

NEXUS OF GREEN GOVERNANCE AND SUSTAINABILITY PERFORMANCE IN NIGERIA'S ENERGY SECTOR: AN EMERGING PARADIGM

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Abstract

This paper considers the concept of green governance as a reactionary effort or response to the environmental consequences arising from the exploitative human interaction with the elements of nature. The present industrial revolution has increased the level of production, heightened companies' profit margins and resulted in environmental hazards. Additionally, the chain of manufacturing to consumption has resulted in environmental degradation, ozone depletion and the destruction of traditional livelihoods for most economies of the world. Through empirical evidence from relevant literature, this study finds that Nigeria's energy sector accounts for 90% of the total export volume and is the major contributor to environmental degradation; hence, the implementation of green governance and sustainability performance should be championed by the energy firms. To this end, the stakeholder theory is used to analyse a model of synergy between stakeholders to implement green governance. Nonetheless, green governance practices among these energy firms are very low compared to other developed countries such as the United Kingdom, Russia, China, and Germany. This paper concludes by providing viable future research discourses which would add to the sum of knowledge on green governance practices in Nigeria.

Keywords: Green Governance, Environment, Sustainability Performance, Energy Firms, Green Policy, And Economic, Social and Governance (ESG) Practices.

1. INTRODUCTION

The first industrial revolution introduced technological machinery that influenced production levels (Hassan and Kouhy, 2015); thereby increasing the measure with which manufacturing firms record high-profit margins which led to environmental degradation, ozone depletion and the destruction of wildlife and aquatic habitats (Paille, et al. 2020). For this cause, governments and organizational practices are designed to either control or reverse this trend and ensure a more sustainable ecosystem. Studies such as Shah, (2022); Eckert and Kovalevska, (2021); Soyemi, et al (2021); and Kalei, Arasa and Achuora (2022) believe that the present industrial civilization is formed to ensure organizations do not operate in a potentially harmful manner to the environment. Hence, the economic, social and governance sustainable practices in the current industrial

dispensation. However, this paper posits that government and organizational practices in recent times are the reactionary effort that seeks to prioritize environmental issues which is referred to as green governance. Describing it as ecological modernization, Melles (2021) believes that the realization of a sustainable circular society requires the participation of energy firms but most importantly, the coordinative instruments of government. Over the years, international institutions and initiatives have begun to champion the call for environmental sustainability and spell its relevance to developing societies. According to Melles (2021), such international institutions and initiatives are referred to as the intermediaries for low-carbon and sustainability transitions. Examples are the United Nations Environmental Programme (UNEP); the Organization for Economic Cooperation and Development (OECD); the Ellen MacArthur Foundation; McKinsey & Company; and the United Nations Framework Convention on Climate Change (UNFCCC).

Nigeria is one of the numerous countries in the world that suffers environmental degradation because of excessive exploitation of the ecosystem in the quest for profitable production. According to Oyedepo (2012), there has been an existent energy crisis which has engulfed the country's economy for over two decades resulting in health hazards from exposure to carbon emission. Nonetheless, Okwanya, et al (2020) records that the Nigerian government through the instrumentality of organizations and energy firms such as the Nigerian National Petroleum Corporation (NNPC), Oando, Total Energies, and Shell has increased its investment portfolio in renewable energy but so far, there has been little private participation. Highly industrialized and corporate market economies such as China, Germany, the United States of America, Russia, the United Kingdom, and a host of others have been referred to as the highest contributors of emitted fossil fuels around the world, thus making them lead the global economy in the quest for a sustainable environment.

Today, concepts such as green board structure, green committee, green vision, green mission, blue economy, and product recycling form the latest discourse fields of energy studies, petroleum exploration and production management. Politically, countries and international actors are reconfiguring and overhauling their governance systems to incorporate ideals and ideas of environmental sustainability (Alqudah, et al. 2021).

1.1 Aim of the study

Citing from the most recent and relevant information sources, this study seeks to evaluate green governance practices and the sustainable performance of energy firms in Nigeria.

1.2 Conceptual framework

The global financial market in recent years has reflected the profits that organizations gain from investing in environmental, social and governance (ESG) practices. According to Fuente, Ortiz, and Velasco (2022), the global investments made in sustainable production have risen to over 269%. This is an evident expression of the global paradigm shift to green production and other green organizational practices. Thus, the concept of green governance is an emerging concept that has enjoyed considerable literary attention

from academics and professionals over the last decade (Shah, 2022). Environmental debasement according to Ogunkan (2022), has not only raised environmental concerns, but it has also aroused several professional and scholastic perspectives in fields like business, commerce, and science. Concepts like green production, green recruitment, green audit, and green society are proofs of the global drive for environmental sustainability. This paper further observes that the global market economy is shifting into the ‘net-zero’ ambition.

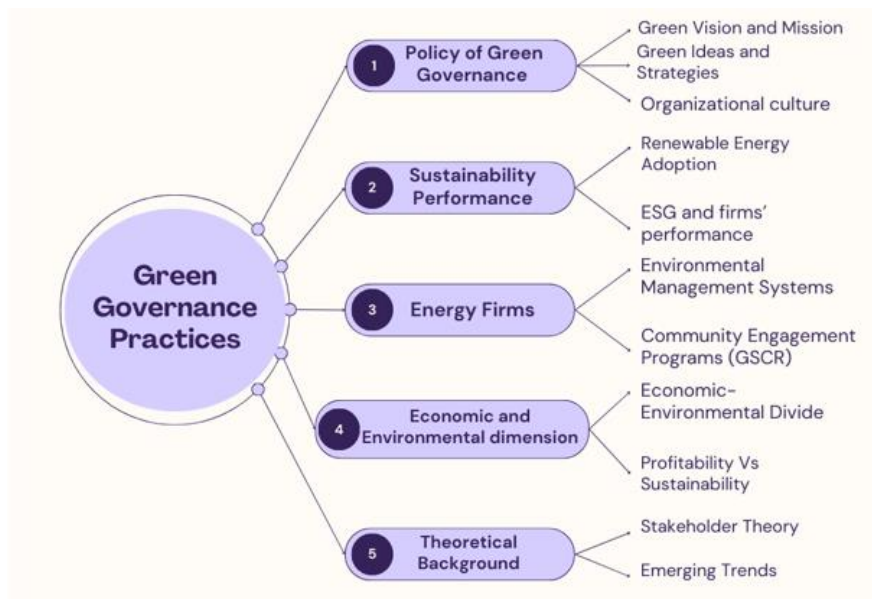


Figure 1: Conceptual framework

1.3 Definition of concepts

1.3.1 Green governance

Chairina and Tjahjadi (2023), define green governance as a contemporary concept that bridges conflicts between humans and the elements of nature through a deliberate policy formulation and a set of institutional rules. According to Shah (2022), green governance is an emerging concept that integrates the ideals of sustainability whereby organizations remain accountable for long-term purposes.

For many centuries, human civilization has interacted with the elements of nature to satisfy needs and make profits. This interaction has led to the creation of high-energy consumption systems of production and national economic prowess Li, Xu and Zheng, (2018). Hence, this study defines green governance from two purviews:

Firstly, green governance from a management purview: These are the organizational practices that promulgate environmental balance and friendliness.

Secondly, green governance from the political perspective: Is a deliberate national and international policy framework by policymakers for sustainable and more efficient production, economy, and environment.

1.3.2 Sustainability performance

Lucidly, Iheanachor (2020), posits that sustainability is a long-term solution to production problems of the present without hampering the ability of the future to meet their needs. However, this popular definition does not completely describe the nature of organizational sustainability or the practice of sustainability performance in Nigeria. This is because some organizational practices do not necessarily interact with elements of nature. Thus, this study describes sustainability performance as the execution process towards ensuring the accomplishment of a long-term goal. Sustainability performance succeeds when a company is committed to saving energy, reducing environmental impacts (Chairina and Tjahjadi, 2023), and efficiently using natural resources in a manner consistent with ecological equilibrium. According to Kantabutra and Ketprapakorn (2020), sustainability performance is a leadership and management approach adopted to profitably grow and deliver economic, social, and environmental-friendly output. Observably, the concepts of green governance and sustainability performance have become a composite axiom as it describes the efficient operation of organizational practices. From a professional and management perspective, this paper describes the concept of sustainability performance as an organizational practice that is designed to ameliorate anthropological and health problems.

