http://journals.uonbi.ac.ke/index.php/adfj
ISSN 2522-3186

African Development Finance Journal http://journals.uonbi.ac.ke/index.php/adfj
September Vol 8 No.8, 2025 PP 208-236 ISSN 2522-3186

Tax Incentives and Renewable Energy Development in Nigeria: Evaluating Effectiveness and Policy Gaps

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Abstract

Nigeria possesses vast renewable energy potential but continues to face severe electricity deficits, with over 85 million citizens lacking access to grid power. To address this challenge and accelerate clean energy adoption, the Nigerian government has introduced various fiscal incentives, including tax holidays, VAT exemptions, and import duty waivers, aimed at attracting renewable energy investors. This paper critically evaluates the effectiveness of these incentives in driving investment, enhancing energy access, and stimulating local industry development. Drawing on official reports, stakeholder consultations, and international benchmarks from countries such as India, Kenya, Brazil, South Africa, and Morocco, the study finds that while fiscal tools offer promise, their impact is limited by weak institutional coordination, inadequate monitoring frameworks, and low awareness among developers. Key policy gaps include short incentive durations, insufficient support for off-grid systems, and minimal local content integration. The paper concludes with actionable recommendations focused on reforming Nigeria's incentive structure, including establishing a centralized coordination agency, expanding the scope of incentives, and strengthening local manufacturing capacity to better align fiscal policy with the country's energy and climate goals.

Keywords: *Renewable energy, Tax incentives, Fiscal policy, Energy access, Investment*

1. Introduction

Nigeria, Africa's most populous nation with over 200 million people, faces a critical energy dilemma marked by inadequate electricity supply, heavy dependence on fossil fuels, and rapidly growing demand driven by urbanization and population growth (Ajayi, 2025; IEA, 2022). Despite its abundant renewable energy resources, including average solar radiation of 5.5 kWh/m²/day, over 3,000 MW of small hydropower potential, and substantial biomass availability, the country's electricity generation remains heavily reliant on natural gas, which accounts for more than 80% of grid supply (Onuh et al., 2024; Adeshina et al., 2024; IRENA, 2022). As a result, an estimated 85 million Nigerians, approximately 40% of the population, lack access to grid electricity, placing Nigeria among the countries with the highest global energy access deficits (World Bank, 2023).

Renewable energy development is therefore not just an environmental imperative but also a socio-economic necessity. It offers a viable pathway to enhancing energy security, reducing greenhouse

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gas emissions, and meeting Nigeria's commitments under the Paris Agreement and the United Nations Sustainable Development Goals (SDGs), particularly SDG 7 (affordable and clean energy) and SDG 13 (climate action) (UNDP, 2021). To address these challenges and encourage private sector participation, the Nigerian government has introduced a range of policy and fiscal instruments designed to improve the investment climate in the renewable energy sector.

Among these instruments are tax incentives such as the Pioneer Status Incentive (PSI), which provides corporate income tax holidays for up to five years; import duty exemptions for renewable energy equipment; VAT waivers on solar components; and accelerated capital allowances under the Companies Income Tax Act (NIPC, 2022; FIRS, 2021). Complementary initiatives, including the Green Bond Programme and the Renewable Energy Master Plan, have also been launched to foster a more supportive environment for sustainable energy investments.

However, despite these fiscal incentives, renewable energy deployment in Nigeria remains limited. Empirical evidence on the effectiveness of these incentives is scarce, while the policy landscape is marked by weak institutional coordination, inconsistent implementation, bureaucratic barriers, and limited awareness among local developers. These challenges undermine the intended cost-reduction benefits of incentives and discourage long-term private sector investment. Nigeria's experience contrasts with countries such as Kenya, India, and South Africa, where well-coordinated policy frameworks and targeted fiscal incentives have significantly boosted renewable energy adoption (IRENA, 2021; World Bank, 2022).

Research Problem

Nigeria possesses vast renewable energy potential, including average solar radiation of 5.5 kWh/m²/day, over 3,000 MW of small hydropower, and substantial biomass resources (IRENA, 2022; John et al., 2025). Yet, an estimated 85 million people remain without grid electricity (World Bank, 2023). To close this gap, the government has introduced fiscal incentives such as the Pioneer Status Incentive (PSI), VAT exemptions on solar components, import duty waivers, and Accelerated Capital Allowances (NIPC, 2025; FIRS, 2021). Despite these measures, renewable energy deployment remains modest, constrained by fragmented policy implementation, weak institutional coordination, and bureaucratic inefficiencies.

Existing studies on renewable energy incentives in Nigeria often focus on the availability of fiscal tools without fully examining how institutional alignment, policy coherence, and awareness among developers shape their effectiveness (Rogge & Reichardt, 2016; Bhattacharyya, 2011). Much of the evidence on successful incentive frameworks comes from countries with stronger governance and infrastructure, such as Kenya, India, and South Africa (IRENA, 2021; World Bank, 2022), limiting its applicability to Nigeria's more complex and fragmented policy environment (Onuh et al., 2024; Okhirebhu et al., 2025). Furthermore, while theories of public goods, positive externalities, and investment incentives explain the rationale for fiscal measures (Stern, 2007; Jaffe et al., 2005; Zee et al., 2002), these frameworks often assume predictable regulatory environments and efficient administration — conditions that are not consistently present in Nigeria.

Empirical evidence on the actual impact of Nigeria's tax incentives remains scarce. Few systematic, data-driven studies have assessed their uptake, cost-effectiveness, or influence on installed capacity, private investment flows, and energy access (World Bank, 2023; REAN, 2024). The absence of robust monitoring and evaluation frameworks further obscures their performance. This study addresses these shortcomings by critically evaluating the effectiveness of Nigeria's renewable energy tax incentives, identifying institutional and regulatory barriers, and drawing on international best practices to recommend reforms for accelerating the country's clean energy transition.

Research Objectives

This paper specifically aims to:

1. Critically evaluate the effectiveness of Nigeria's tax incentives for renewable energy development.
2. Assess the extent to which current fiscal policies attract private sector investment.
3. Identify regulatory and institutional barriers limiting the impact of these incentives.
4. Draw on international best practices to propose actionable policy reforms.

The overarching goal is to support the creation of a more coherent, transparent, and effective fiscal framework capable of accelerating Nigeria's transition to a sustainable energy future.

Overview of Renewable Energy in Nigeria

Energy Profile

Nigeria's energy landscape is defined by acute access deficits, unreliable supply, and overdependence on fossil fuels. Despite being Africa's largest economy, nearly 85 million Nigerians, approximately 40 percent of the population, lack access to grid electricity (Obada et al., 2024). Even where grid connectivity exists, power supply is frequently erratic, prompting widespread reliance on diesel and petrol generators. This imposes a significant economic burden on households and businesses while increasing greenhouse gas emissions.

