**Renewable Energy Policy and Sustainable Development in Nigeria: A Systematic Scoping Review**

**Abstract**

The article examined renewable energy policy and sustainable development in Nigeria using a systematic scoping review. Information and materials were obtained from secondary sources such as journal articles, books, and other online materials cutting across quantitative, qualitative and review studies and cover the year range between 2000 and 2025. Several search engines such as Google scholar, RefSeek, and others were used for searching process, and information retrieved were subjected to content and thematic analysis. The findings revealed that, renewable energy policy pose both moderating and direct effects on the propensity to achieve sustainable development in Nigeria. As moderating effect, it could serve as a moderating factor in the relationship between renewable energy system, in terms of demands and supply and sustainable development. With regards to the direct impact, it could serve as direct impact on the achievement of sustainable development in Nigeria. However, several challenges such as regulatory bottlenecks, effective use of policy to transform the renewable energy system, lack of policy that could support the effective use of technology for renewable energy system, and othersare affecting the effective use of renewable energy policy that tend to affect the potential for the Nigeria renewable system to create significant impetus on the sustainable development of the nation. The article recommends that government and policy makers should integrate renewable energy into overall energy policy, thereby making it a core component of the overall energy strategy, rather than a separate entity.

**Keywords:** **Renewable Energy, Renewable Energy Policy, Sustainable Development, Nigeria**

**1. Introduction**

The UN Summit for Sustainable Development built on the previous [Millennium Development Goals](http://www.undp.org/content/undp/en/home/mdgoverview/mdg_goals.html) (MDGs) and presented a set of 17 Sustainable Development Goals (SDGs) towards ending poverty, inequality, injustice, and ensuring a better and transformed climate condition hence, achieving sustainable development by 2030. Although, all these 17 Sustainable Development Goals (SDGs) are very important to drive sustainable development at the local, regional and global levels, but a major focus is ensuring access to affordable, reliable, sustainable and modern energy for all. The justification for this is premised on the notion that energy has been recognized as a major enabler for attaining and sustainable development hence, access to energy, which renewable energy is a major part has become an attraction in top global priorities for the attainment of sustainable development (Brent, 2021; Serowaniec, 2021; Bórawski, Wyszomierski, Bełdycka-Bórawska, Mickiewicz, Kalinowska, Dunn & Rokicki, 2022; SEforALL, 2024).

Empirical studies such as Sambo (2011); Emodi and Boo (2015); Somorin et al. (2019); Adesola & Brennan (2019); and others revealed that uninterrupted access to affordable energy supplies for billions of people can significantly stimulate rapid economic growth. Additionally, such access is crucial for fostering human and technological development, which is essential for achieving sustainable development goals (SDGs) (Uyigue, 2008; Nalule, 2019). Also, Akinbami and Momodu, (2011) pointed out that there is a strong correlation between economic development and energy consumption. Thus, an increase in the consumption of energy for economic activities could significantly contribute to the overall advancement in living standards of the population of any nation (Afe Aidelojie, 2019). In other words, the level of electricity consumption closely mirrors the level of economic development of a nation (Akinbami and Momodu, 2011).

According to the United Nation (2023), achieving SDG 7, focuses on ensuring better and affordable access to energy through the acceleration of electrification, increasing investments in the renewable energy, improving the energy efficiency and also developing the enabling policies and regulatory frameworks that could foster the attainment of SDG for all by 2030. .From global perspective, the United Nation (2023) noted that approximately 733 million people do not have affordable access to electricity. Also, in 2021, 675 million people do not have access to electricity globally while, 586 million people do not have access to electricity in Africa (SEforALL, 2024).

In 2018, Africa’s population increased to around 17% with an expansion at more than twice the global rate to reach almost 1.3 billion, of which almost 85% or 1.1 billion were living in sub-Saharan Africa with little or no energy supplies, leading to a substantial energy demand and supply imbalance (United Nations of Economic and Social Affairs (UNDESA), 2019). The demand for energy in African countries with high population indices, such as Nigeria, the Democratic Republic of the Congo (DR Congo - Africa’s fourth most populous country), and Mozambique, surpasses the supply (Somorin et al., 2019) with their primary energy demand increasing by over 50% between 2010 to 2018 (IEA, 2019). In addition, it was estimated that approximately 660 million people, majority would be in Sub-Saharan Africa, would lack affordable access to electricity by 2030 (SEforALL, 2024).

