelsa State) by Shell-British Petroleum.[38] The year 1960 marked the first oil export of 849,075 tonnes of crude oil and since then, the oil industry experienced tremendous growth.[39] Nigeria's main energy source is crude oil, which powers a variety of businesses, transportation and the production of electricity.[40] Nigeria's abundance of natural resources, including natural gas and crude oil which makes it one of Africa's largest energy giants. Consequently, energy exports and the growth of domestic industry have allowed the nation to produce substantial income.[41] Nigeria is a significant player in the world oil market, but corruption and inefficiencies in many areas threaten its energy security. Its supply and cost continue to be a significant problem due to the dependence on petroleum as a substitute electrical source, which has raised high demand.

iii. Natural Gas: this is another source of nonrenewable energy in Nigeria. Natural gas, which is mostly composed of methane (CH4) and other light hydrocarbons, is related gas that is generated from subterranean accumulations. For ages, both China and America have used it as a fuel for economic purposes.[42] A naturally occurring gaseous mixture of hydrocarbon and non-hydrocarbon gases, natural gas is found in reserves located thousands of feet below the surface of the earth. Nigeria now possess the greatest confirmed natural gas reservoir in the world and Africa, with 140 trillion cubic feet.[43]

VI. LAW AND ENERGY SECURITY IN NIGERIA

Nigeria is a country that is resource rich in terms of energy. It is blessed with fossil fuels and non-fossil fuels, which, includes crude oil, natural gas, tar sand, coal, wind energy, solar energy, hydro energy, biomass and biogas. Fundamentally, energy might be considered the cornerstone of most countries' progress because a lack of reliable energy sources impedes economic growth and prolongs poverty.[44] A country that is blessed with the above-discussed energy sources should ordinarily be energy secured but the situation of energy supply in the country is such that its citizens do not have access to energy that over 50% percent of its citizens live in darkness.

A practical way to lessen reliance on fossil fuels, which are linked to problems like gas flaring and other ecological hazards, is to use renewable energy sources. However, there are a number of barriers to Nigeria's adoption of low carbon energy sources, including poor management, a lack of funding, false beliefs about the upfront costs, low public awareness, inefficient tactics, a lack of technical knowledge and a lax regulatory framework. This can only be effective if policies, laws and institutions are well aligned to bring adequate development to the country. The role of law in energy security cannot be over emphasized because the society does not stand on its own but governed by law and order.[45] No country can achieve energy security

[36] F. Igata, 'From 1909: Sad Tale of Enugu Coal Industry' (2016) available at www.google.com accessed 29 July 2025

[37] A. A. Adebesin & T. S. Amosun, 'Review of Utilization of Coal, Natural Gas and Hydro for Sustainable Power Generation in Nigeria' (2022) 2 (2) *Borobudur Engineering Review* 114

[38] I. A. Olayinka & F. Obere, 'Petroleum Exploration and Production in Nigeria: A Blessing or a Curse?' (2023) available at www.repository.ui.edu.ng accessed 29 July 2025

[39] *Ibid*

[40] G. O. Odularu, 'Crude Oil and the Nigerian Economic Performance' (2008) *Oil and Gas Business* available at www.citeseerx.ist.psu.edu accessed 29 July 2025

[41] A. A. Abdallah & O. B. Odeleke, 'Energy Security in Nigeria: Challenges and Prospects' (2023) 1 (1) *Journal of Arid Zone Economy* 104

[42] S. E. Akpan. 'Production and Utilization of Natural Gas Resources in Nigeria: A Review (2009) available at www.onepetro.org accessed 29 July 2025

[43] S. E. Aiwekhoe, 'Natural Gas and its Prospect for Effective Utilization in Nigeria' (2023) 13 (10) *IOSR Journal of Engineering* 19

[44] O. J. Olujobi, U. E. Okorie, E. S. Olarinde & D. Aina-Pelemo, 'Legal Responses to Energy Security and Sustainability in Nigeria's Power Sector Amidst Fuel Disruptions and Low Carbon Energy Transition' (2025) available at www.pmc.ncbi.nlm.nih.gov accessed 29 July 2025

without an effective legal framework such as good primary law in place to navigate the energy exploitation of primary energy sources and legal institutions. As a result of this, this section of the study focuses on discussing the pertinent Laws, Regulations and Policies as well as the legal institutions that promote energy security in Nigeria.