The national grid's total installed generation capacity hovers between 12 and 13 gigawatts, but actual generation often fluctuates between 3 megawatts and 5 megawatts (Informa Markets, 2024). This discrepancy is attributed to infrastructural inefficiencies, transmission constraints, and issues with gas supply. The persistent gap between demand and supply highlights the urgent need to diversify Nigeria's energy mix, with a particular focus on renewable energy sources.

Renewable Energy Potential

Nigeria is richly endowed with renewable energy resources, many of which remain largely untapped. Solar energy is especially promising, with the country receiving an average solar radiation of 5.5 kilowatt-hours per square meter per day and approximately 2,600 hours of sunshine annually. This makes it highly suitable for widespread solar photovoltaic deployment across all regions (John, Onwuagbu, and Chigozie, 2025).

Hydropower also offers considerable potential. Large-scale hydropower capacity is estimated at about 14 gigawatts, while small-scale hydro resources are projected at 3 to 3.5 gigawatts. As of 2023, however, only around 1.9 gigawatts of large-scale hydro and 60 megawatts of small hydro are operational (Informa Markets, 2023), indicating significant room for expansion.

Biomass plays a central role in Nigeria's primary energy mix, accounting for approximately 43 percent of total energy use. Agricultural residues and forest waste present substantial opportunities for off-grid electricity generation and the production of clean cooking fuel (Informa Markets, 2023).

Wind and geothermal energy remain relatively unexplored. However, certain regions, particularly in the northern states, have demonstrated wind speeds conducive to turbine deployment. If effectively harnessed, these renewable sources could help deliver decentralized and sustainable energy solutions to both urban and rural populations.

Key Institutional Actors

Several government institutions and stakeholders influence the development and implementation of renewable energy in Nigeria. The Federal Ministry of Power is responsible for overall national energy policy, including strategies to integrate renewable sources into the country's energy mix (Remteng, Suleiman, Asoegwu, and Emenyonu, 2021).

The Rural Electrification Agency (REA) plays a pivotal role in executing off-grid electrification programs. Its flagship initiatives, such as the Nigeria Electrification Project and the Solar Power Naija Initiative, are designed to bring solar power to underserved and remote communities (REA, 2025).

The Nigerian Electricity Regulatory Commission (NERC) regulates the electricity sector by setting tariffs, licensing renewable energy providers, and fostering transparency and competition in the market (Wikipedia contributors, 2025).

The private sector and development partners are also increasingly instrumental in advancing renewable energy. Independent power producers, solar entrepreneurs, donor agencies, and investors contribute to financing and deploying innovative energy solutions. Notable collaborations include partnerships with the World Bank, the African Development Bank, and GIZ.

Despite the presence of these institutions and a supportive framework, progress has been sluggish. Challenges such as limited financing, weak enforcement of policies, and inadequate grid infrastructure continue to impede large-scale renewable energy deployment.

Current Status and Barriers

Despite its vast potential and an evolving policy environment, Nigeria's renewable energy sector has made limited progress. Between 2020 and 2022, solar power accounted for less than 1 percent of electricity generation, and renewables made up only about 15 percent of total energy consumed (Adeshina et al., 2024).

A number of systemic barriers continue to hinder growth. Policy implementation is often fragmented, and incentive schemes suffer from weak monitoring and enforcement. Grid infrastructure remains outdated, and financial risk deters both domestic and international investment in renewable energy projects. Overcoming these challenges is essential for Nigeria to scale renewable energy solutions and meet its sustainable development targets.

Literature Review

The literature on renewable energy development underscores the importance of well-designed fiscal incentives in overcoming investment barriers, reducing technology costs, and promoting energy transitions. Tax incentives such as corporate income tax holidays, import duty waivers, and VAT exemptions have been implemented globally to support the deployment of renewable energy systems. However, their effectiveness is shaped by policy coherence, institutional coordination, and the broader regulatory environment.

This section reviews key theoretical perspectives on the role of fiscal incentives in renewable energy development, highlights international and Nigerian empirical studies, and presents the conceptual framework that guides this study.

Theoretical Literature

Economic theory suggests that renewable energy technologies face market failures stemming from high upfront costs, positive externalities such as reduced emissions, and information asymmetries (Stern, 2007). Fiscal incentives are employed as policy tools to correct these failures by lowering investment costs, reducing perceived risks, and encouraging market entry (IEA, 2017; Pan et al., 2024).

From the perspective of public goods and externalities theory, renewable energy generates environmental and social benefits that are not fully captured by market prices. These benefits, such as cleaner air and reduced greenhouse gas emissions, represent classic positive externalities. To address this market undervaluation, governments intervene through subsidies, tax incentives, and other fiscal tools to internalize these broader societal gains (Jaffe et al., 2005; Stern, 2007).

Investment incentive theory posits that tax incentives enhance the after-tax return on investment, particularly in capital-intensive sectors like renewable energy. Instruments such as accelerated depreciation and tax holidays are designed to mitigate high upfront costs and improve the financial viability of clean energy projects (Zee, Stotsky, & Ley, 2002; World Bank, 2018). These incentives help address investment barriers by improving project bankability and encouraging private sector participation (IEA, 2017).

Policy coherence theory emphasizes that fiscal incentives must align with broader policy goals and institutional frameworks. When policies are fragmented, contradictory, or poorly enforced, investor confidence declines, reducing the overall impact of incentive programs (Rogge and Reichardt, 2016; Nilsson et al., 2018). Effective fiscal incentives require coordination across government agencies, consistent regulatory frameworks, and integration with national energy and climate strategies (Bhattacharyya, 2011).

Taken together, these theoretical frameworks reinforce the view that tax incentives alone are insufficient. Their success is contingent on the presence of a stable, coordinated, and transparent policy environment that addresses market failures, aligns institutional objectives, and builds investor confidence.

Empirical Literature

Globally, several countries have successfully leveraged tax incentives to accelerate renewable energy development. In Kenya, zero-rated VAT and import duty exemptions on renewable energy equipment, combined with feed-in tariffs, have helped achieve a renewable electricity generation share exceeding 90 percent (IRENA, 2021; Kiplagat et al., 2011). In India, measures such as accelerated depreciation, Goods and Services Tax (GST) concessions, and the establishment of

clear national targets have supported rapid expansion of solar and wind energy capacities (IEA, 2021).

South Africa's policy framework, particularly the Section 12B tax allowances and long-term Power Purchase Agreements under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), has attracted over $15 billion in private investment (Eberhard and Naude, 2017; Eberhard et al., 2018; World Bank, 2022). In Brazil, state-level VAT exemptions and net metering regulations have contributed to the development of over 20 gigawatts of distributed solar capacity (IRENA, 2022). Similarly, Morocco has employed VAT and customs duty waivers alongside the Green Investment Fund to achieve a renewable energy share exceeding 40 percent in power generation (IRENA, 2021). These cases demonstrate that tax incentives are most effective when combined with stable regulatory environments and well-coordinated institutional support.