1.4 The nature of Nigeria's energy firms

Companies that comprise the energy firms can be grouped into two: renewable energy and non-renewable energy. While renewable energy has become the major driver of Industry 4.0, and it is derived from natural elements which can be replaced over a short period for continuous consumption (Sharma, et al. 2021); non-renewable energy is referred to as the driver of production generated from natural and mineral resources which cannot be replenished over a long period (Mujtaba, et al 2022). Renewable energy is also referred to as green energy.

Nigeria's energy sector accounts for 90% of the total export volume and more than 80% of the nation's revenue (NIPC, 2023). Soyemi, et al (2021) stated that Biomass and waste, oil product, natural gas and hydro are the four major energy sources in Nigeria. Figure 2 indicates their respective contributions to Nigeria's energy sector. This is indicative of the fact that energy firms in Nigeria are regarded as the highest contributors to production activities and advertently the highest contributors of carbon emissions in the country. According to Dunne (2023), Oil and gas production in Nigeria is responsible for the experienced societal inequalities, steeped environmental benefits, and environmental disasters. Paradoxically, despite the astronomic oil price in the country and the volatility associated with oil explorations, it has not alleviated the country's environmental woes; rather, it has continued to affect other forms of production and operational activities in many organizations across the country (Adekunle, et al. 2020).

Additionally, Nwaiwu (2021) stated that Nigeria is one of the African countries struggling with crucial energy shortages which he regarded as a high level of energy poverty. Hence, this study therefore posits that while the government can be regarded as the major

environmental polluter; gains in energy production have become the bane for environmental sustainability in the country.

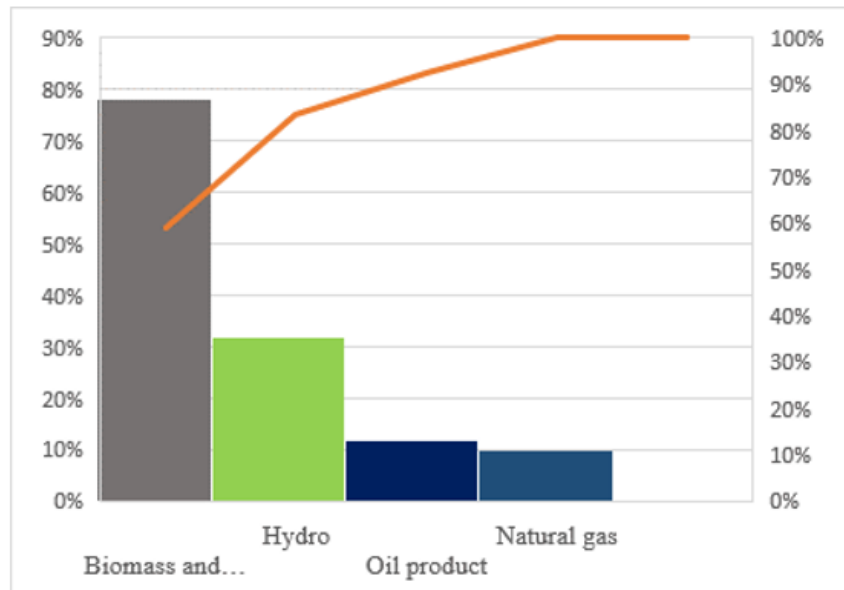


Figure 2: Major energy sources in Nigeria and their contributions to the energy sector

Source: Soyemi, et al (2021).

Petroleum and fossil fuels are the main sources of energy and electricity production in Nigeria (Enerdata, 2021); with about 12,000 megawatts electricity distribution potential, the country accounts for only 18.2% of electricity distribution from oil production and has much of its fossil fuel burnt to the ecosystem by gas flaring (Okedere, et al. 2021). Meanwhile, according to Eweka et al (2022), about 33% of global electricity production is generated from renewable energy sources. This implies that although more sustainable energy practice is demanded from Nigeria's energy firms, global energy production is below 50% of production capacity in renewable energy.

1.5 Methodology

This paper adopts the qualitative method of data collection and analysis which stems from three aspects. Firstly, relevant, and related academic literature was used to discuss the concepts of green governance, sustainability performance, and theoretical analysis. Information from the literature was critically discussed to identify the gaps and operational implications for Nigeria's energy firms in their interaction with the environment. Secondly, Nigeria's energy firms' official document on ESG reports, Green corporate social responsibility reports, and annual market reports from energy firms in Nigeria as well as actors in the global green campaign. Recent national green policies are also featured in the subject of discussion. These are considered stakeholders in the global ESG campaign. Thirdly, critical observations and conclusions were made from the review of related literature and official documents which are identified in the paper.

2. LITERATURE REVIEW

2.1 The Industrial Divide: A Critical Economic-environmental Discourse

The dependency and independence schools of thought do not seem to agree on the economic justification for sustainability (Robinson, 2004). This study observes that while proponents with the dependency orientation believe that industrialized and first-world countries (such as China, Germany, Russia, France, and the United States of America) should cut down on environmental exploitation; less industrialized countries (such as India, Nigeria, Kenya, Ghana, Morocco, the United Arab Emirates, and a host of others) yet well-endowed with natural and mineral resources should maximize its usage for economic prosperity; the independency school of thought believes that since the impact of environmental degradation is felt by the global community, all actors should therefore take precautionary initiatives to curb further environmental hazards by redirecting their systems of production.

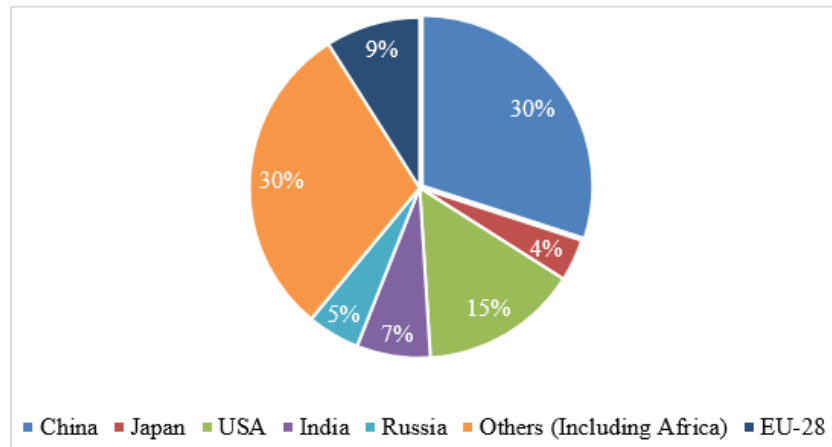


Figure 3: Countries' fossil fuel contribution. Source: Adewuyi, et al (2020)

From the above image, it is indicative that Africa (which comprises 54 countries) contributes only 30% to global warming while China a single country contributes the same percentage. Hence, though this study agrees with the environmental justification for green governance, it does not subscribe to the economic implication it would mean for African countries especially Nigeria who are yet to maximize their natural and mineral deposit for economic prosperity.

Eweka, et al. (2022) record that there are about 600 trillion undiscovered natural gas around the world and more than 50% of this is found in Africa. In a study, Nwaiwu (2021) stated that Nigeria is one of the African countries struggling with crucial energy shortages which he regarded as a high level of energy poverty, despite the volume of mineral and oil deposits in Nigeria. According to Adewuyi et al (2020), the growth and development of any country depend primarily on the efficiency and sufficiency of its energy sector. Nonetheless, Amiraslani, et al. (2022) and Omotayo et al (2022) believe that for corporations and countries to achieve the net-zero policy, it would require a high financial commitment.

Therefore, because of the financial demand in achieving a net-zero policy, various energy firms in Nigeria find this policy unattainable by practice. Hence, with Nigeria operating at a low production rate, energy firms only need to seek an efficient way to upscale production by maximizing the energy sector. Furthermore, the volume of natural gas which is said to be a clean source of energy compared to energy fuel sources such as diesel, coal and Lignite can provide an immediate way out for African and Arabian countries.

Despite being the 7th largest oil-producing country at 1.67 million barrels per day of the 89.9 million barrels of oil per day globally (Statista, 2021), Nigeria is yet to match its consumption demand; yet green human resource advocates, professionals and environmental sustainability advocates believe that organizational green practices are core to the organizational competencies that contribute to organizational turnover and these green sustainability initiatives should not be ignored regardless of economic growth or decline (Haessler, 2020). For a sustainable environment and productive economic fortune, Adewuyi et al (2020) posit that oil-producing countries of Africa should desist from the wasteful culture of gas flaring to conservative gas retention. This study further observes that the industrial divide is more of a professional discourse than an academic argument.