6.1 Legal Framework

1. The Constitution of the Federal Republic of Nigeria, 1999: the foundation for energy security is laid forth in Chapter II on fundamental Objectives and Directive Principles of State Policy of the 1999 Constitution, however, this section is not directly enforceable. The Constitution stresses balanced economic development and sustainable electricity supply, both of which are essential for energy security, even if it does not specifically mandate energy provision as a right.[46] The constitution is the primary legislation regulating the exploration, production and distribution of petroleum, natural gas and all other minerals in Nigeria. Section 44(3) Constitution of the Federal Republic of Nigeria 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 territorial waters and Exclusive Economic Zone of Nigeria shall be vest in the Government of the Federation and shall be managed in such manner as may be prescribed by the National assembly

2. The Electricity Act, 2023: On June 8 2023, his Excellency, President Bola Ahmed Tinubu signed the Electricity Act into law. The Act is intended to make it easier for Nigeria to run a fully privatised, contract and rule-based competitive energy market with cost and service-reflective pricing.[47] In order to restructure the electricity industry, integrate renewable energy sources into Nigeria's mix and attract the required capital to expand the sector, the Act also harmonises the regulations regulating the country's electricity supply industry. The Act established significant steps to promote the generation of renewable energy in Nigeria. The Act specifically acknowledges states' authority to enact legislation pertaining to the production, transmission, distribution and operation of electrical systems as well as the construction of power plants on their soil.[48]

3. **The Climate Change Act, 2021:** The Act was signed into law in November 2021. The Act creates a foundation for effective climate action, offers resources for advocating for climate change and offers legal recourse. It makes people and organizations accountable for acts that prevent the Act's recommended climate adaptation and mitigation measures from being carried out.[49] it mandates that private organizations with fifty or more workers implement Green House Gas (GHG) emission reduction strategies. The National Council on Climate Change (NCCC) will levy penalties for non compliance. In a similar vein, public organizations such as ministries, departments and agencies have a duty to reduce greenhouse gas emissions. By fostering a climate-conscious society, the Act aims to drive collective efforts towards achieving Nigeria's climate targets and ensuring a sustainable future for all.

4. **The Petroleum Industry Act, 2021:** The Petroleum Industry Act (PIA) establishes a set of regulatory frameworks that address the ecological risks of petroleum activities. Central to these provisions is the establishment of the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) and the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA)[50], tasked with overseeing the performance of petroleum operators in terms of the environment. Oil firms are held responsible for preventing vandalism of oil assets and are required by the Petroleum Industry Act to interact with host communities. Additionally, it is required of petroleum corporations to set up and finance an environmental management remediation fund that is devoted to managing environmental hazards and cleaning up regions affected by their exploration and production activities.[51] Guaranteeing the availability, affordability and dependability of

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[45] O. L. Uche, E. Ogwuda & K. C. Asuku, 'Appraisal of Legal and Institutional Mechanisms for Promoting Energy Security for Sustainable Development, Energy Equity and Economic Prosperity in Nigeria' (2024) *The Journal of Sustainable Development ,Law and Policy* 486

[46] Section 16 of the Constitution

[47] M. C. Udoh, 'An Overview of the Legal Framework and Institutional Bodies in Energy Law and Adoption of Sustainable Green Practices in Electricity in Nigeria (2024) available at www.papers.ssrn.com accessed 4 August 2025

[48] M. Otu, B. F. I. Anyatang, B. Kooffreh & R. O. Ugbe, 'An Appraisal of the Legal Frameworks and Policy Shift in the Nigeria Energy Sector' (2024) 23 (2) *Nature Environment and Pollution Technology* 1172

[49] C. C. Ajaeron *et.al*, 'Research on Climate Change Initiatives in Nigeria: Identifying Trends, Themes and Future Directions' (2025) 17 (9) *Energy Sustainability* 3998

[50] Petroleum Industry Act 2021, S. 110(5)

[51] *Ibid*, s. 104 (2)

petroleum goods is the goal of industry deregulation. It also aims to provide citizens with dependable and reasonably priced access to petroleum products.