In contrast, the Nigerian context presents a more mixed picture. While policies such as the Pioneer Status Incentive, import duty waivers, and VAT exemptions are in place, the renewable energy sector remains significantly underdeveloped (NIPC, 2025). Available analyses and policy reports highlight persistent challenges, including bureaucratic delays, limited awareness among project developers, fragmented implementation of incentive schemes, and inadequate monitoring and evaluation mechanisms.

Stakeholder feedback further highlights inconsistencies in customs processing, complex eligibility requirements, and short incentive durations that are often misaligned with the long timelines required for renewable energy project development (World Bank, 2023; IRENA, 2022). As a result, the sector remains heavily reliant on donor funding and public-private partnership models, with minimal participation from private commercial finance. These findings emphasize the urgent need for reforms that enhance the effectiveness, predictability, and transparency of Nigeria's fiscal incentives for renewable energy.

Conceptual Framework

The conceptual framework for this study illustrates the relationship between fiscal incentives and renewable energy development outcomes, emphasizing the mediating role of institutional, policy, and informational factors. This approach reflects the view in sustainability transitions literature that policy instruments rarely operate in isolation but instead function within broader policy and institutional mixes (Rogge & Reichardt, 2016; Nilsson et al., 2018).

Tax incentives, such as tax holidays, VAT exemptions, import duty waivers, and accelerated capital allowances, are treated as the core independent variable. These fiscal tools are designed to address market failures by lowering investment costs and improving project bankability (Zee et al., 2002; World Bank, 2018). The expected impact is to influence renewable energy outcomes, including increased investment flows, higher installed capacity, and improved energy access (IRENA, 2021; IEA, 2017).

However, the effectiveness of these incentives is not automatic. A set of mediating variables—namely institutional coordination, policy coherence, awareness of incentives, and the presence of monitoring and evaluation frameworks, plays a critical role in determining whether tax incentives lead to the desired development outcomes (Bhattacharyya, 2011). Fragmented governance, unclear eligibility rules, and limited enforcement capacity can all weaken the effectiveness of otherwise well-designed incentives (World Bank, 2018; Jaffe et al., 2005).

To conceptualize this relationship, imagine a simple three-layer structure. The first layer contains tax incentives as the primary input. This flows into a second layer composed of mediating factors, including how well government agencies coordinate efforts, whether policies are aligned and clearly communicated, the extent to which project developers are aware of and able to access the incentives, and whether progress is systematically tracked and reported. The third layer reflects renewable energy development outcomes, such as increased private investment, expanded generation capacity and broader access to electricity.

This conceptual model supports the idea that the relationship between fiscal incentives and development outcomes is indirect. Fiscal incentives alone do not guarantee increased investment

or expanded capacity. It is the strength of the mediating environment that determines whether such incentives yield meaningful results. When institutional alignment, policy clarity, and transparency are strong, fiscal incentives can lower the cost of capital, mitigate risk, and accelerate the deployment of renewable energy in Nigeria (IRENA, 2021; World Bank, 2018).

Conceptual Diagram

Figure I below visually illustrates the conceptual framework of the study, presenting the hypothesized relationship between tax incentives and renewable energy development outcomes. The framework is structured in a horizontal flow, representing the logical progression from input to impact, while highlighting the role of mediating institutional and policy factors.

On the left, fiscal incentives (e.g., tax holidays, VAT exemptions, import duty waivers, and capital allowances) serve as the core independent variables intended to reduce investment risk and cost. At the center, the framework identifies mediating variables, such as institutional coordination, policy clarity, incentive awareness, and monitoring capacity. These factors determine whether fiscal incentives are effectively implemented and accessed by stakeholders. On the right, the framework presents the expected outcomes, including increased private investment in renewable energy, greater installed capacity, and enhanced electricity access.

This structure emphasizes that tax incentives alone are not sufficient; their success depends on the enabling environment that supports their implementation. Where institutions are well-coordinated, policies are coherent, and incentive mechanisms are transparent and understood, fiscal incentives are more likely to yield tangible results in advancing renewable energy deployment.

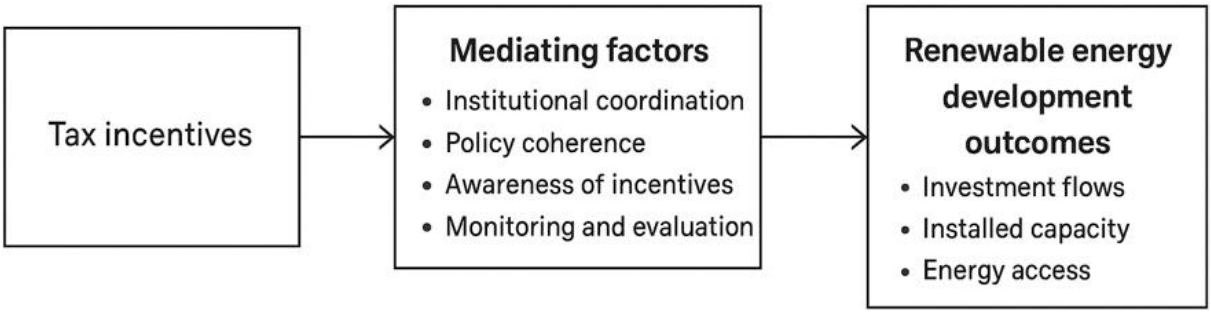

Figure 1: Conceptual Framework Linking Fiscal Incentives to Renewable Energy Development Outcomes

Summary

This literature review has explored both theoretical and empirical perspectives on the role of fiscal incentives in renewable energy development. The conceptual framework developed here emphasizes that introducing tax incentives, while necessary, is not sufficient on its own. Their effectiveness depends on the strength of supporting institutions, policy coherence, developer awareness, and robust monitoring systems. This framework provides a basis for evaluating Nigeria's current fiscal strategies and identifying the reforms needed to enhance their impact on sustainable energy development.

Research Methodology

This study adopts a qualitative, descriptive research design to examine the effectiveness of tax incentives in promoting renewable energy development in Nigeria. The qualitative approach is suitable for exploring complex policy instruments, institutional dynamics, and the practical challenges that influence implementation outcomes. A descriptive design allows for a systematic analysis of existing fiscal frameworks and their real-world implications, with the goal of identifying strengths, gaps, and opportunities for reform.

The focus of the study is Nigeria, a country with abundant renewable energy potential yet persistently low electrification rates and high dependence on fossil fuels. Over the past decade, the Nigerian government has introduced various fiscal incentives aimed at stimulating investment in renewable energy technologies. These include corporate tax holidays, import duty waivers, value-added tax (VAT) exemptions, and the issuance of sovereign green bonds. However, the actual impact of these incentives remains limited, due to a combination of policy fragmentation, weak institutional coordination, and administrative bottlenecks. The Nigerian case offers a valuable context for understanding how fiscal policy intersects with clean energy goals in developing economies.