2.2 The Policy of Green Governance in Nigeria

The relationship between sustainable reporting and the performance of energy firms in developing economies like Nigeria embodies the principles of ESG (Alhawaj, Buallay and Abdallah 2023). Observably, the organizational practices across boards in Nigeria are adopting the eco-friendly and sustainable approach (Ekhaesomhi, 2021). The green board committees, the green financial reporting (green audit) and green corporate social responsibilities are featured in Nigeria's energy firms. This also serves to attract investors and global market recognition. As the global production process is shifting to a more sustainable and eco-friendly system, Nigeria's industrial economy is also drifting towards this global production system. This shift in the production system is a demonstration of political and human resource innovation in terms of policymaking, organizational practices, and institutional enforcement. Green governance practices and the corresponding organizational performance is enacted by various environmental regulations or policies which cuts across all sectors of the Nigerian economy.

The crust of Nigeria's green policy is focused on the National Environmental Policy together with some legislative bills that advocate and ensure a sustainable environment by conserving natural resources, environmental balance, and desirable human health. The green policy drive has been featured in various energy firms. Hence the commitment of corporate actors to enact and enforce green policy across the country is of crucial importance. [Table 1](#) lists the latest policies, programmes and legislations by stakeholders to ensure ESG practices are implemented.

Table 1: Most recent Policies, Programmes and Legislation

Latest Policies, Programmes And Legislation		
1	The Petroleum Industry Act	2021
2	Nationally Determined Contribution (NDC) to the Paris Agreement: Nigeria	2021
3	Climate Change Act	2021
4	Nigerian Economic Sustainability Plan	2021
5	Framework for the implementation of intervention facility for the national gas expansion programme	2020
6	FDNIS ECOSTAND 071-2: 2017EE: Minimum Energy Performance Standards Part 2: Air conditioning products	2019
7	Nigeria's National Action Plan to reduce short-lived climate pollutants	2019

Source: IRENA, (2022); Climate Change Act, 2021; Petroleum Industrial Bill, 2021

Table 1 above presents a list of cooperate governance mechanisms and policy frameworks that have formed a bedrock for regulating national carbon footprints and renewable energy initiatives in recent times. Although there are other institutional initiatives and policy frameworks adopted by Nigeria's energy firms, the above listed polies, programmes, and legislations are the most recent. A succinct analysis of each policy, programmes and legislation is described thus:

First, the Petroleum Industry Act 2021 is a policy framework which empowers the petroleum commission to oversee the production, appropriation, administration, and other commercial activities related to petroleum energy. Also referred to as the Petroleum Industry Bill (PIB), KPMG (2021) reports that it is driven by the vision to promote exploration (upstream) activities to ensure environmental and economic sustainability especially for the Niger-Delta region and Nigeria at large.

Secondly, Nigeria which stands as Africa's largest economy has played integral role in pursuing the objectives of the Paris Agreement in the continent of Africa. In a report document, the Honourable Minister for Environment stated that the Paris Agreement is an incredible opportunity for Nigeria to adopt the global carbon reduction plan thereby facilitating sustainable development across various sectors of the country. Hence, the Nigeria's updated Nationally Determined Contribution (NDC) has unconditionally pledged a 20% reduction of carbon emissions by 2030. However, this paper observed that the Nationally Determined Contribution (NDC) did not acknowledge the fiscal implication for a more sustainable energy system of production. This paper also observes that the NDC policy framework is designed to primarily seek financial and technological aid from advanced countries as it pledged to "47% conditional commitment which can be achieved with financial assistance, technology transfer and capacity building from the more advanced and more willing international partners" (NDC, 2021, p. 1). Notwithstanding, the major difference between the Petroleum Industry Act 2021 and the Nationally Determined Contribution 2021 is that while the PIB centered on petroleum exploration and the energy derived from petroleum resources, the NDC is a policy framework that seeks to comply with Paris Agreement and the global green policy.

Thirdly, the Climate Change Act 2021 is described according to this paper as the codification and litigation of environmental concerns, policy statement and punitive measure for non-compliance to the national as well as global environmental goals. This paper describes the Climate Change Act as the most comprehensive legal document regarding climate change. This is because, it ensures the inclusion of human resources or portfolio to serve in the capacity of climate change officer or environmental sustainability officer (KPMG, 2022). This bureaucratic and organizational policy is applicable to both private and public entities, MDAs and especially on private entities with 50 employees and above. Though comprehensive, the Climate Change Act 2021 is yet to demonstrate execution of punitive actions on defaulting organizations.

Fourthly, Nigeria's quest for a more sustainable ecosystem since the post Covid-19 era, has informed the present Economic Sustainability Plan 2021. As part of the content of its report, the Nigeria Economic Sustainability Plan is a project that operates on the experience of the 'Energising Economies' in which customers with low energy demand are provided with electricity monthly. This project would encourage increased production level under a sustainable energy production mechanism in all sectors of Nigeria's economy (NECP, 2020).

Fifth, the framework for the implementation of intervention facility for the national gas expansion programme is a ₦250 billion intervention programme by the Central Bank of Nigeria. This policy framework is peculiarly designed to provide a more diversified energy source and invest in gas energy (IEA, 2022). Observably, the expansion and investment into gas energy is not potentially a renewable energy source, however, this paper believes that it provides a less sustainable energy system. The benefit of the implementation intervention facility for national gas expansion programme is that it profits (by way of subsidy) to household communities.

Sixth, the FDNIS ECOSTAND 071-2: 2017EE: Minimum Energy Performance Standards Part 2: Air conditioning products is primarily not a policy framework but a document which reports the key energy indicators, energy projections and targets, and individual nation's performance or compliance with global energy sustainability (IEA, 2019).

Seventh, the Nigeria's National Action Plan to reduce short-lived climate pollutants 2019 is a blueprint developed by the Federal Ministry of Environment Nigeria, and it aims to improve air quality and reduce Nigeria's contribution to climate change through 22 specific mitigation measures in 8 source sectors. These sectors are industry, transportation, agriculture, power, oil, and gas, cooking and lighting in households, and Hydro fluorocarbons (Climate and Clean Air Coalition, 2019). This paper also believes that Nigeria's dependency on non-renewable energy for production has polluted the ecosystem. Hence the Nigeria's National Action Plan to reduce short-lived climate pollutants 2019 was implemented to curb further pollutions and create a friendly environment for livelihood. This paper further observes that some factors influence the implementation of energy policies within the internal spectrum of any country. These are competency, regulatory frameworks, and active participation of stakeholders.

2.3 Green Vision and Mission

The green vision is closely linked to environmental development, quality living standards, and sustainable production of a society. Energy vision is referred to as the continuous and prospective strategies on how to address the prevailing ESG issues while increasing the production levels of energy firms (Edomah, Foulds and Jones, 2017). The green vision is a long-term plan for an eco-friendly economy and environmental sustainability. Organizational green vision is often a tributary of national green policy and plan. In other words, organizations draw their sustainability roadmap from the national policy and multinational companies often follow the global green policies. In a report, Enerdata (2020) stated that Nigeria's 29% of electricity production would be from renewables by 2030. This would include large hydropower production with 13.8 gigawatts of capacity. However, from the foregoing economic trends and the economic resuscitation programme, the nation is yet to achieve ¼ of this green policy vision. Figure 4 indicates the disparity between Nigeria's green vision and realization between 2015-2030.

Unlike the green vision which is a policy projection or prospective goal for sustainable production, this paper considers the green mission as a practical and on-the-run policy framework or initiative. Green initiatives such as Green Deal Nigeria which targets an increased level of energy saving, minimize greenhouse gas emissions by 2050, and attain environmental neutrality (Ziabina and Pimonenko, 2020); Great Green Wall Experience in Nigeria which aims to plant over 100 million trees by 2030 (Bruckman, et al. 2022); National Policy of Climate Change in Nigeria; and a host of others are environmental-industrial policy initiatives that are presently operational in the county. Additionally, some of the identifiable green policy initiatives include Afforestation, clean transportation, waste management and the conservation of nature and wildlife reserves.