5. **The National Environmental Standards and Regulations Enforcement Agency Act, 2007:** The importance of environmental protection has become increasingly recognized in Nigeria, where industrial growth and urbanization have often brought severe environmental consequences, including air, water, and land pollution. The Nigerian government, in response, enacted the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act in 2007, establishing NESREA as a critical regulatory agency tasked with environmental protection and pollution control across Nigeria. Its scope includes the prohibition of harmful environmental practices, monitoring compliance with environmental policies, and promoting the sustainable use of natural resources.[52] The agency also oversees the control of hazardous substances, biodiversity conservation, and compliance with international environmental agreements ratified by Nigeria.

6.2 R**egulatory Institutions in the Energy Sector**

There are various regulatory bodies regulating the energy sector, for the purpose of this work, a few will be examined below;

a) **Nigerian Electricity Regulatory Commission:** As the main watchdog over the Nigerian electricity supply sector, the Nigeria Electricity Regulatory Commission has the power to encourage the best possible growth and use of renewable energy sources in order to boost their share of the country's electrical mix.[53] The Nigerian Electricity Regulatory Commission (NERC) is the regulator of the power sector. It has the primary responsibility to oversee the Nigerian electricity market, regulate licenses and operators engaged in the generation, transmission and distribution companies and regulate prices in the electricity market. It is the objectives of the NERC to ensure availability of adequate electricity supply to consumers in Nigeria and ensure safety, security and reliable quality of service in production and delivery of electricity to consumers.[54] In furtherance, the commission's function is to promote competition and private sector participation when and where feasible and monitor the operation of the electricity market.[55]

b) **Energy Commission of Nigeria:** The commission advises the government on financing for energy-related research and development, production and distribution and it is in charge of strategic planning and coordinating national energy policies. Indicators of performance pertaining to government energy policies are also tracked by the commission.[56] Their mission is to promote sustainable energy development in Nigeria through the production of strategic plans and coordination of national policies in all its ramifications.

c) **The Nigerian Electricity Management Services Agency:** President Jonathan established the Nigerian Electricity Management Services Agency pursuant to the signing into law of the Nigerian Electricity Management Services Agency Act on 26 May 2015. It is set up to manage technical and engineering standards regulation of the Nigeria Electricity Supply Industry for safety and consumer satisfaction. Electrical inspection services are provided by the agency to the Nigerian Electricity Supply Industry.[57] Additionally, it is their duty to guarantee that the meters installed for end users, clients and consumers meet standards.[58]

d) **The Ministry of Power:** The Ministry of Power is the policy making arm of the federal government. Its vision is aimed at attaining a robust and sustainable power sector that fully supports the socio-economic needs of the Nigerian citizens. Its purpose is to provide the nation with adequate, reliable power supply by implantation generation, transmission and distribution projects in the power sector.

e) **The Ministry of Petroleum Resources:** The ministry of petroleum resources is saddled primarily with the responsibility to supervise the oil and gas sector. It has the responsibility of coordinating, formulating and implementing and formulating government policies for the petroleum industry. The Department of Petroleum Resources is the technical department that undertakes the regulation of oil and gas sector. The Minister for Petroleum Resources has the exclusive regulatory power to grant exploration, prospecting and mining rights in the oil and gas industry. The relationship of this body and energy security is that without exploration and mining rights, there will be no production of oil and gas thereby restraining security of supply of energy.

VII. Legal Issues in Energy Security in Nigeria

[52] I. Yakubu, 'The Role of National Environmental Standards and Regulations Enforcement Agency in Combating Climate Change in Nigeria' (2013) 5 *Environmental Law Review* 110.