The research draws primarily on secondary data sourced from government policy documents, regulatory guidelines, and legislative frameworks. Key materials include the Pioneer Status Incentive Guidelines published by the Nigerian Investment Promotion Commission (NIPC), directives from the Federal Inland Revenue Service (FIRS), the Finance Acts of recent years, and

tariff schedules provided by the Nigeria Customs Service. Supplementary data were obtained from reports by international organizations such as the World Bank, International Energy Agency (IEA), and International Renewable Energy Agency (IRENA), as well as from academic literature and industry submissions. Reports from sectoral associations like the Renewable Energy Association of Nigeria (REAN) and the West African Renewable Energy Association (WAREA) were also reviewed to understand practical implementation experiences.

Document analysis was the primary method of data collection. This involved a detailed examination of policy texts and fiscal guidelines to identify relevant provisions, eligibility requirements, and administrative processes. Additional insights were drawn from stakeholder commentaries, media publications, and donor-funded program evaluations, which provided real-world perspectives on how incentives are applied and perceived by market actors. These materials were analyzed for both content and consistency, with a particular focus on identifying patterns of institutional coordination, regulatory clarity, and investor confidence.

The analysis was guided by a conceptual framework that posits tax incentives as an independent variable influencing renewable energy development, with mediating factors such as institutional coherence, policy awareness, and monitoring mechanisms shaping the strength of that relationship. The study assessed each incentive type in terms of its legal design, implementation status, and perceived effectiveness in reducing investment barriers. Comparative insights from countries with well-established renewable energy frameworks, including Kenya, India, South Africa, Brazil, and Morocco, were integrated to contextualize Nigeria's performance and to draw lessons for policy reform. Through this framework, the study seeks to illuminate the underlying factors that determine the success or failure of fiscal incentives in driving renewable energy investment.

It is important to acknowledge certain limitations in the study. The reliance on secondary data means that the findings are based on documented evidence and may not fully capture on-the-ground implementation nuances. There is also a lack of comprehensive and up-to-date official data on the actual uptake and impact of specific tax incentives. Moreover, primary data collection, such as interviews or field surveys, was not conducted, which limits the direct inclusion of stakeholder perspectives. Despite these limitations, the study offers a robust and policy-relevant analysis

grounded in a wide range of credible sources, aiming to support evidence-based decision-making for Nigeria's energy transition.

Results and Discussion

Tax Incentives Available for Renewable Energy in Nigeria

Nigeria has introduced a range of fiscal and policy instruments aimed at stimulating private sector participation in the renewable energy sector. These measures are intended to lower investment costs, improve project bankability, and enhance the competitiveness of renewable technologies in comparison to conventional fossil fuels.

One of the most prominent incentives is the Pioneer Status Incentive (PSI), administered by the Nigerian Investment Promotion Commission (NIPC). This policy offers qualifying companies a three-year Corporate Income Tax holiday, which may be extended for an additional two years. Eligible beneficiaries typically include renewable energy firms, such as solar battery manufacturers, that are designated as "pioneer" industries under the official NIPC guidelines (Akintaro, 2024; Etomi, 2017). The central objective of this incentive is to reduce early-stage project costs and improve returns on investment.

In addition, Nigeria provides Value Added Tax (VAT) exemptions for renewable energy components. Specifically, the importation of solar panels, batteries, and related equipment is exempt from the standard 7.5 percent VAT. This exemption is grounded in provisions of the Finance Act and has been affirmed through directives issued by the Federal Inland Revenue Service (FIRS) (PricewaterhouseCoopers Nigeria, 2020). By eliminating VAT on key equipment, this policy significantly reduces the upfront cost of solar energy systems, particularly for off-grid and mini-grid deployments. The result is improved financial accessibility for both commercial users and underserved rural populations (WAREA, 2023).

Complementing the VAT exemption is the waiver of import duties on renewable energy equipment. The Nigeria Customs Service (NCS) recognizes solar panels and associated components—including inverters, charge controllers, and other balance-of-system parts—under Harmonized System (HS) Codes 8541.42 and 8541.43. These items are eligible for both zero

percent import duty and VAT-free status in accordance with the ECOWAS Common External Tariff framework (REAN, 2024). In May 2025, the Comptroller-General reaffirmed that such components will continue to benefit from duty-free treatment under the revised tariff regime (Bodunde, 2025).

Despite these provisions, however, the actual implementation of import duty waivers remains inconsistent. Misclassification of renewable energy equipment is a recurring challenge, especially when components such as solar panels with diodes or integrated systems are mistakenly reclassified under HS Code 8501, which attracts import duties ranging from 5 to 10 percent along with applicable VAT charges (Ebii, 2019). A notable instance in 2018 raised industry-wide concerns about reclassification, and although subsequent government clarification reinstated exemptions, discrepancies continue to emerge. Moreover, customs checkpoints, including those operated by police and military personnel, often impose informal levies, further inflating import costs. These inconsistencies erode the intended financial benefits of the duty waiver policy and may deter potential investors, particularly in the off-grid solar sub-sector.

Nigeria has also made significant strides in mobilizing green finance through its Green Bond Initiative. Introduced by the Debt Management Office (DMO) in collaboration with FMDQ and the Federal Ministry of Environment, the initiative enables the issuance of sovereign green bonds to support environmentally sustainable infrastructure projects (FSD Africa, 2025). The country issued its first sovereign green bond, valued at ₦10.69 billion, in 2017, followed by a second issuance of ₦15 billion in 2019 (Heinrich Böll Stiftung Nigeria, 2022). In 2025, the Federal Government is scheduled to issue two additional tranches of sovereign green bonds. The first, estimated at ₦50 billion, is planned for May, while the second tranche, valued at ₦250 billion, is set for release in October. These bonds aim to finance initiatives in clean energy, sustainable agriculture, afforestation, and climate-resilient infrastructure, in line with Nigeria's revised Nationally Determined Contributions under the Paris Agreement (BusinessDay, 2025).

Finally, the Accelerated Capital Allowance (ACA) scheme provides another avenue for tax relief. Under the Companies Income Tax Act (CITA), companies that invest in renewable energy equipment may deduct up to 95 percent of qualifying capital expenditure in the first year. This

incentive is designed to enhance project cash flow and improve the internal rate of return by significantly reducing taxable income during the early stages of project development (Akintaro, 2024).

Collectively, these incentives reflect Nigeria's commitment to fostering a more conducive environment for renewable energy investment. However, the effectiveness of these policies depends heavily on consistent implementation, policy clarity, and the removal of bureaucratic and operational barriers that undermine investor confidence.

Evaluating the Effectiveness of Tax Incentives

This section evaluates the effectiveness of Nigeria's fiscal incentives for renewable energy, focusing on trends in private investment, stakeholder feedback from the business environment, and the degree of institutional coordination and policy coherence.