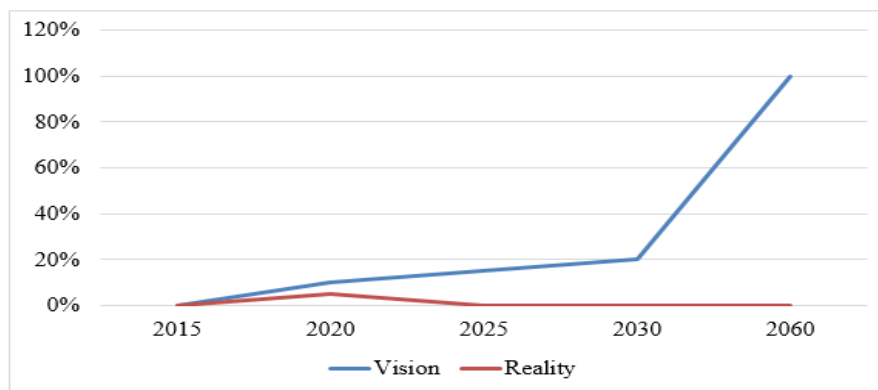


Figure 4: Graph showing the disparity between Nigeria's green vision and reality

Source: Enerdata, (2021); NNPC, (2021); and Ziabina and Pimonenko, (2020).

The information from the diagram above is extrapolated from various data sources and it shows a large gap between vision and reality. From the above diagram, this paper observes that national policies, initiatives, and energy firms' goals towards sustainable production are unattainable.

According to Ziabina and Pimonenko, (2020), Green Deal Nigeria failed to reach its target because of unstable internal mechanisms either from the national geopolitical space or organizational deficiency. The realization of green vision in Nigeria is hampered by financial constraints.

Thus, this is an indication that Nigeria's green vision is an imported idea which serves the global good more than the domestic good of the country; this is because, the country still accounts for large natural energy reserves that have not been tapped, yet the nation subscribes to the universal green ideas for environmental sustainability; thereby making energy firms produce at lesser capacity. However, this study opines that the reason for low green organizational practices in sub-Saharan Africa is that most firms within the area are under the category of small and medium enterprises (SMEs). Since there are speculations of increased population growth from the present 200 million people to 281 million by 2030, Eweka et al (2022) state that this population will have a direct effect on energy demand in the country. The global green policies have conditioned the national policies to inculcate green ideas in their economic strategies.

2.4 Green Ideas and Strategies

Although more organizations in most parts of sub-Saharan Africa are yet to imbibe green organizational practices, Song, Yu and Xu, (2020) believe that organizations are becoming more environmentally conscious. This environmental consciousness has initiated strategic organizational practices that ensure the execution of ESG/sustainability issues.

Figure 5 shows an organizational chart that inculcates ESG/sustainability structure. The concepts of green ideas and strategies are emerging concepts in the field of management theory of ecology. According to Hsiao, Chuang and Huang (2018), green ideas are quiet beyond the initiatives that sponsor sustainable environmental production but include the content, and philosophy behind such initiatives.

This paper subscribes to the description of green ideas as a philosophy because the individual sector of the economy, or firms build their green organizational practices around the green ideas.

Green strategies are carefully designed procedural steps or approaches to attain organizational green policy (Luu, 2020). According to Luu, green strategies are referred to as organizational human resource practices that function with the company's green philosophy in their practices.

To achieve green sustainable performance, energy firms are gathering a pool of unique workforce with the Green HRM ideology operational values. Today, energy firms' performance in Nigeria is reflected in their reports and the organization's ESG philosophy is also indicated in their staff portfolios.

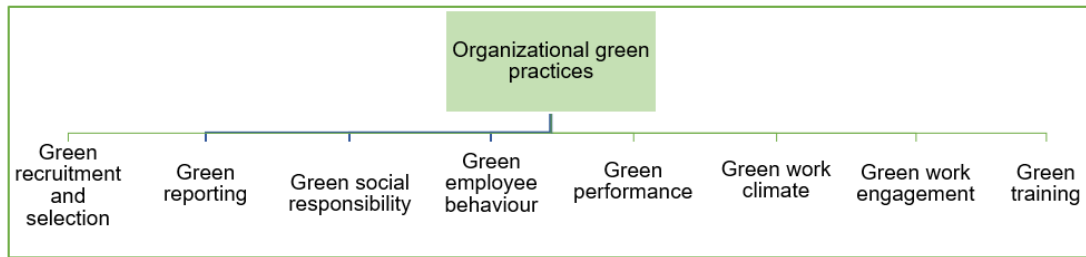


Figure 5: Organizational green structure

Source: Author

The above diagram shows the Green HRM organizational practices that are strategically designed to promote employees' pro-environmental behaviour. Professionally, these practices are to influence the employees' psychological green values and culture (Al-Ghazali and Afsar, 2021). For instance, green recruitment and selection, green employee behaviour, green performance, green training, and green work engagement describe the individual employees' behaviour toward green values; green audit, green corporate social responsibility, and green reporting are described as green organizational values and strategies.

Thus, energy firms in Nigeria deploy innovations to mitigate the environmental, social and governance (ESG) risks. In 2016, the Federal government of Nigeria initiated a gas masterplan which would strategically diversify the energy sector in Nigeria, thereby making energy firms adopt renewable and sustainable production systems (Ricardo Energy & Environment, 2021).

To accomplish this strategy, Habib and Congjiao (2021) report that it focused on:

- a) Gas to power: Having established that natural gas is a form of clean gas, Aderinokun (2020) states that natural gas provides a strong base for industrial development thereby developing the country and maintaining a fair production with very minimal environmental inconsistencies compared to liquid fuels.
- b) Gas-based industrialization; Although the adoption of renewable energy for industrial purposes requires a large sum of financial commitment, natural gas (which Nigeria has in abundant proportion), is said to be more cost-effective, and environmental-friendly. It can serve high industrial sectors like the power/electricity distribution sector.
- c) High-value export of natural liquified gas to other sister developing countries in West Africa. This is a pro-environmental initiative that serves to ensure environmental sustainability within the West African region. Today, because of China's high fossil fuel emissions, other Asian countries such as Thailand, Japan, and India are feeling the effect. Hence, this strategy is expedient for an environment-friendly Africa.

2.5 Green Board Committee

The green board committees (GBC) are referred to as the major tool for overseeing the implementation of green policies in organizations (Shah, et al. 2022). This paper views the green board committee as a green organizational strategy. They are a colloquium of decision-makers that advances the course of organizational sustainable performance to achieve organizational green policies. It is often argued that the function of the green board committee in Nigeria's energy firms is not effective compared to industrialized countries of the world (Bhatia and Makker, 2020).

In a survey study, Nigeria's energy firms are underutilizing their green board committee compared to other developing and developed countries such as South Africa, Russia, United Arab Emirates and Singapore (Oyedepo, 2012). Additionally, in an annual report, KPMG (2021) stated that about 20% of the 100 companies surveyed, indicated that they have a dedicated board membership or team that is responsible for ensuring the company complies with global sustainability standards or at the least, are demonstrating the ethics of organizational governance for sustainable growth. This is also known as the green board committee.

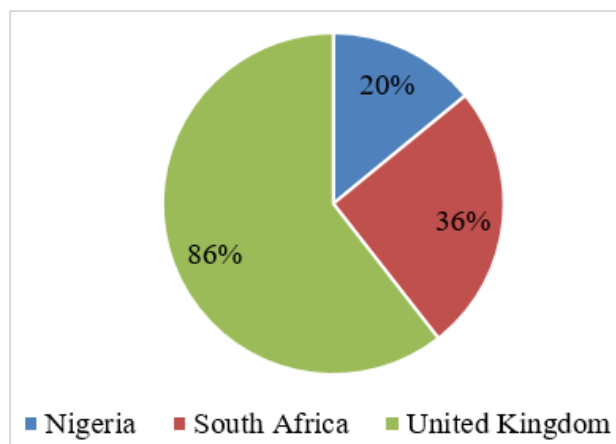


Figure 5: A comparative analysis of three countries that utilize the green board committee

Source: KPMG, (2021)

The above diagram illustrates a comparative analysis of the compliance of three countries (Nigeria, South Africa, and the United Kingdom) in ensuring that energy firms adopt the green board committee portfolio in their green strategy. In their survey report, KPMG, (2021) stated that out of 100 companies (both energy firms and non-energy firms) in Nigeria, only 20% of them adopt the green board committee portfolio. The major factor responsible for this level of compliance is financial constraints (Aderinokun, 2020). Additionally, this paper observes that energy firms in Nigeria do not have the practical understanding and pro-environmental ideas such as green governance, green corporate social responsibility, and green reporting. Also, South Africa possesses a higher percentage of compliance and adoption of green board committees with 36%. Although

there are no clear reasons for this increased level of compliance, this study observes that most of the companies and energy firms enjoy non-African expatriates' assignments. In other words, South African companies and energy firms are mostly foreign direct investments (FDI) and these investments are coordinated by foreign workers who have a sound understanding of pro-environmental ideas and strategies to execute them. The survey carried out in the United Kingdom indicates that 84% of companies adopt the green board portfolio. This shows that companies and energy firms aptly understand the concept of green governance and green ideas in the United Kingdom (Shah, et al. 2021).