Bouzarovski, and Simcock (2017) called this inability to secure the necessitated energy services to meet the energy demand of the rising population in Africa as ‘energy precarity'. Energy precarity implies energy deprivation, vulnerability (Petrova, 2018) and the difficulties in obtaining the energy required to meet basic energy needs (Legendre and Ricci, 2015). It could also be viewed as a situation where there is inadequate access to sustainable and modern energy sources (Bouzarovski, et al., 2016). However, energy precarisation is predominantly common a a major feature of many developing countries in sub-Saharan Africa such as Nigeria, where millions of people have no daily access and use of energy and others use dirty polluting fuels and several others spend excessive high resources to obtain the fuel needed to meet their basic energy needs (Emodi and Boo, 2015).

This could be a major reason why Africa has been a minor contributor to global greenhouse gas emissions. IEA (2019) revealed that energy-related CO₂ emissions in Africa represents approximately 2% of cumulative global emissions and would further increase to 4.3% over the period from 2019 to 2040 in all rapid economic growth scenarios. This has orchestrated certain efforts aimed at mitigating climate issues through major energy shifts or energy transitions from fossil fuel sources to renewable energy technologies such as solar, hydro, wind, biomass, and geothermal (Wood, 2018). Studies such as OECD (2017); Jacobson et al. (2017); Tacher (2019); IEA (2019); and others admonished that shifting from a fossil fuel energy system to renewable energy technologies holds enormous new opportunities that are closely linked to successful growth and development with a significant impact on the living standard of people both socially and economically. However, not much results have been achieved to this end (Wood, 2018)

For example, Nigeria being the most populated black nation in the world still faces the crisis of energy precarity. The 2018 report on energy supplies indicated that 55% of Nigeria's entire population has access to an interruptible power supply (United Nations of Economic and Social Affairs (UNDESA, 2019). With the increasing population in Africa, which Nigeria is a major part, such increasing lack of energy by majority could exacerbate elastic negative resonance effects on the attainment of sustainable development. Thus, in order to make sure that access to affordable energy is increased towards enhancing the propensity to attain sustainable development, the United Nation (2023) noted the prevailing and significant romle of developing an enabling policies and regulatory frameworks that could foster the attainment of SDG for all by 2030. Kolagar et al. (2020); Serowaniec (2021) and Bórawski et al. (2022) revealed that the development of better and effective policies and regulatory for renewable energy is very paramount to achieving sustainable development in any country.

Kolagar et al. (2020) noted that energy related issues are multidimensional in nature, and the designing of strategies and policy to ensure better and effective assess need that several alternatives are also evaluated to ensure right decisions during the process of planning and policy-making for the renewable energy use in order to cushion certain associating damages that are irrecoverable to the economy of the nation hence, making policy making process a vital factor in ensuring effective renewable energy supply and use for sustainable development in Nigeria.

According to Gorlach, et al (2007); Uslu, Mozzaffarian and Stralen (2016); Di Gregorio et al. (2017); European Union (2017); Nalule (2019) and Adewuyi, et al. (2020) a good government policy framework and plans are very germane and are a form of cyclical process from problem identification to policy evaluation. It also important to perform a regulatory impact analysis, benchmarking or distance to the target, benefit analysis and cost-effectiveness analysis, and others towards ensuring better policy that could meet the purpose, which in this study is renewable energy policy making towards achieving sustainable development in Nigeria. This process as stated by Görlach et al. (2007); Uslu et al. (2016); Di Gregorio et al. (2017); European Union (2017); Nalule (2019) and Adewuyi, et al. (2020) and the multidimensional nature of energy related issues as stated by Kolagar et al. (2020) could make renewable energy policy making very complicating and could in the long run pose negative effects on the sustainable development in Nigeria. To this end, this major article focuses on examining the renewable energy policy making and how it affects sustainable development in Nigeria.