In terms of investment trends, Nigeria has witnessed a modest but gradually increasing flow of private capital into its renewable energy sector, particularly in solar home systems and mini-grid solutions (Isah et al., 2023). The mini-grid segment exemplifies this growth, having expanded from approximately 11 pilot sites in 2015 to over 113 operational mini-grids by 2023. These systems now deliver a combined capacity of 12 megawatts and serve more than 171,000 connections. This growth has been largely facilitated by public–private partnership (PPP) models, which blend debt financing, equity investment, and grants (Stantec et al., 2024). A recent $200 million agreement between the Rural Electrification Agency (REA) and the renewable energy company WeLight to deploy 400 additional mini-grids further illustrates growing investor confidence and interest in the sector (Anyaogu, 2025). However, despite these advances, most funding remains donor-dependent or channeled through structured PPP arrangements. Engagement from purely commercial financial institutions continues to be limited, suggesting that fiscal incentives alone have not yet created a self-sustaining market for private renewable energy finance.

Feedback from stakeholders within the business environment highlights several structural challenges. Many developers report experiencing prolonged bureaucratic delays in accessing available tax incentives, largely due to unclear eligibility criteria and inefficient administrative

procedures (Nkalo, 2025). Additionally, there is a notable lack of awareness among domestic project developers regarding the range of incentives offered. This information gap is compounded by weak communication and outreach from regulatory bodies tasked with implementing these policies (Kemp, 2025). Furthermore, inconsistency in enforcement across government agencies, particularly at the Federal Inland Revenue Service (FIRS) and Nigeria Customs Service (NCS), continues to undermine the intended benefits of these fiscal incentives, thereby reducing their uptake and perceived reliability.

At the policy level, issues of coherence and institutional coordination significantly affect the overall effectiveness of the tax incentive regime. Multiple agencies, including the Nigerian Investment Promotion Commission (NIPC), FIRS, NCS, REA, and the Nigerian Electricity Regulatory Commission (NERC), share overlapping responsibilities in administering and regulating renewable energy incentives. This multiplicity of mandates often results in policy fragmentation, contradictory directives, and inefficient execution. Weak enforcement mechanisms remain a major concern, with recurring challenges such as customs misclassification of equipment, excessive red tape, and inconsistent approvals across jurisdictions (Kemp, 2025). Studies have confirmed that the fragmented implementation of key frameworks, such as the Renewable Energy Master Plan (REMP) and the National Renewable Energy and Energy Efficiency Policy (NREEEP), continues to impede the ability of fiscal incentives to drive significant private investment (Okhirebhu et al., 2025).

In summary, while renewable energy investments in Nigeria have shown a positive trajectory, the impact of tax incentives has been constrained by donor-dependence, bureaucratic inefficiencies, and weak institutional alignment. To unlock the full potential of these fiscal tools, there is an urgent need to strengthen inter-agency coordination, simplify administrative procedures, clarify eligibility and approval processes, and enhance awareness among private sector stakeholders.

Policy Gaps and Challenges

Despite the existence of several fiscal incentives aimed at stimulating growth in Nigeria's renewable energy sector, significant structural and policy-related challenges continue to

undermine their effectiveness. These gaps reflect a broader systemic weakness that must be addressed to fully unlock the sector's potential.

One of the most pressing deficiencies is the lack of standardized monitoring and evaluation (M&E) frameworks to assess the uptake, implementation, and impact of fiscal programs such as the Pioneer Status Incentive (PSI), import duty waivers, and VAT exemptions. In the absence of robust M&E mechanisms, it becomes difficult to evaluate the effectiveness of these incentives, ensure accountability, or guide evidence-based reforms. Reports such as the World Bank's Country Partnership Framework (2020) have underscored persistent inefficiencies in public expenditure and weak institutional capacity in tracking fiscal incentives. Similarly, the International Monetary Fund's Fiscal Transparency Evaluation (2021) noted serious challenges related to fiscal risk management and budget transparency in Nigeria. These evaluations point to a broader institutional issue: the various fiscal authorities and implementing agencies lack the tools and coordination required to monitor outcomes effectively, resulting in fragmented data and poor reporting (World Bank, 2025).

Another critical gap lies in the limited development of local content within Nigeria's renewable energy value chain. Although tax incentives have supported renewable energy uptake, much of the equipment—particularly solar panels, inverters, and batteries—is still sourced from abroad. This reliance on imports restricts domestic value addition and reduces opportunities for local job creation and industrial growth. A recent market perception study revealed that local manufacturers currently account for less than 40 percent of renewable energy component supply, indicating an urgent need for more robust local content policies (REAN, 2024). The National Energy Master Plan (2022) confirms that Nigeria's domestic manufacturing capacity for key technologies such as solar photovoltaic systems, small hydropower components, and biomass equipment remains weak. Most essential parts continue to be imported, limiting the ability of local firms to scale and compete. The plan explicitly calls for the establishment of strategic manufacturing hubs to produce renewable energy equipment and spare parts, with the aim of building a more resilient and self-sufficient deployment ecosystem (Energy Commission of Nigeria, 2022).

The limited duration and scope of current tax incentives also pose significant constraints. While the PSI offers up to a five-year corporate tax holiday, this timeframe is often inadequate for renewable energy projects, many of which, such as mini-grids and hybrid systems, require long-term capital investments and typically have payback periods of seven to ten years. A recent review of Nigeria's fiscal incentives revealed that although renewable energy firms, particularly in the solar space, are nominally eligible for PSI benefits, the restrictive criteria and short duration of support render the incentive less effective for off-grid and hybrid energy business models (NIPC, 2025). Moreover, the PSI framework and associated policies, including the Renewable Energy Master Plan, do not explicitly include smaller-scale decentralized energy projects. As a result, many mini-grid and rural electrification developers remain outside the scope of these incentives, unable to benefit from critical fiscal relief.

This misalignment between project lifecycles and incentive timelines limits the financial viability of many early-stage ventures. Without more tailored and sustained support mechanisms, particularly for emerging developers and rural energy providers, Nigeria risks missing out on the transformational potential of distributed renewable energy solutions. Structural reforms that extend the duration of fiscal incentives, simplify eligibility requirements, and integrate off-grid energy models into official incentive frameworks are urgently needed to bridge this gap.

Comparative Insights: Lessons from Other Countries

Several countries have successfully implemented fiscal incentives, regulatory frameworks, and institutional reforms to drive renewable energy development. Their experiences offer valuable lessons for Nigeria as it seeks to enhance the effectiveness of its own policy tools and attract sustained private sector investment.