2.6 ESG and firms' performance

Unlike the wake of the 21st century when ESG/sustainability reporting was voluntary and firms were complacent in transparent report systems, the recent years and most particularly from 2015, Nigeria's energy firms (particularly the oil and gas sector) have mandated sustainable reporting. According to the KPMG report, firms are on the precipice of adopting mandatory and regulated sustainable reporting (KPMG, 2022). In its report, Nigeria's sustainable reporting which indicates a gradual progression of energy firms' performance is comparable to other countries like South Africa, and the United Kingdom. According to Ntsama (2022), only about 40% of companies in Nigeria adopted the ESG/sustainability reporting system in 2009. However, in 2022, KPMG (2022) reports that about 78% of companies in Nigeria adopt ESG/sustainability reporting. [Figure 7](#) illustrates the different percentage levels of sustainable reporting in 2009 and 2022 respectively.

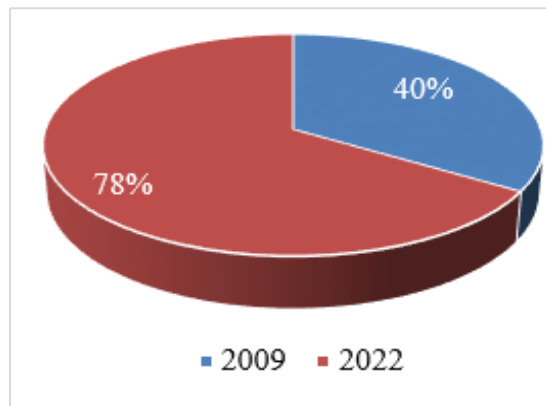


Figure 6: Sustainable reporting among firms in Nigeria

Ntsama (2022); and KPMG (2022)

Comparatively to the earlier years when sustainable reporting was voluntary, the above figure indicates that more companies are acknowledging ESG/sustainable performance indicators in their reports (Cronin and Doyle-Kent, 2022). Nonetheless, with the global advocacy and enforcement of renewable energy along with its health, economic and environmental benefits, production firms have continued to increase their use of renewable energy. However, information from Enerdata (2020); WorldData.info (2021); and Statista (2022) indicates low energy productivity which is attributed to financial limitations.

2.7 Profitability vs Sustainability

The African economic landscape grappled for more than two decades to adopt ESG/sustainability practices because of its structural, institutional, and political drivers. For instance, certain provisions of ESG sustainability practices (clean water, environmental safety, and basic social amenities) were the government's responsibility for many decades (Ntsama, 2022). Hence, this made energy firms concentrate on upscaling their profit and tax payment, which according to Onyena and Sam (2020) caused the reckless oil spillage in the Niger Delta region of Nigeria.

This study opines that while profitability implies the increasing financial turnover of businesses, sustainability is described as the ability of a company to maintain production and operational practices despite prevalent situations. Such situations could be environmental, manpower and/or governance. Notwithstanding, organizations may wish to adopt a different approach to their production system in compliance with organizational goals.

According to Cerciello, Busato and Taddeo (2023), the economic and fiscal ambition of 21st businesses overlook the need for sustainable practices and; thereby prefer to choose profit above sustainability. This postulation is evidenced by the organizational practices of energy firms in Nigeria.

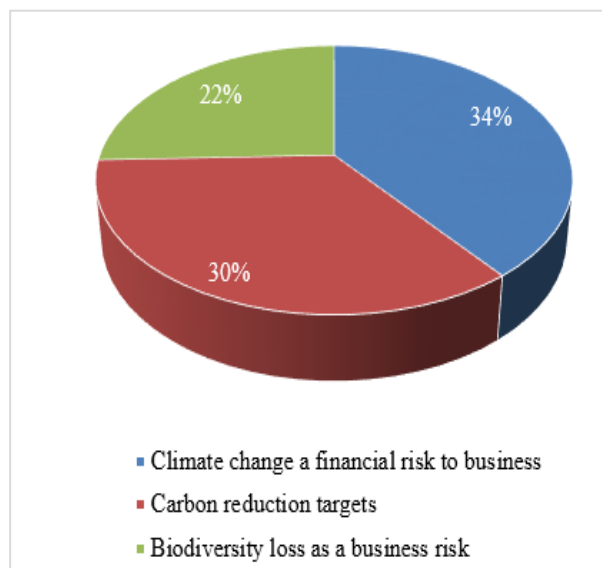


Figure 7: Graph showing the environmental influence on firms in Nigeria.

Source: KPMG, (2022)

The above diagram is a representation of a survey study by KPMG (2022). It reports that out of the one hundred sampled firms in Nigeria (most of which include energy firms), 30% of the firms opted for carbon reduction, 34% believed that climate change has a direct link to their business and 22% recognised biodiversity loss as a business risk.

Numerous academic literatures in recent times have continued to contest the determinant of energy choices, production systems and economic profitability particularly when it regards issues of industrialization and firms' operational practices. Nonetheless, this paper observes that the seemingly agreeable point of this discourse is the justification of the need to redirect fossil fuels into renewable energy.

2.8 The Green Corporate Social Responsibilities (GCSR)

Stakeholder engagement in green corporate social responsibility in Nigeria is a collaborative effort by employees, investors, and beneficial communities. In a research study Bhatia and Makker, (2020) reported that developed countries have higher CSR disclosure than developing countries. While developed countries account for 53.5% of CSR disclosure, developing countries account for 49.4% of CSR disclosure. Figure 9 illustrates the aforementioned information.

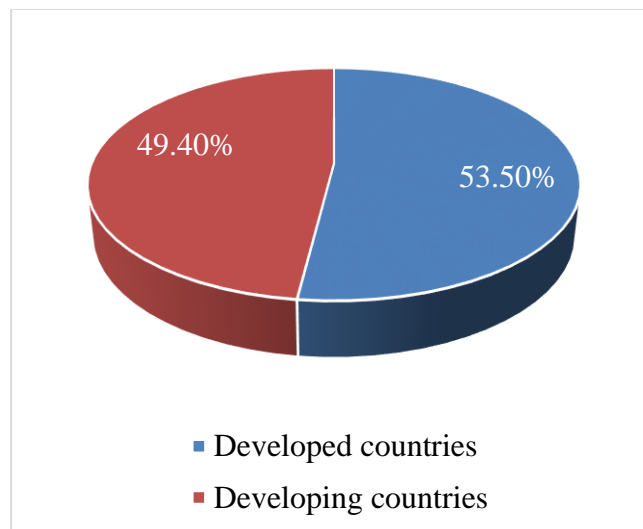


Figure 8: Chart indicating the CSR disclosure of developed and developing countries respectively

Source: Bhatia and Makker, (2020)

The growing environmental concerns and the need for healthy living have confronted manufacturing companies (particularly energy firms) with the dilemma of ethical production (Kang and Sung, 2021). This ethical dilemma is simply a situation where companies jostle between host community welfare, product quality, customer satisfaction, and financial profit. Thus, energy firms like Shell, Oando, NNPC, SeplatEnergies, ExxonMobil; and a host of other production firms have engaged in various corporate social responsibility practices and eco-friendly systems which include recycling materials, and provision of pro-environmental basic amenities like solar energy power supply, good environmental-friendly road networks, clean water, and the provision of lean economy (Shabbir and Wisdom, 2020).