**2. Literature Review**

Nigeria has been so involved in ensuring effective energy system hence, the nation's energy sector has experienced substantial growth (Akinlo, 2012). At the international level, Nigeria has been an active participant in response to the call for cooperation and participation by all countries to reduce global greenhouse gas emissions: such as in the United Nations Framework Convention on Climate Change in 1994, the Kyoto Protocol in 2004, the Copenhagen and Cancun Agreements in 2010, Durban Platform for Enhanced Action in 2011, and the Paris Agreement (FGN, 2015). Also, at the regional level, the West African Power Pool (WAPP) was targeted towards ensuring a unified regional electricity market for a stable and reliable electricity supply that is cost-effective (WAPP, 2018). Also, at the local level, several transitions have been accompanied with different and several programs, policies, and initiatives in the local Nigerian energy sector (see: Table 1) (Gungah, et al., 2019).

# Table 1 RE Policies, Programs and Regulatory Frameworks in Nigeria

|  |  |  |
| --- | --- | --- |
| 1 | National Electric Power Policy (NEPP) | 2001 |
| 2 | National Energy Policy (NEP) | 2003 |
| 3 | National Economic Empowerment and Development Strategy (NEEDS) | 2004 |
| 4 | National Power Sector Reform Act (EPSRA) | 2005 |
| 5 | Renewable Electricity Policy Guidelines (REPG) | 2006 |
| 6 | Renewable Electricity Action Program (REAP) | 2006 |
| 7 | National Biofuel Policy and Incentives | 2007 |
| 8 | Vision 20:2020 | 2010 |
| 9 | Roadmap for Power Sector Reform | 2010 |
| 10 | National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) | 2012 |
| 11 | National Energy Master Plan (Draft Revised Edition) | 2014 |
| 12 | Energy Implications of Vision 20:2020 and Beyond | 2014 |
| 13 | Renewable Energy Master Plan |  |
| 14 | National Renewable Energy and Energy Efficiency Policy (NREEEP) | 2015 |
|  | Multi-Year Tariff Order (MYTO) | N/A |
|  | Draft Rural Electrification Strategy and Plan (RESP) | 2015 |
| 15 | Intended Nationally Determined Contribution (INDC) | 2015 |
|  | National Energy Policy (Draft Revised Edition) | 2018 |

However, Bamgbopa *et al*. (2019) critique Nigerian energy policy as housed in two recent main national energy policy documents: National Energy Policy (NEP) (Energy Commission of Nigeria, 2003) and the National Renewable Energy and Energy Efficiency Policy (NREEP) (Ministry of Power, 2015). They found that the components of the national energy policy and relevant documents are largely adequate as it encompassed the necessary areas of attention. However, the affirmed that there are need for continued focus and amendment to the national energy policy, particularly with regards to electric capacity expansion with an increasing percentage of renewables, expansion of local oil refining capacity, efficient gas gathering/management, and gas flaring eradication.

Despite these efforts, the energy sector in Nigeria continues to grapple with significant setbacks and has affected access to renewable energy in Nigeria. Energy access has long been recognized as a fundamental prerequisite for addressing major global challenges of the twenty-first century and has gained a lot of attention following the adoption of the Sustainable Development Goals (SDGs) for 2030, with SDG 7(ensure access to affordable, reliable, sustainable and modern energy for all) emphasizing the need for access to energy supply for all (UNEP, 2017; Mathew et al., 2018; Nalule, 2019). Hence, it is not a gainsaying or fallacy to hypothesised that, energy access or effective energy system in any nation could increase the propensity to attain sustainable development.Ultimately, providing access to energy would be for the purpose of enhancing development (Pachauri, 2011) and is essential for a better life (Mupunga, 2011)hence, in attaining sustainable development in the long run.

However, in the past two decades, there has been a tremendous increase in energy demand that has forced most Sub-Saharan Africa countries such as DR Congo, Ghana, and Nigeria to diversify investment in a variety of energy sources to meet these increasing demands (Carli et al., 2018). In diversifying sustainable energy sources, renewable energy sources become the best option to meet global, regional, and local energy demands (Emodi and Ebele, 2016; Jurasz et al., 2020). In the early 90s, the term “renewable energy” sparked a series of debates among scholars; some used the term as a contrast to exhaustible fossil fuel sources (Bell, 1906; Clarke et al., 1909) while others used arguments to make a distinction between ‘renewable energy’ and ‘inexhaustible energy’ sources, referring to draught animals and fuel-wood power sources as "renewable" while classifying solar radiation, wind, tidal, and hydropower as "inexhaustible" (Clarke et al., 1909 cited in Harjanne and Korhonen, 2019).