[53] G. Elias, 'Strengthening Nigeria's Legal Framework to Advance Sustainable Green Electricity Practices' (2024) available at www.gelias.com accessed 5 August 2025

[54] Electric Power Sector Reform Act, 2005, s. 32 (1) (c) & (e)

[55] *Ibid*, s. 32 (2) (a) & (g)

[56] O. L. Uche, E. Ogwuda & K. C. Asuku (n45) p. 501

[57] Nigeria Electricity Management Services Agency Act, s. 176 (a)

[58] *Ibid*, s. 176 (c)

The research has provided an in-depth overview of the legal and institutional framework for the regulation of energy in Nigeria, which is imperative for the achievement of sustainable development in Nigeria. it is evident that Nigeria has made significant progress in strengthening its institutional and legal framework for ensuring the production and delivery of energy, which has boosted economic growth in other areas. There is a lot of legal issues as regards energy security in Nigeria. Many of the regulatory agencies do not have independence and clarity to act leading to uncertainty and delays. For instance, NESREA is excluded from overseeing activities within the oil and gas sector, which falls under the jurisdiction of other laws like the Petroleum Industry Act, 2021. In other words, NESREA focus is not on energy-related rules which in turn impedes its capacity to advance energy security in Nigeria.

The Electricity Act on its part does not effectively cover issues of limited access to electricity in rural areas, which is one of the objectives of sustainable goals. That is affordability, accessibility and reliability of energy. Another issue is the procedures for allocating funds to promote research and projects related to climate change as outlined in section 15 of the Climate Change Act. Another legal matter that requires resolution is the issue of integrating renewable energy sources into the current electrical system. Additionally, the agency's efforts can be hampered by jurisdictional overlaps with other regulatory bodies, such as the Federal Ministry of Environment, and the influence of political and economic interests that may resist stringent enforcement measures.

Conclusively, NESREA has not created any legislation that acknowledge the promotion of renewable energy as the focal point of sustainable development in Nigeria, while being the top authority for environmental protection and guaranteeing the sustainability of natural resources. Additionally, there are no guidelines in the Petroleum Industry Act regarding how to lessen interruptions in the production and delivery of oil, which could have beneficial effects on energy security.

VIII. CONCLUSION AND RECOMMENDATIONS

Energy plays the most vital role in the economic growth of a nation and eradication of poverty in order to achieve sustainable development and enhancing security of a nation. Exploring energy sources is vital for securing energy supply that is necessary for effective functioning of the Nigerian economy and well-being of the masses. The availability of adequate, accessible and affordable energy in an environmentally sustainable manner is important to secure energy security in Nigeria. This involves availability of electricity supply to more than 80% of the masses in Nigeria, including those in the rural area of the country and availability of refined energy products for transportation sector because without securing these energy supply, development is unattainable. The long-term availability of inexpensive, easily accessible and ecologically acceptable energy sources is a critical component of future economic growth. Therefore, security of energy supply should be prioritized for the government of the day.

8.1 Recommendations

Excessive use of fuel wood in Nigeria endangers the ecosystem as it increases soil erosion, accelerates desert encroachment and depletes soil fertility. The findings of this work indicate that there is need for diversification and exploration of all energy sources in the country The country has to focus on production of renewable energy sources that has less export potential for domestic consumption. On this note, the following recommendations are proposed.

a. **Diversification of Energy Supply Sources to Ensure Steady Power Supply**: Energy diversification is the use of multiple energy sources to run a country's economy. This is evident in Denmark, the country once used coal, gas and oil in running their economy and has transited to the use of renewable energy. Nigeria should focus on diversifying energy supply sources by including renewable energy in energy mix.

b. Financing Infrastructure: The importance of financing cannot be overstretched. The Nigerian government must be willing to spend money where it should. Financing the energy sector and put in place infrastructure for refining products and expansion of transmission line.

c. **Promote Competition in the Electricity Industry**: The Nigerian electricity sector is known for its unreliable power supply. There is need to promote proper competition in the electricity sector. Like in the UK, there is no imposition of distribution companies on customers, customers are allowed to choose which distribution company s/he wants to transact with.

d. **Environment maintenance**: To realise our goals of ensuring sustainable development, there is a need to maintain the environment as a composite asset that provides humanity with a multitude of services.

e. **Promote afforestation**: Trees are extremely valuable to humans for a variety of reasons, including preserving the natural equilibrium of the ecosystem. As a result, their protection and preservation are crucial for both the present and future generations. it is important to use conservation and preservation tactics that take a community-participatory approach.

f. There is need to address transmission and grid challenges for positive transformation of the electricity sector through renewable energy and addressing energy infrastructure challenge.