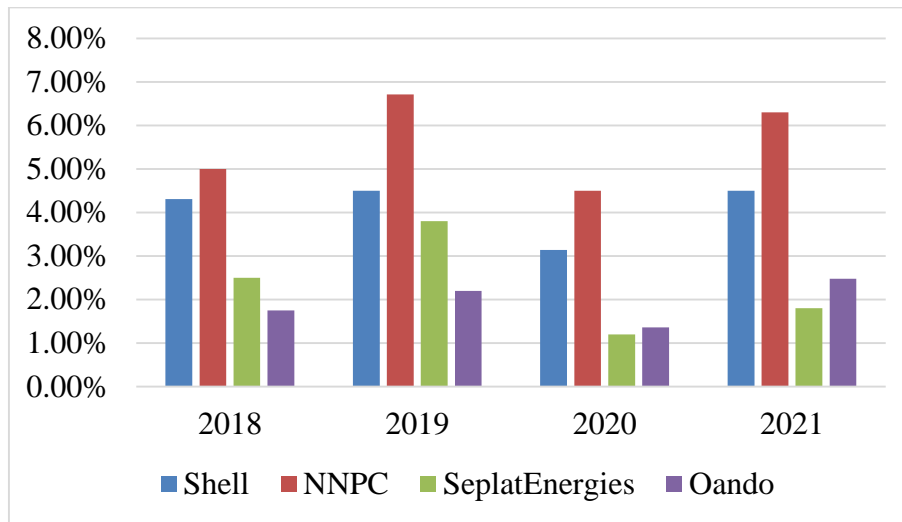


Figure 9: Graph showing the various energy firms' contribution to GCSR

Source: Seplat Energy, (2022); Shell, (2021); NNPC (2021); Oando, (2021); Statista, (2022)

The above graph illustrates a comparative analysis of four energy firms' contributions to green corporate social responsibility. Categorically, none of the above-mentioned energy firms reported the sum of their contribution to green corporate social responsibility. However, to derive a statistical representation of the annual financial implication of green governance and GCSR, the author summed all corporate social responsibility projects, environmental projects, and manpower projects (aimed at fostering environmental sustainability) and subtracted them from the annual financial turnover; thereafter got the percentage representation as mentioned above.

3. THEORETICAL ANALYSIS AND MODEL

3.1 The Stakeholder Theory

The stakeholder theory postulates that 'businesses can be understood as a set of relationships among stakeholders' (Dymtriev, Freeman and Hörisch 2020, p. 4). Though concise, this definition of stakeholder theory explains the nature of energy firms in pursuance of green governance practices and sustainability performance. In their study, Dymtriev, Freeman and Hörisch present three key ideas of the stakeholder theory. Firstly, the stakeholders' theory promulgates the integration idea of business practices. This means that most business operations do not take decisions which possess some form of ethical content; rather, a system of interrelated official functions of individuals is employed. Secondly, the stakeholder theory holds that relationships between members of the organizational workforce, social groups and consumers should be commensal and based on the ideologies of fairness and reciprocity. This idea of stakeholder theory conforms with the instrumental stakeholder theory which views all members of the organization as a responsible element that contributes to the attainment of green

governance and sustainability performance among energy firms in Nigeria. Thirdly, the contributions and efforts of stakeholders should be valued and supported by members of the organization. This means that the duties of every stakeholder should be sustainability-driven and supported by other stakeholders.

3.2 Relevance of stakeholder theory to the study

The implementation of green governance practices and sustainability performance in the global energy sector is a demonstration of institutional and organizational synergy between and among all stakeholders. Figure 11 is a model that illustrates the interrelationship between stakeholders in green governance practices and sustainability performance in Nigeria's energy firm. The group of stakeholders comprises the international and national agencies, the energy green board structure, and energy consumers. Observably, the global market economy is becoming more dynamic and weblike with customers interacting with producers and manufacturers of goods and services., and this has resulted in environmental concerns among nations and stakeholders in the global community. Furthermore, this study believes that for energy firms in Nigeria to function optimally, there must be interdependence, collaboration and cooperation among managers, employees, energy consumers and the regulatory agency to implement green governance practices and sustainability performance.

Over the years, stakeholder theory has become the focal point of management discourses and professional ethics in organizational values. This is because it embodies the collective effort of individuals and machinery to ensure the implementation of organizational goals and objectives.



Figure 10: Model, showing the interaction between stakeholder theory and green stakeholders

4. EMERGING TRENDS IN NIGERIA'S ENERGY SECTOR

Over the years, organizations across the globe are reducing their carbon footprints in the ecosystem in compliance with the global chase to net-zero vision. The pursuit of this vision has experienced various evolving concerns, trends, and institutional policies. Some of which include:

- a) Renewable Energy: Enerdata (2020) reports that using renewable energy, the National Renewable Energy Action Plan (2016) will increase national electricity production by 29% in 2030. Thereby increasing the electricity production from 4000MegaWatts to 15000MegaWatts by 2030. Exploring renewable energy opportunities would also strengthen the nation's economic spine to face the fiscal challenges confronting energy firms such as Oando and NNPC respectively (Jeremiah, 2023).
- b) ESG/Sustainability reporting: Observably, there has been a growing record of compliance by energy firms in Nigeria in their transparency and ESG/sustainability report as indicated in Figure 6. However, with the growing intensity of organizational GCSR and ESG practice, more energy firms in Nigeria are expected to comply with the global standard.
- c) Climate Change and SDG 13: Countries around the world are currently facing various forms of weather disruptions, rising sea levels, environmental degradation, and wildlife and/or aquatic extinction. Hence, this has formed the crux of sustainable development goal 13. SDG 13 focuses on climate change by defining critical objectives that each country must recognize in presenting its specific responsibilities. These responsibilities include:
 - i. Strengthening resilience and adaptive capacity of countries that are affected by natural hazards and environmental challenges.
 - ii. Improve community awareness of climate change mitigation, adaptation, and early warning.
 - iii. Implement the commitment undertaken by developed countries (G20 countries) who are parties to the United Nations Framework Convention on Climate Change (UNFCCC) to generate the sum of \$100 billion annually to cushion the effect of climate change in underdeveloped and developing countries (United Nations Climate Change, 2021).
 - iv. Promote operational mechanisms for increasing the capacity to effect climate change-related issues in less developed countries, and island states and empower women and youth population.
- d) The demand for less energy-consuming facilities: Most African countries would need to import some of the technological facilities needed to generate renewable energy meanwhile they have other natural resources in abundance; this has made the purchasing cost of renewable energy facilities a determinant of renewable energy usage (Okwanya, et al. 2020). Hence, energy firms in Nigeria would prefer to explore the available and sufficient energy supply.

5. RECOMMENDATIONS FOR FUTURE RESEARCH

Despite the contribution to the sum of knowledge this paper presents, there are still depths of information that are yet to be addressed.

- a) Individual compliance to green governance: According to Okwanya et al (2020), about 60% of Nigeria's population resides in rural settlements; and are not benefiting from the available energy resources (Owebor, et al. 2021). Hence, their participation and compliance with green governance are very low. Thus, a more narrowed research study can be carried out on the impact of rural dwellers' economic activities in compliance with green governance in Nigeria.
- b) Energy firms' green structure in Nigeria: From the above graphical representation in figures 6, 8 and 9, it shows that there is a record low private company participation, low sustainability performance and low green reporting among energy firms in Nigeria. Their contributions to green corporate social responsibility concerning annual financial reports are inconsequential. For instance, while Oando, Seplat Energies, and Shell Corporation recorded over 700 billion Naira (equivalent to \$1.7 billion) each in annual turnover for 2021, their compliance with green governance was below 5% of their annual turnover. Hence, this paper further presents an inquiry into the evaluation of sustainability performance and reporting among energy firms in Nigeria.
- c) Policy–actualization disparity: While the industrial index in many parts of the world is astronomically profiting, figures and data from Nigeria show that productivity is abysmally low in comparison. This assertion agrees with Okwanya et (2020), that affordability, reliability, and availability are the three major considerations for the choice of production systems and choice of energy consumption in Nigeria. The global green energy call according to Adewuyi, et al (2020) is described as a form of energy injustice to Africa because of its huge financial implication and insufficiency in the region.

6. CONCLUSION AND POLICY IMPLICATIONS

From the Rio de Janeiro Treaty signed in 1992 to the Stockholm Convention Treaty in 2001 and until the COP 26 conference in the United Kingdom, 2021, the global community has not relented in its pursuit for clean and sustainable eco system. Globally, the pursuit of sustainable energy sources and an eco-friendly environment is demonstrated by collaborative effort of nations under the auspices of the United Nations Environment Programme (UNEP) and other organization. Also, having established the dichotomous perspectives to energy sustainability, this paper submits that the target of net-zero emissions by 2060 is realistic. In Nigeria, the reduction of Green House Gases (GHG) is targeted at 20% by 2030 and with the support of international donor cooperations, Nigeria pledges to reach net-zero carbon emissions by 2060 (Enerdata, 2022). Additionally, this paper observes there is no cooperate punitive measure adopted by member countries of UNEP to defaulting nations or companies who fail to comply to the global call for the

reduction in the emission of GHG. Hence, this has contributed to the slow-paced compliance with the global target.