The International Energy Agency defines renewable energy as *"energy derived from natural processes that are replenished at a faster rate than they are consumed"* (IEA, 2019). These energy sources are, specifically, solar, hydro, wind, biomass, geothermal, and marine energy. Also, the term renewable energy is sometimes referred to as green energy (Chakraborty and Mazzanti, 2020; Bucur and Bucur, 2020), clean energy (IEA 2019; Somorin et al., 2019; Berry, 2020), or non-conventional energy and is used to describe certain types of energy production that appear as the key solution to global climate challenges (Harjanne & Korhonen, 2019). Although this doesn't justify the fact that renewable energy sources have zero negative impact on the environment (Abbasi and Abbasi, 2000), compared to fossil fuels, renewable energy has a low negative environmental impact while contributing to economic growth. As such, more and more countries have begun to search for new development paths to enhance the use of renewable energy for sustainable development.

As such, policy scholars over the years have effectively leveraged on these opportunities and focus on how theories, models, and frameworks could be deployed to achieve better policy process and outcomes that could respond to a variety of key policy questions, particularly with regards to renewable energy system (Ruseva *et al.,*2019). The process of developing policy to support renewable energy advancement requires an assessment of the legal, regulatory, and economic framework towards ensuring the renewable energy capacity (Chapman, McLellan, and Tezuka, 2016). The process of developing an effective renewable energy policy process faces challenge, particularly among policy design actors. This is because of the fact that the tools needed to achieve renewable energy policy goals are often economically based, cutting across the investment cost, price level, tax or depreciation concessions, and monetary compliance penalties (Chapman et al., 2016).

Also, drawing inference from the SDGs,that energy system has a link with the attainment of SDGs and constitutes a major goal, which is goal 7, in the SDGs as presented in Figure 1, hence, there could be need to understand the effect of renewable energy policy on sustainable development. Although, the effect of renewable energy on economic growth have over time produced mix results in literature as studies have noted that renewable energy could either pose positive (Alege et al., 2019), negative (Ocal and Aslan, 2013; Astariz and Iglesias, 2015) or not significant result (Tugcu and Tiwari 2016; Schilling and Esmundo, 2009) on economic development.

Focusing on sustainable development, Moe (2005) affirmed that achieving sustainable development, particularly as used in this present study, which is through renewable energy policy, could be understood under the three pillars of sustainable development which are economic, social and environmental effects. According to Brightest (2024), full sustainable development covers the terrain of harmony among these three pillars of sustainable development. This is explained further in Figure 1.

Promote environmental Sustainability well-being

Energy availability, accessibility and affordability to maximizing quality of life.

Macroeconomic solidity and competitiveness in renewable energy for accelerating economic growth

Driving Force from Economic Dimension

(Disparity in Income & Energy)

**Economic Dimension**

**Social Dimension**

**Environmental Dimension**

Driving Forces from  
Social Dimension

Driving Forces from  
Energy Sector of  
Economic Dimension

**State of  
energy  
sector**

**Impact  
from energy  
sector**

**Impact  
from energy  
sector**

**Figure 1 Interrelationships among sustainability dimensions of the energy sector.**

*Adapted from IAEA Energy Indicators for Sustainable Development (2007)*

Drawing emphasis from the several works that, not only renewable energy system but also renewable energy policy could affect sustainable development of nation, it is also very germane to understand the influence of renewable energy policy on sustainable development. Edomah *et al.* (2016) investigate the linkages and consequences of the policy decision process in the governance of energy infrastructure in Nigeria and revealed that policymakers play major role in achieving development in Nigeria.

Romano, (2015) did an analysis of the impact of competition policy on economic growth, using a panel data model and focused on 138 sampled countries between 2009 and 2013. The research indicates that there is a direct relationship between competition policy effectiveness and the percentage change in real GDP per capita, thus providing empirical evidence of the positive effects of policy enforcement on macroeconomic performances of nations. Also, Salman (2016) examined the relationship between policies and economic growth with focus on the generation of opportunities to entrepreneurial activities that could pose tremendous effects on economic growth. The study found that policies supporting entrepreneurial activities pose a significant impact on accelerating economic development and growth through several policy related tools such as education levels, enhancing research and development, attractive taxes policies, stable monetary policy, and others.