Kenya provides a compelling example of how targeted fiscal incentives and clear regulatory frameworks can catalyze renewable energy growth. The country's Feed-in Tariff (FiT) Policy, combined with zero-rated Value Added Tax (VAT) and import duty exemptions on renewable energy equipment, has significantly reduced investment risks and operational costs. These measures have facilitated the rapid deployment of mini-grids, solar farms, and geothermal projects, contributing to a national electricity mix in which over 90 percent of generation now comes from

renewable sources. Kenya's success underscores the importance of maintaining a consistent and transparent fiscal policy environment, while also prioritizing community-based deployment models to ensure inclusivity and build investor confidence (Ministry of Energy, Kenya, 2021).
India's approach illustrates the value of aligning fiscal incentives with long-term national energy goals. The government has introduced a suite of measures to attract private investment, including accelerated depreciation of up to 40 percent on renewable energy assets, concessional Goods and Services Tax (GST) rates, and direct subsidies for rooftop solar installations. These fiscal tools are embedded within a broader strategy aimed at achieving 500 GW of installed renewable capacity by 2030. This integrated policy framework has helped India become the world's fourth-largest holder of renewable energy capacity. The Indian experience highlights the effectiveness of pairing tax incentives with ambitious, clearly articulated energy targets to scale investment and infrastructure (MNRE, 2022).

South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) offers another instructive case. The REIPPPP employs a competitive bidding process for renewable energy projects, backed by government-guaranteed long-term Power Purchase Agreements (PPAs). These are supported by fiscal incentives, such as the Section 12B tax allowance, which enables accelerated depreciation of renewable energy assets. This combination of financial de-risking and fiscal support has created a stable investment environment, attracting over $15 billion in private capital and delivering more than 6,000 MW of new renewable energy capacity. The key lesson from South Africa is the critical role of structured procurement frameworks and long-term policy certainty in mobilizing private sector participation at scale (IPP Office, 2021; Eberhard & Naudé, 2017).

Brazil has adopted a decentralized strategy to promote renewable energy, leveraging both fiscal incentives and consumer-level engagement. The country provides ICMS (state-level VAT) exemptions for solar equipment and allows accelerated depreciation under national tax codes. Importantly, Brazil's progressive net metering regulations have enabled consumers to offset electricity costs by feeding excess solar energy back into the grid. These incentives have resulted in the installation of over 20 GW of distributed solar photovoltaic (PV) capacity by 2023. Brazil's

model demonstrates how combining fiscal relief with consumer-friendly regulations can drive adoption of renewable technologies at the household and community levels (GIZ, 2020).

Morocco represents a leading African example of integrating fiscal policy with strategic investment initiatives. The country offers customs duty and VAT exemptions for renewable energy imports and supports early-stage project development through the Green Investment Fund. Major undertakings such as the Ouarzazate Solar Complex highlight the effectiveness of Morocco's public–private partnership (PPP) approach. These strategies have enabled renewables to account for more than 40 percent of electricity generation, with the country aiming to reach a 52 percent renewable share by 2030. Morocco's experience reinforces the value of coordinated public finance tools, transparent procurement systems, and long-term fiscal support in accelerating renewable energy deployment (IEA, 2023).

Table 1: Table: Summary of Comparative Insights

Country	Key Instruments	Outcomes	Key Lessons
Kenya	Feed-in tariffs, tax exemptions	>90% renewable electricity	Clarity and zero-rated equipment taxation build investor trust
India	GST relief, accelerated depreciation, rooftop subsidies	4th globally in installed RE	Combine fiscal tools with ambitious national targets
South Africa	REIPPPP, Section 12B tax benefits, long-term PPAs	$15B+ private investment	Transparent, bankable PPP models are highly effective
Brazil	Net metering, VAT exemptions, asset depreciation	20+ GW distributed solar PV	De-risking small-scale systems with local tax breaks works
Morocco	VAT/customs waivers, PPPs, green investment funds	>40% RE share; 2030 target: 52%	State-backed PPPs and policy coherence drive rapid scale-up

Source: Authors compilation, 2025

Collectively, these case studies illustrate that tax incentives are most effective when paired with coherent regulatory frameworks, long-term energy targets, and mechanisms that reduce financial risk for investors. Nigeria can benefit from adopting similarly integrated approaches—linking fiscal policy with clear implementation strategies, institutional accountability, and localized value creation—to achieve a sustainable energy transition.

Conclusion

Nigeria's energy transition is at a turning point. Although we have a wealth of renewable energy resources and a growing toolkit of policies, including tax incentives, we have made only modest progress in scaling up sustainable energy. According to the analysis, fiscal tools like import duty waivers, VAT exemptions, and the Pioneer Status Incentive have a lot of potential, but their practical application is limited by institutional flaws, regulatory uncertainty, low awareness, and implementation inefficiencies. The potential of these policies to draw significant and sustained private sector investment is further undermined by their limited support for local manufacturing, short incentive durations, and lack of a unified monitoring and evaluation framework. Fiscal incentives can significantly speed up the adoption of clean energy when they are incorporated into an open, well-coordinated, and forward-thinking policy framework. Their effectiveness is demonstrated by lessons learnt from nations like Brazil, Morocco, Kenya, India, and South Africa. Nigeria must thus overcome fragmented approaches realize the full potential of renewable energy and fulfill its national and international climate commitments. It will be crucial to improve stakeholder engagement, institutional coordination, and policy coherence. Tax incentives can become catalysts for inclusive, environmentally friendly, and resilient energy development nationwide with the correct reforms, replacing their current status as policy tools.

Policy Recommendations

To enhance the effectiveness and impact of tax incentives on renewable energy development in Nigeria, the following policy actions are recommended. These are drawn from empirical evidence and comparative insights from countries such as India, Kenya, South Africa, Brazil, and Morocco:

a) Establish a Centralized Renewable Energy Incentive Agency: To streamline the administration of fiscal incentives, Nigeria should establish a centralized agency dedicated to managing all renewable energy incentive programs. This agency would function as a “one-stop shop” responsible for processing applications, interfacing with key institutions such as the Nigerian Investment Promotion Commission (NIPC), Federal Inland Revenue Service (FIRS), and Nigeria Customs Service, and tracking the progress of implementation. A centralized structure

would help reduce bureaucratic delays, improve transparency, and enhance investor confidence. A comparable model can be seen in South Africa, where the Independent Power Producer (IPP) Office plays a similar coordinating role under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

b) Develop a Transparent Monitoring and Evaluation (M&E) Framework: Implement a data-driven framework with clear performance indicators (e.g., MW installed, investment flows, local job creation) to evaluate the effectiveness of tax incentives.

c) Enhance Local Manufacturing Capabilities: Introduce specific tax breaks, R&D grants, and capacity-building programs aimed at developing local manufacturing of components such as inverters, batteries, and mounting structures.

d) Expand the Scope and Duration of Incentives: Extend tax holidays and capital allowances to cover the full project lifecycle, including operations, maintenance, and hybrid/off-grid systems.

e) Provide Technical Assistance to Local Developers: Many smaller firms and community-based initiatives lack the capacity to navigate complex tax and regulatory systems. Government should fund technical advisory support and toolkits.

f) Promote National Awareness and Investor Education: Run public awareness campaigns via TV, radio, and online platforms to inform developers, investors, and the public about available incentives and application procedures.