This paper posits that green governance is a contemporary policy framework that seeks to restore harmony between human interaction with the environment. The use of renewable energy sources, clean natural gas, and green organizational structures are essential tools for realizing the global green vision. Therefore, the role of companies and energy firms is crucial to the actualization of sustainable production and an environment-friendly society. However, from the study, sustainability performance among energy firms in Nigeria has been abysmally low compared to other nations. Some of the factors responsible for the low compliance to green governance policies are financial constraints, lack of skilled manpower resources in the use of renewable energy sources, and the organizational quest for profit above sustainable means of production. The economic-environmental justification for less developed countries has further contributed to the low compliance with international pro-environmental campaigns and green governance practices.

Reference

- 1) Adekunle, W. et al (2020). 'Predicting shock returns using crude oil prices: A firm level analysis of Nigeria's oil and gas sector', *Resources Policy*, 68, p. 101708. Available at: <https://doi.org/10.1186/s13705-021-00325-1>
- 2) Aderinokun, K. (2020). How natural gas can fuel Nigeria's Industrial revolution, 16 February, *ThisDay*. Available at: <https://www.thisdaylive.com/index.php/2020/02/16/how-natural-gas-can-fuel-nigerias-industrial-revolution#> (Assessed 02 June 2023)
- 3) Adewuyi, O.B. et al (2020). 'Challenges and prospects of Nigeria's sustainable energy transition with lessons from other countries' experience, *Energy Reports*, 6, pp. 993-1003. Available at: <https://doi.org/10.1016/j.egyr.2020.04.022>
- 4) Ajayi, O.O., Mokryani, G. and Edun, B.M. (2022). 'Sustainable energy for national climate change, food security and employment opportunities: Implications for Nigeria', *Fuel Communications*, 10, p.100045, pp. 1-6. Available at: <https://doi.org/10.1016/j.jfueco.2021.100045>
- 5) Akorede, Y.F. and Afroz, R. (2020). 'The relationship between urbanization, CO2 emission, economic growth and energy consumption in Nigeria', *International Journal of Energy Economics and Policy*, 10(6), pp. 491-501. Available at: <https://doi.org/10.32479/ijeeep.9355>
- 6) Al-Ghazali, B.M. and Afsar, B. (2021). 'Retracted: Green human resource management and employees' green creativity: The roles of green behavioural intention and individual green values', *Corporate Social Responsibility and Environmental Management*, 28(1), pp. 1-18. Available at: <https://doi.org/10.1002/csr.1987>
- 7) Alhawaj, A., Buallay, A. and Abdallah, W. (2023). Sustainable reporting and energy sectorial performance: developed and emerging economies, *International Journal of Energy Sector Management*, 17(4), pp. 739-769. Available at: <https://doi.org/10.1108/IJESM-10-2020-0020>
- 8) Alqudah, M.N.O et al. (2021). Green human resource management and organizational environmental sustainability during Covid-19 pandemic: A conceptual framework, *Advances in Economics, Business, and Management Research*, 194, pp. 158-167. Available at: <https://doi.org/10.2991/aebmr.k.211117.023>

- 9) Amiraslani, F. et al. (2022). 'The net zero carbon needs billion of zeros capital. But what about cheaper solutions?', *Urban Governance*, 2, pp. 282-284. Available at: <https://doi.org/10.1016/j.ugj.2022.09.001>
- 10) Bhatia, A. and Makker, B. (2020). 'CSR disclosure in developing and developed countries: a comparative study', *Journal of Global Responsibility*, 11(1), pp. 1-26. Available at: <https://doi.org/10.1108/JGR-04-2019-0043>
- 11) Bruckman, L., et al. (2022). 'Accelerate the mobilization of African and international scientific expertise to boost interdisciplinary research for the success of the Sahelian Great Green Wall by 2030,' *Land*, 11(10), p.1744. Available at: <https://doi.org/10.3390/land11101744>
- 12) Cerciello, M., Busato, F. and Taddeo, S. (2023). 'The effect of sustainable business practices on profitability. Accounting for strategic disclosure', *Corporate Social Responsibility and Environmental Management*, 30(2), pp. 802-819. Available at: <https://doi.org/10.1002/csr.2389>
- 13) Chairina, C. and Tjahjadi, B. (2023). 'Green governance and sustainability report quality: The moderating role of sustainability commitment in ASEAN countries', *Economies*, 11(27). Available at: <https://doi.org/10.3390/economies11010027>
- 14) Climate and Clean Air Coalition (2019). 'Nigeria's National Plan to reduce short-lived climate pollutant'. Retrieved from: <https://www.ccacoalition.org/resources/nigerias-national-action-plan-reduce-short-lived-climate-pollutants> [Assessed 2 September 2023]
- 15) Cronin, M. and Doyle-Kent, M. (2022). 'Creating Value with Environmental, Social, Governance (ESG) in Irish Manufacturing SMEs': A focus on Disclosure of Climate change risks and opportunities, *IFAC-PapersOnLine*, 55(39), pp. 48-53. <https://doi.org/10.1016/j.ifacol.2022.12.009>
- 16) Dmytriev, S.D., Freeman, R.E. and Hörisch, J. (2020). 'The relationship between stakeholder theory and corporate social responsibility: Differences, similarities and implications for social issues in management', *Journal of management Studies*, 58(6), pp. 1441-1470. Available at: <https://doi.org/10.1111/joms.12684>
- 17) Dunne, D. (2023). 'The carbon Brief Profile: Nigeria'. *CarbonBrief*. Retrieved from: <https://www.carbonbrief.org/the-carbon-brief-profile-nigeria/> (Assessed April 2023)
- 18) Eckert, E. and Kovalevska, O. (2021). Sustainability in the European Union: Analyzing the discourse of European green deal, *Journal of Risk and Financial Management*, 14(80), pp. 1-22. Available at: <https://doi.org/10.3390/jrfm14020080>
- 19) Edomah, N., Foulds, C. and Jones, A. (2017). Policy making and energy infrastructure change: A Nigerian case study of energy governance in the electricity sector, *Energy Policy*, 102, pp. 476-485. Available at: <http://dx.doi.org/10.1016/j.enpol.2016.12.053>
- 20) Ekhaesomhi, D. (2021). 'Sustainable environmental governance in Nigeria: Critical analysis', *The International Journal of Innovative Legal & Political Studies*, 9(4), pp. 99-103.
- 21) Enerdata (2021). Nigeria Energy Information. Retrieved from: <https://www.enerdata.net/estore/energy-market/nigeria/> (Accessed 06, May 2023).
- 22) Fuente, G.D. Ortiz, M. and Velasco, P. (2022). The value of firm's engagement in ESG practices: Are we looking at the right side? *Long Range Planning*, 55(4), pp. 1-26. Available at: <https://doi.org/10.1016/j.lrp.2021.102143>
- 23) Habib, M. and Congjiao, X. (2021). The Ajokuta-Kaduna-Kano Natural Gas Pipeline Project. An opportunity for the Nigerian Gass Sector. In *Proceedings of the International Petroleum and Petrochemical Technology Conference 2020*, pp. 43-57. Springer, Singapore.
- 24) Haessler, P. (2020). 'Strategic decisions between short-term profit and sustainability', *Administrative Sciences*, 10(63), pp. 1-31. Available at: <https://doi.org/10.3390/admsci10030063>