# Figure 2 Energy is linked to all the remaining Sustainable Development Goals

*Sources: SEforALL (2017)*

Hence, this could pose significant effect on achieving sustainable development. To this end, this article focuses on evaluating the renewable energy policy making and how it could pose significant effect on sustainable development in Nigeria.

**3. Methodology**

The systematic review method was adopted in this article, and information and materials used were obtained from secondary sources such as journal articles, books, and other online materials. Also, the article considered publications or materials that focused on empirical studies which include quantitative and qualitative studies and also review methods such as systematic, meta analysis, and so on. Materials from News, Magazines, among others that address the subject matter of this article were also used. Moreover, articles and materials used cover the year range between 2000 and 2025 to better enable the study elicit several information that focused on the research questions and aim.

Also, the article used the [Cochrane reviews](http://community-archive.cochrane.org/about-us/evidence-based-health-care) style for the systematic review process and the PICOS framework was used. The PICOS represents (Richardson, 1995):

P – The Problem of interest, which in this study centres on issues relating to Renewable Energy Policy making in Nigeria

I – The Intervention, include the necessary policies that have been put in place to enhance the renewable system in Nigeria for consumption

C – The control, not applicable in this article.

O – The Outcome(s), which include achieving sustainable development through the renewable energy policy making in Nigeria.

S –The Study type to be adopted in this article such as quantitative, qualitative and review studies. Also, of importance are News, Magazines, Websites of organization, and others.

In addition, information and materials used were sourced for from Google, Google scholar, Semantic Scholar, and RefSeek. Several results and outcomes were obtained to the queries supplied by the researcher into the sources. However, the article could also use only few (only eight articles), because of the need to ensure quality and also focused on the aim of the article. Also, the PRISMA Flow Diagram was used to inform the search strategy as presented in Figure 3 below.

Records identified through database searching (n =114)

Additional records identified through other sources (n = 57)

Records after duplicates removed (n = 73)

Records screened (n = 37)

Records screened (n = 46)

Full-text articles excluded

8

Full-text articles assessed for eligibility (n = 31)

Studies included in the quantitative synthesis (n = 23)

**Figure 3: PRISMA Flow Diagram**

*Source:* Page et al.,2021

The articles selected for the study includes the works of Nnaji and Muo (2015); Ajayi et al. (2016); Emodi and Ebele (2016); Emodi (2016); Soelaiman (2015); Joseph (2017); Somorin, et al. (2017); Adedipe et al. (2018); Adejumo & Adejumo (2018); Adedipe et al. (2018); Rui et al. (2018); Breeze (2019); Sebastiano et al. (2019); World Bank Group (2020); Idris, et al. (2020); Garapati et al. (2020); Adesanya et al. (2021); Ayokunle (2021); Onyekwelu (2021); Munyengeterwa & Whittaker (2021); Chanchang et al. (2022); Wang et al. (2023) and [Chinedu](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7425263) (2025). Moreover, the article deploys the use of thematic analysis to analyse the information retrieved. These information were grouped into major themes of the study with regards to the major aims and research objectives and questions, and a thematic analysis was used for analyse to achieve the major aim of the study.

**4 Results**

The article used twenty three (23) studies from the total downloaded articles and the result section is divided into two based on the research questions to be addressed. Also, Nnaji and Muo (2015) examined the feasibility of using solar PV systems for rural electrification in Nigeria and found that solar PV systems could provide a reliable source of electricity for the development of rural communities because they are relatively easy to install, maintain, and do not require complex infrastructure. Their study also suggested that the adoption of solar energy could improve the socio-economic development of rural areas by generating income and creating employment opportunities. Ajayi, Ohijeagbon, Mercy & Ameh (2016) examined the potential and econometrics analysis of standalone renewable energy facility for the utilization and embedded generation among rural communities in North-East Nigeria, and found that solar photovoltaic technology is a viable option to achieve sustainable development goals in the Nigeria. Emodi and Ebele (2016) examined policies enhancing renewable energy development and the implications for Nigeria through a review method, and revealed effective policies and strategies could enhance the propensity to achieve development of renewable energy technologies hence, sustainable development in Nigeria in the short, medium and long-run.