References

Adeshina, M. A., Ogunleye, A. M., Suleiman, H. O., Yakub, A. O., Same, N. N., Suleiman, Z. A., & Huh, J.-S. (2024). From potential to power: Advancing Nigeria's energy sector through renewable integration and policy reform. *Sustainability, 16*(20), 8803. https://doi.org/10.3390/su16208803

Ajayi, F. (2025, January 15). *Nigeria's national grid challenges: Reform efforts and pathways to sustainability*. Nigerian Inquirer. https://inquirer.ng/2025/01/15/nigerias-national-grid-challenges-reform-efforts-and-pathways-to-sustainability/

Akintaro, S. (2024, August 28). *NIPC grants pioneer status to construction, Children Park, power generation, agro, grain mill companies*. Nairametrics.

https://nairametrics.com/2024/08/28/nipc-grants-pioneer-status-to-construction-children-park-power-generation-agro-grain-mill-companies/

Anyaogu, I. (2025, March 10). *Nigeria strikes $200 million deal to power rural areas with renewable mini grids*. Reuters. https://www.reuters.com/world/africa/nigeria-strikes-200-million-deal-power-rural-areas-with-renewable-mini-grids-2025-03-10/

Bhattacharyya, S. C. (2011). *Energy Economics: Concepts, Issues, Markets and Governance*. Springer.

Bodunde, D. (2025, May 26). Climate watch: Customs to eliminate import duties on renewable energy technologies. *TheCable*. https://www.thecable.ng/climate-watch-customs-to-eliminate-import-duties-on-renewable-energy-technologies/

BusinessDay. (2025, May 7). Nigeria to float N300bn in green bonds in 2025. https://businessday.ng/business-economy/article/nigeria-to-float-n300bn-in-green-bonds-in-2025/

David, I. C., & Tijjani, A. (2025). Enhancing energy security in Nigeria: An analysis of international efforts (2015–2024). *South Asian Journal of Social Studies and Economics*, *22*(1), 29–37. https://doi.org/10.9734/sajsse/2025/v22i1942

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. (2021). *Enabling environment for renewable energy investment in Nigeria*. https://www.giz.de/en/worldwide/26374.html

Eberhard, A., & Naudé, W. (2017). *Review of the South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)* [PDF]. University of Cape Town Graduate School of Business.

Eberhard, A., Kolker, J., & Leigland, J. (2018). South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons. *World Bank Group*.

Ebii, C. (2019, July 2). *Solar import duty and tariffs: To exempt or not?* Heinrich Böll Stiftung. https://ng.boell.org/en/2019/07/02/solar-import-duty-and-tariffs-exempt-or-not

Energy Commission of Nigeria. (2022, April 27). *National Energy Masterplan (NEMP) 2022* [Approved]. Federal Ministry of Science, Technology and Innovation. https://www.energy.gov.ng/Energy_Policies_Plan/APPROVED_NEMP_2022.pdf

Etomi, G. (2017, September 20). Pioneer Status Incentives as it impacts on Investors in the Solar Power Market Space in Nigeria. *Lexology*.

https://www.lexology.com/library/detail.aspx?g=540d8a1f-1e43-49a8-9ff2-e041325a1c50

Federal Inland Revenue Service (FIRS). (2021). *Companies Income Tax Act: Capital allowances and incentives*. https://www.firs.gov.ng

FSD Africa. (2025). *Nigeria Green Bond Programme*. Retrieved June 12, 2025, from https://fsdafrica.org/projects/nigeria-green-bond-programme/

GIZ. (2020). *The green finance market emerging in Brazil* [PDF]. Deutsche Gesellschaft für Internationale Zusammenarbeit.

Heinrich Böll Stiftung Nigeria. (2022, February). *Nigeria's Green Bond Programme: Second review with updated table of contents*. https://ng.boell.org/sites/default/files/2022-02/Nigeria%E2%80%99s%20Green%20Bond%20Programme2022Report.pdf

Informa Markets. (2023). *NE23 Nigeria Energy Roadmap Report*. Nigeria Energy. https://www.nigeria-energy.com/content/dam/markets/emea/nigeria-energy/en/2023/docs/NE23-NigeriaEnergyRoadmap-Report.pdf

Informa Markets. (2024). *NE24 Why Nigeria report*. Nigeria Energy. https://www.nigeria-energy.com/content/dam/markets/emea/nigeria-energy/en/2024/NE24-Why-Nigeria-report.pdf

International Energy Agency (IEA). (2017). *Perspectives for the Energy Transition: Investment Needs for a Low-Carbon Energy System*. Paris: IEA/OECD.

International Energy Agency (IEA). (2021). *Renewables 2021: Analysis and Forecast to 2026*. Paris: IEA.

International Energy Agency (IEA). (2022). *Africa Energy Outlook 2022*. https://iea.blob.core.windows.net/assets/220b2862-33a6-47bd-81e9-00e586f4d384/AfricaEnergyOutlook2022.pdf

International Energy Agency (IEA). (2023). *Morocco – Energy Policy Review*. IEA.

International Renewable Energy Agency (IRENA). (2021). *Renewable Energy Market Analysis: Africa and Its Regions*. Abu Dhabi: IRENA.

International Renewable Energy Agency (IRENA). (2022). *Renewable Capacity Statistics 2022*. Abu Dhabi: IRENA.

International Renewable Energy Agency (IRENA). (2022, April). *Renewable Capacity Statistics 2022*. https://www.irena.org/publications/2022/Apr/Renewable-Capacity-Statistics-2022

IPP Office. (2021, October 26). *An overview of the Independent Power Producers Procurement Programme (IPPPP)* [PDF]. African Energy Portal.

Isah, A., Dioha, M. O., Debnath, R., Chen, W., Okereke, C., & Ndoke, P. N. (2023). Financing renewable energy: Policy insights from Brazil and Nigeria. *Energy, Sustainability and Society*, *13*(2). https://doi.org/10.1186/s13705-022-00379-9

Jaffe, A. B., Newell, R. G., & Stavins, R. N. (2005). A tale of two market failures: Technology and environmental policy. *Ecological Economics*, 54(2–3), 164–174. https://doi.org/10.1016/j.ecolecon.2004.12.027

John, N. K., Onwuagbu, C. C., & Chigozie, C. J. (2025). Potential of integrated energy solution in Nigeria: Opportunities and challenges for sustainable development—Multi facet assessment model. *Discover Sustainability*, *6*, 239. https://doi.org/10.1007/s43621-025-00915-5

Kemp, Y. (2025, March 10). *Nigeria: Red tape slowing down renewable energy developers*. ESI Africa. https://www.esi-africa.com/business-and-markets/nigeria-red-tape-slowing-down-renewable-energy-developers/

Kiplagat, J. K., Wang, R. Z., & Li, T. X. (2011). Renewable energy in Kenya: Resource potential and status of exploitation. *Renewable and Sustainable Energy Reviews*, 15(6), 2960–2973. https://doi.org/10.1016/j.rser.2011.03.023

Ministry of Energy, Kenya. *(2021). Feed-in-Tariffs Policy on Renewable Energy Resource Generated Electricity (Small-Hydro, Biomass, Biogas)*, 3rd Revision, January 2021.