- 25) Hassan, A. and Kouhy, R. (2015). From environmentalism to corporate environmental accountability in the Nigerian petroleum industry: Do green stakeholders matter? *International Journal of Energy Sector Management*, 9(2), pp. 204-226. Available at: <http://dx.doi.org/10.1108/IJESM-05-2014-0008>
- 26) Hsiao, T., Chuang, C. and Huang, L. (2018). 'The contents, determinants and strategic procedure for implementing suitable green activities in star hotels', *International Journal of Hospitality Management*, 69, pp. 1-13. Available at: <https://doi.org/10.1016/j.ijhm.2017.10.005>
- 27) IEA, (2019). 'Nigeria Energy Outlook'. Retrieved from: <https://www.iea.org/articles/nigeria-energy-outlook> [Assessed 10 August 2023]
- 28) IEA, (2022). 'Framework for the implementation of intervention facility for the national gas expansion programme'. Retrieved from: <https://www.iea.org/policies/13420-framework-for-the-implementation-of-intervention-facility-for-the-national-gas-expansion-programme> [Assessed 11 August 2022].
- 29) Iheanachor, N. (2020). 'Sustainable business practices by Nigerian Organizations'. Available at: <http://dx.doi.org/10.5772/intechopen.93834>
- 30) IRENA, (2022). Energy Profile: Nigeria. Retrieved from: https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Africa/Nigeria_Africa_RE_SP.pdf [Assessed 05 May 2023]
- 31) Jeremiah, K. (2023). As Nigeria's energy sector walks in tightrope in 2023, *TheGuardian*. Retrieved from: <https://guardian.ng/energy/as-nigerias-energy-sector-walks-tightrope-in-2023/> (Assessed 19 May 2023)
- 32) Kalei, A., Arasa, R. and Achuora, J. (2022). Green human resource practices and environmental sustainability: From empirical evidence, *Machakos University Journal of Science and Technology*, 3.
- 33) Kang, E.Y. and Sung, Y.H. (2021). 'Luxury and Sustainability: The role of message appeals and objectivity on luxury brands' green corporate social responsibility', *Journal of Marketing Communications*, 28(3) pp. 291-312. Available at: <https://doi.org/10.1080/13527266.2021.1874482>
- 34) Kantabutra, S. and Ketprapakorn, N. (2020). 'Toward a theory of corporate sustainability: A theoretical integration and exploration', *Journal of Clean Production*, 270, p. 122292. Available at: <https://doi.org/10.1016/j.jclepro.2020.122292>
- 35) KPMG, (2022). 2022 Survey of sustainability reporting in Nigeria. Retrieved from: <https://assets.kpmg.com/content/dam/kpmg/ng/pdf/2022-survey-of-sustainability-reporting-in-nigeria.pdf> (Assessed 15 May 2023)
- 36) Li, W., Xu, J., and Zheng, M. (2018). 'Green governance: New perspective from open innovation, *Sustainability*, 10(11), p.3845. Available at: <https://doi.org/10.3390/su10113845>
- 37) Luu, T.T. (2020). 'Intergrating green strategy and green human resource practices to trigger individual and organizational green performance: the role of environmentally-specific servant leadership', *Journal of Sustainable Tourism*, 28(8), pp. 1193-1222. Available at: <https://doi.org/10.1080/09669582.2020.1729165>
- 38) Melles, G. (2021). Figuring the Transition from Cirtular Economy to Circular society in Australia, *Sustainability*, 13(19), p. 10601. Available at: <https://doi.org/10.3390/su131910601>
- 39) Mujtaba, A. et al (2022). 'Symmetric and asymmetric impact of economic growth, capital formation, renewable and non-renewable energy consumption on environment in OECD', *Renewable and Sustainable Energy Reviews*, 160, p. 112300. Available at: <https://doi.org/10.1016/j.rser.2022.112300>
- 40) NECP, (2020). 'Bouncing Back: Nigeria Economic Sustainability Plan'. Retrieved from: [ESC-Plan-compressed-1.pdf](#). (Assessed 15 September 2023)

- 41) NIPC, (2023). 'Opportunities Industry'. Retrieved from: <https://www.nipc.gov.ng/opportunities/industry/> (Assessed April 2023)
- 42) NNPC (2021). 'Sustainability'. Retrieved from: <https://www.nnpcgroup.com/sustainability> (Assessed 07 May 2023)
- 43) Ntsama, U.Y. (2022). *ESG and financial performance. The effect of audit quality and national culture in Nigeria and Kenyan context*. GRIN Verlag.
- 44) Nwaiwu, F. (2021). 'Digitalisation and sustainable energy transitions in Africa: Assessing the impact of policy and regulatory environments on the energy sector in Nigeria and South Africa', *Energy, Sustainability and Society*, 11(48), pp. 1-16. Available at: <https://doi.org/10.1186/s13705-021-00325-1>
- 45) Oando, (2021). 'Unaudited Consolidated and Separate Interim Financial Statements for the period ended 30 September 2019', https://www.oandopl.com/wp-content/uploads/2019/10/27967_OANDO_PLC_FINANCIAL_STATEMENTS_OCTOBER_2019.pdf [Assessed 10 July 2023]
- 46) Ogunkan, D.V. (2022). 'Achieving sustainable environmental governance in Nigeria: A review of policy consideration', *Urban Governance*, 2, pp. 216-220. Available at: <https://doi.org/10.1016/j.ugj.2022.04.004>
- 47) Okedere, O.B. et al. (2021). 'Drivers of anthropogenic air emissions in Nigeria-A review, *Heliyon*, 7(3), p.e06398. Available at: <https://doi.org/10.1016/j.heliyon.2021.e063998>
- 48) Okwanya, I. et al. (2020). 'Evaluating renewable energy choices among rural communities in Nigeria. An insight for energy policy', *International Journal of Energy Sector Management*, pp. 1-16. Available at: <https://doi.org/10.1108/IJESM-12-2019-0001>
- 49) Omotayo, A.O. et al (2022). 'Rising food prices and farming households food insecurity during the COVID-19 pandemic: Policy implications from SouthWest Nigeria. *Agriculture*, 12(3), p.363.
- 50) Onyena, A.P. and Sam, K. (2020). 'A review of the threat of oil exploitation to mangrove ecosystem: Insights from Niger Delta, Nigeria. *Global ecology and conservation*, 22, p.e00961. Available at: <https://doi.org/10.1016/j.gecco.2020.e00961>
- 51) Oyedepo, S.O. (2012). 'Energy efficiency and conservation measures: tools for sustainable energy development in Nigeria', *International Journal of Energy Engineering*, 2(3), pp. 86-98.
- 52) Paille, P. et al. (2020). Leveraging green human resource practices to achieve environmental sustainability, *Journal of Cleaner Production*, 260, p. 121137. Available at: <https://doi.org/10.1016/j.jclepro.2020.121137>
- 53) Robinson, J. (2004). 'Squaring the circle? Some thought on the idea of sustainable development', *Ecological Economics*, 48(4), pp. 369-384. Available at: <https://doi.org/10.1016/j.ecolecon.2003.10.017>
- 54) SeplatEnergy, (2022). Audited report 2021. Available at: <https://www.seplatenergy.com/media/qqrhhro/seplat-energy-fy-2021-results-presentation-final-28022022.pdf> (Assessed 04 June 2023).
- 55) Shabbir, M.S. and Wisdom, O. (2020). The relationship between corporate social responsibility, environmental investments and financial performance: evidence from manufacturing companies', *Environmental Science and Pollution Research*, 27, pp. 39946-39957. Available at: <https://doi.org/10.1007/s11356-020-10217-0>

- 56) Shah, S.Q. et al. (2022). 'Developing a green governance framework for the performance enhancement of the oil and gas industry', *Sustainability*, 14(7), p. 3735. Available at: <https://doi.org/10.3390/su14073735>
- 57) Sharma, G.D. et al. (2021). 'Exploring the nexus between non-renewable energy consumptions and economic development: Evidence from pane estimation', *Renewable Energy and Sustainable Energy Reviews*, 146, p. 111152. Available at: <https://doi.org/10.1016/j.rser.2021.111152>
- 58) Shell, (2021). Shell plc. Annual report and accounts for the year ended December 31, 2021. Available at: https://reports.shell.com/annual-report/2021/_assets/downloads/shell-annual-report-2021.pdf (Assessed 03 June 2023)
- 59) Song, W., Yu, H., and Xu, H. (2020). Effects of green human resource management and managerial environmental concern on green innovation, *European Journal Innovation Management*, 24(3), 951-967. Available at: <https://doi.org/10.1108/EJIM-11-2019-0315>
- 60) Soyemi, A.O. et al. (2021). A robust energy policy review of selected African countries: An impetus for energy sustainability in Nigeria, *Journal of Physics: Conference Series*, P.1734, pp. 1-9. Available at: <https://doi.org/10.1088/1742-6596/1734/1/012028>
- 61) Statista, (2022). 'Solar energy capacity in Nigeria from 2012-2021'. Retrieved from: <https://www.statista.com/statistics/1278096/solar-energy-capacity-in-nigeria/> (Assessed 07 May 2023)
- 62) United Nations Climate Change, (2021). What is the United Nations Framework Convention on Climate Change? Retrieved from: <https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change> [Assessed 11 July 2023]
- 63) WorldData.info (2021). 'Energy consumption in United States of America'. Retrieved from: <https://www.worlddata.info/america/usa/energy-consumption.php> (Assessed 07 May 2023)
- 64) Ziabina, Y. and Pimonenko, T. (2020). The Green Deal Policy for renewable energy: a bibliometric analysis, *Virtual Economics*, 3(4), pp. 147-168.