Also, Emodi (2016) examined energy policies for sustainable development strategies in Nigeria, and showed that there is need for identifying lowest-cost energy production as a major sustainable strategy that could foster development in Nigeria. The findings also revealed the need for policy makers to devise effective policy for energy system towards achieving sustainable strategies development in Nigeria. Adejumo & Adejumo (2018) examined sustainable development and its implications for energy policy in Nigeria, and noted that the significant impact energy resources play in economic development, reveals the need for providing appropriate effective energy policy responses towards achieving sustainability through the provision and use of energy in Nigeria. To this end, certain energy policy that could serve as instrument to enhance the achievement of sustainable development in Nigeria includes policy related to low cost energy and state-market approaches.

Also, Chanchang et al. (2022) noted that solar energy could and has contributed to the nation’s energy mix but its impact and use remains insignificant compared to its potential benefits. Hence, revealing that the new trends in renewable energy, such as solar energy are underutilized in Nigeria. The study of Rui et al. (2018) clearly noted that a comprehensive regulatory policy could be a major instrument to tap and use the new trends of renewable energy, such as solar energy to achieve effective sustainable development in Nigeria. A study conducted by the World Bank Group (2020) revealed that Africa, which Nigeria is a part possesses an immense technical wind potential of nearly 180,000 terawatt hours (TWh) per year that could be used to generate energy to complement the available solar energy and provide power to tens of millions of households, while also creating employment opportunities for millions of people. According to Munyengeterwa and Whittaker (2021), Africa’s wind potential alone, which Nigeria is also part, could meet the continent’s electricity demand 250 times over..

Similarly, Idris, et al. (2020) reviewed past and present studies on wind energy in Nigeria, focusing on assessing wind energy resources and the economics of wind energy and concluded that the southern regions had lower wind speeds compared to the north, and other areas such as Katsina State has the potential for large-scale wind turbine development. Also, Adedipe et al. (2018) conducted a comprehensive study on Nigeria’s onshore wind energy potential, examining the suitability of different geographic zones for wind power generation and stated that wind energy system in Nigeria is underdeveloped, Also, Adesanya et al. (2021) conducted an economic analysis of OTEC potential in Nigeria, and found that the country's conditions are favourable for the development of a floating 100 MW OTEC plant, with investment costs expected to be recouped within 15 years.

Ayokunle (2021) noted that despite all the energy formulated and enacted in Nigeria for sustainable development, Nigeria energy policies, regulations and management of operations have failed to meet the necessary demands and supplies of the required energy. Lawal (2021) examined law, policy, and the development of renewable energy for electricity in Nigeria and revealed that the various attempts to be able to diversify energy sources in Nigeria have been unsuccessful despite the available policy directed towards the support of achieving inclusive renewable energy sources in Nigeria. Hence, Nigeria needs to provide effective law and policy that could encourage renewable energy uptake in the nation.

[Chinedu](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7425263) (2025) reexamined the renewable energy development in Nigeria, focusing on laws, policies, and trends, and stated that key policies for achieving sustainable renewable energy, hence, on achieving sustainable growth in Nigeria are the National Renewable Energy and Energy Efficiency Policy (NREEEP). Also, there is emerging trends in rise of off-grid solar systems, public-private partnerships, and international collaborations that present promising opportunities for the renewable energy growth to position the nation for enhancing sustainable development.

Furthermore, studies have identified six emerging geothermal technologies that could be deployed and used in enhancing sustainable renewable energy development and include: hot dry rock (HDR) systems (Breeze, 2019; Soelaiman, 2015), hydrothermal systems (Joseph, 2017; Sebastiano et al., 2019), magma-based systems, enhanced geothermal systems (EGS), waste heat recovery (Wang et al., 2023; Garapati et al., 2020), and geopressured systems. This could also be deployed in Nigeria renewable energy towards the attainment of sustainable development, particularly in Nigeria.