Ministry of New and Renewable Energy (MNRE), Government of India. (2022). *Annual report 2021–22*. Retrieved from https://mnre.gov.in/en/annual-report/

Nigerian Investment Promotion Commission (NIPC). (2022). *Incentives for renewable energy investments in Nigeria*. Nigerian Investment Promotion Commission. https://nipc.gov.ng/incentives-for-renewable-energy-investments-in-nigeria

Nigerian Investment Promotion Commission (NIPC). (2025). *Pioneer Status Incentive Scheme Guidelines*. Retrieved June 25, 2025, from https://nipc.gov.ng/investment-promotion/pioneer-status-incentive/

Nigerian Investment Promotion Commission (NIPC). (2025, February). *Pioneer Status Incentive (PSI) report: Fourth quarter 2024*. https://www.nipc.gov.ng/wp-content/uploads/2025/02/2024-Q4-PSI-Report-pdf.pdf

Nilsson, M., Chisholm, E., Griggs, D., Howden-Chapman, P., McCollum, D., Messerli, P., ... & Stafford-Smith, M. (2018). Mapping interactions between the sustainable development goals: lessons learned and ways forward. *Sustainability Science*, 13(6), 1489–1503. https://doi.org/10.1007/s11625-018-0604-z

Nkalo, U. K. (2025). Nigeria's renewable energy sector: Analysis of the present and future prospects. *Solar Compass*, *14*, 100123. https://doi.org/10.1016/j.solcom.2025.100123

Obada, D. O., Muhammad, M., Tajiri, S. B., Kekung, M. O., Abolade, S. A., Akinpelu, S. B., & Akande, A. (2024). A review of renewable energy resources in Nigeria for climate change mitigation. *Case Studies in Chemical and Environmental Engineering*, *9*, 100669. https://doi.org/10.1016/j.cscee.2024.100669

Okhirebhu, D. I., Agboola, P. O., Oluwasola, M. O., & Johnson, O. N. (2025). Overcoming policy and regulatory barriers: Accelerating Nigeria's transition to renewable energy. *IIARD International Journal of Geography & Environmental Management, 11*(2), 88–108. https://doi.org/10.56201/ijgem.vol.11.no2.2025.pg88.108

Onuh, P., Ejiga, J. O., Abah, E. O., & Onuh, J. O. (2024). Challenges and opportunities in Nigeria's renewable energy policy and legislation. *Journal of Advanced Research*, *23*, 2354–2372. https://doi.org/10.30574/wjarr.2024.23.2.2391

Pan, J., Cross, J. L., Zou, X., & Zhang, B. (2024). To tax or to trade? A global review of carbon emissions reduction strategies. *Energy Strategy Reviews*, *55*, 101508. https://doi.org/10.1016/j.esr.2024.101508

PricewaterhouseCoopers Nigeria. (2020, May). *Nigeria's Ministry of Finance issues new VAT order*. https://www.pwc.com/ng/en/assets/pdf/nig-min-finance-issue-new-vat-order.pdf

Remteng, C., Suleiman, M. B., Asoegwu, C. M., & Emenyonu, C. N. (2021). Policy and regulatory framework for energy in Nigeria. *Energypedia*. https://energypedia.info/wiki/Policy_and_Regulatory_Framework_for_Energy_in_Nigeria

Renewable Energy Association of Nigeria (REAN). (2024). *Perception survey of local manufacturers in the Nigerian renewable energy sector*. https://rean.org.ng/wp-

content/uploads/media/Perception_Survey_of_Local_Manufacturers_in_the_Nigerian_Renewable_Energy_Sector.pdf

Renewable Energy Association of Nigeria (REAN). (2024, December). *REAN Report Second Review with updated Table of Contents*. https://rean.org.ng/wp-content/uploads/2024/12/REAN-Report-Second-Review-with-updated-Table-of-Content.pdf

Rogge, K. S., & Reichardt, K. (2016). Policy mixes for sustainability transitions: An extended concept and framework for analysis. *Research Policy*, 45(8), 1620–1635. https://doi.org/10.1016/j.respol.2016.04.004

Rural Electrification Agency (REA). (2025). *Rural Electrification Agency of Nigeria*. https://rea.gov.ng

Stantec, GIZ, & TYPSA. (2024, July). *GT081 Horizontal Report D7: Decentralised Renewable Energy Market Report – Nigeria* (Version 3). European Union Global Technical Assistance Facility for Sustainable Energy. https://www.ruralelec.org/wp-content/uploads/2024/07/GT081-Horizontal-Report-D7-DRE-Market-Report-Nigeria-Final-v3-designed.pdf

Stern, N. (2007). *The Economics of Climate Change: The Stern Review*. Cambridge University Press.

United Nations Development Programme. (2021). *Nigeria's climate promise: UNDP Climate Promise country profile*. UNDP. https://climatepromise.undp.org/what-we-do/where-we-work/nigeria

West African Renewable Energy Association (WAREA). (2023, March). *Impact of import duties and VAT on affordability and uptake of off-grid solar products across ECOWAS*. https://cleantechnologyhub.com/wp-content/uploads/2023/03/Impact-of-Import-Duties-and-VAT-on-Affordability-and-Uptake-in-WA-FINAL-1.pdf

Wikipedia contributors. (2025, June 12). *Nigerian Electricity Regulatory Commission*. Wikipedia. https://en.wikipedia.org/wiki/Nigerian_Electricity_Regulatory_Commission

World Bank. (2018). *Fiscal incentives for investment in developing countries: A review of the evidence*. Washington, DC: World Bank Group.

World Bank. (2022). *South Africa: Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) Success Factors and Lessons*. Washington, DC: World Bank.

World Bank. (2023). *Nigeria Energy Access Diagnostic Report*. Washington, DC: World Bank.

World Bank. (2023). *Tracking SDG 7: The energy progress report 2023*. International Energy Agency, International Renewable Energy Agency, United Nations Statistics Division, World Bank, & World Health Organization. https://www.worldbank.org/en/topic/energy/publication/tracking-sdg-7-the-energy-progress-report-2023

World Bank. (2025, March). *Technical assessment: Enhancing domestic revenue mobilization in Benin*. https://documents1.worldbank.org/curated/en/099052423104516832/pdf/P17676301da8ed0908e2f00a71b089fb24.pdf

Zee, H. H., Stotsky, J. G., & Ley, E. (2002). Tax incentives for business investment: A primer for policy makers in developing countries. *World Development*, 30(9), 1497–1516. https://doi.org/10.1016/S0305-750X(02)00050-5