The result from the reviews of the works of Nnaji and Muo (2015); Ajayi et al. (2016); Emodi and Ebele (2016); Emodi (2016); Soelaiman (2015); Joseph (2017); Adejumo & Adejumo (2018); Adedipe et al. (2018); Rui et al. (2018); Breeze (2019); Sebastiano et al. (2019); World Bank Group (2020); Idris, et al. (2020); Garapati et al. (2020); Adesanya et al. (2021); Ayokunle (2021); Munyengeterwa and Whittaker (2021); Chanchang et al. (2022); Wang et al. (2023); and [Chinedu](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7425263) (2025) revealed that, not only there is a profound relationship between renewable energy system and sustainable development, but that renewable energy policy making and its process could affect the renewable energy system, in terms of demands and supply and also serve as direct impact on sustainable development and also serve as moderating factor on the relationship between renewable energy system and sustainable development in Nigeria. Hence, revealing a major role of the renewable energy policy making in the relationship between renewable energy system and sustainable development in Nigeria and also playing a direct role on the achievement of sustainable development in Nigeria.

**Challenges of Renewable Energy policy on Sustainable Development**

Adedipe et al. (2018) conducted a comprehensive study on Nigeria’s onshore wind energy potential, examining the suitability of different geographic zones for wind power generation and stated that wind energy system in Nigeria is underdeveloped, and this is largely due to inadequate research and technology, lack of government support for wind energy initiatives, and issues related to land ownership and acquisition in Nigeria. Also, Somorin, et al. (2017) revealed that the country's over-reliance on hydropower systems, which fluctuate with seasonal water levels, serves as one of the primary causes of the effective use of several renewable energy system in Nigeria. This also may be included as major issue confronting the need for policy makers to provide effective renewable energy policies towards the attainment of sustainable development, particularly through the effective demand and supply of renewable energy in Nigeria.

Also, the findings of Onyekwelu (2021) revealed that the issues related to abandonment of project and a lack of strong emphasis on wind energy in Nigeria’s renewable energy policies compared to other renewable sources is a major issue confronting the provision of effective renewable energy policies that could create significant impetus on the renewable energy sustainability in Nigeria hence, the achievement of sustainable development. Also, Bello et al. (2019) revealed that the lack of policy that could support the effective use of technology for renewable energy system in Nigeria do hamper the sustainability of the energy resources hence, on sustainable development in the long run.

[Chinedu](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7425263) (2025) reexamined the renewable energy development in Nigeria, focusing on laws, policies, and trends, and stated that several challenges such as regulatory bottlenecks, high capital costs, technical capacity gaps, and market distortions from fossil fuel subsidies hinder progress in the effective use of policy to transform the renewable energy system of Nigeria into achieving sustainable development goals in the nation.

The result from the reviews of Somorin, et al. (2017); Adedipe et al. (2018); Onyekwelu (2021) and [Chinedu](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7425263) (2025) revealed that several challenges are affecting the effective use of renewable energy policy that tend to affect the potential for the Nigeria renewable system to create significant impetus on the sustainable development of the nation.

**Discussions**

The article examined renewable energy policy and sustainable development in Nigeria using a systematic scoping review. It was found that not only that renewable energy policy could pose both moderating and direct effects on the propensity to achieve sustainable development in Nigeria. As moderating effect, it could serve as a moderating factor in the relationship between renewable energy system, in terms of demands and supply and sustainable development. With regards to the direct impact, it could serve as direct impact on the achievement of sustainable development in Nigeria. This result concurs with the findings of Uyigue (2008); Akinbami and Momodu, (2011); Sambo (2011); Emodi and Boo (2015); Somorin et al. (2019); Adesola & Brennan (2019); Nalule (2019); and others that affordable energy supplies could stimulate rapid economic growth.

Drawing inference from the work of Afe Aidelojie (2019), that an increase in the consumption of energy for economic activities has the tendency to affect the overall advancement in the living standards of the population of any nation, it could in extension mean that, renewable energy, and also renewable energy policy could create significant impetus on sustainable development in the long run. This could also help to meeting the energy needs of the approximately 733 million people who do not have access to affordable energy such as electricity as stated by the United Nation (2023) and the 586 million people who do not have access to energy such as electricity in Africa as stated by SEforALL (2024). This could also assist in meeting the poor energy supplies and substantial energy demand as stated by the United Nations of Economic and Social Affairs (UNDESA) (2019) in the Saharan Africa.

In addition, such renewable energy, and also renewable energy policy could help reduce the propensity for the increasing energy precarity in Nigeria as stated by Legendre and Ricci (2015); Bouzarovski, et al. (2016); Bouzarovski & Simcock (2017); Petrova (2018); and others and also foster the attainment of sustainable development in the long run. This also bolsters the works of Emodi & Ebele (2016) and Jurasz et al. (2020) that renewable energy sources become the best option to meeting global, regional, and local energy demands towards enhancing the achievement of sustainable development in Nigeria. This also concurs with the works of OECD (2017); Jacobson et al. (2017); Tacher (2019); IEA (2019); and others that due to the increasing knowledge of the effects of renewable energy usage on sustainable development, there have been shift to using renewable energy technologies towards increasing the likelihood of successful growth and development that would show on the living standard of the people both socially and economically.

This supports the work of Brent (2021); Serowaniec (2021); Bórawski et al. (2022); SEforALL (2024); and others that renewable energy policy is a major tool to attain sustainable development. This also concurs with the findings of Görlach et al. (2007); Uslu et al. (2016); Di Gregorio et al. (2017); European Union (2017); Nalule (2019) and Adewuyi, et al. (2020) that a good government policy framework and plans are very important to solve major energy issue in Nigeria that could also drive towards achieving sustainable development. This supports the work of Romano (2015); Edomah *et al.* (2016); Salman (2016) that policy decision process, particularly by government and policymakers play major role in the process of achieving development in Nigeria.

Despite the significant benefits of renewable energy and related policy to sustainable development in Nigeria, several challenges such as regulatory bottlenecks, effective use of policy to transform the renewable energy system, lack of policy that could support the effective use of technology for renewable energy system, and othersare affecting the effective use of renewable energy policy that tend to affect the potential for the Nigeria renewable system to create significant impetus on the sustainable development of the nation. This supports the findings of Chapman et al. (2016) that poor legal, regulatory and economic framework could affect renewable energy capacity towards meeting the demands of the population hence, creating negative effects on the attainment of sustainable development in the long run. These factors could be major reasons why Schilling and Esmundo (2009); Ocal and Aslan (2013); Astariz and Iglesias (2015); and Tugcu and Tiwari (2016) noted that renewable energy policy could pose negative or no significant effect on economic development hence, posing negative or no effects on sustainable development in Nigeria.

**Conclusion**

The article examined renewable energy policy and sustainable development in Nigeria using a systematic scoping review. In conclusion, it was found that, not only that renewable energy policy could pose both moderating and direct effects on the propensity to achieve sustainable development in Nigeria. As moderating effect, it could serve as a moderating factor in the relationship between renewable energy system, in terms of demands and supply and sustainable development. With regards to the direct impact, it could serve as direct impact on the achievement of sustainable development in Nigeria. However, several challenges such as regulatory bottlenecks, effective use of policy to transform the renewable energy system, lack of policy that could support the effective use of technology for renewable energy system, and othersare affecting the effective use of renewable energy policy that tend to affect the potential for the Nigeria renewable system to create significant impetus on the sustainable development of the nation.

**Recommendations**

The following recommendations were provided from the results of this study:

1. Government and policy makers should integrate renewable energy into overall energy policy, thereby making it a core component of the overall energy strategy, rather than a separate entity,
2. Government and policy makers should establish specific, measurable, achievable, relevant, and time-bound (SMART) targets for renewable energy deployment for sustainable development,
3. There should be need to foster international cooperation by collaborating with other countries to share best practices, technologies, and experiences in renewable energy policy that could pose positive resonance effect on the attainment of sustainable development,
4. There should be need for government and policy makers to omplement effective policy and regulatory frameworks by establishing clear, consistent, and predictable policies and regulations that could support the development and deployment of renewable energy technologies towards effective attainment of sustainable development in Nigeria,
5. Government of Nigeria should provide incentives for renewable energy development: such as tax credits, grants, or feed-in tariffs, to encourage the development and deployment of renewable energy technologies,
6. Government and policy makers should also provide policy that would address environmental issues such that would ensure that renewable energy development and deployment do not harm environmental resources, such as water, land, and biodiversity

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