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Energy Access, Development, and Legal Rights: A Nigerian Perspective

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ABSTRACT

Access to reliable and affordable energy is necessary for economic growth, social development, and the fulfilment of fundamental human rights. In Nigeria, despite its status as a major energy producer, millions of people remain without electricity, with access gaps particularly pronounced in rural and underserved areas. Although initiatives like the Nigeria Electrification Project (NEP) and the Distributed Access through Renewable Energy Scale-up (DARES) have enhanced energy access, the lack of legal recognition of energy as a right continues to compromise equity, accountability, and long-term sustainability. This paper explores how energy access, legal frameworks, and economic development intersect in Nigeria, drawing on international declarations, national policies, and comparative experiences from the Global South. It emphasises the economic effects of electrification on education, healthcare, and productivity, while examining tensions between climate commitments and development priorities. The paper argues that codifying energy access as a legal right is critical for improving citizens, strengthening regulatory enforcement, and fostering inclusive growth. By aligning law, economic, and human rights perspectives, Nigeria can build a more resilient and equitable energy future in which no one is left behind.

KEY WORDS: Energy Access, Legal Rights, Economic Development, NEP, SDG 7

JEL Codes: Q28, K32, O13, Q42, D63

1. Introduction

Access to modern energy services is widely recognized as a cornerstone of economic transformation, human development, and social equity (Moss and Kincer, 2023). In Nigeria, Africa's most populous nation and a major energy producer, an estimated 85 million people, or roughly 40 percent of the population, still lack access to electricity. Even for people who are linked to the national grid, power outages and supply problems remains common. This deficit in infrastructural has given rise to widespread reliance on petrol and diesel generators, which are bad for the environment and

the economy (World Bank, 2023). Such conditions not only hurt productivity and public service delivery but also reflect the paradox of energy abundance amidst energy poverty.

Over the past few years, there have been concerted efforts to resolve this problem. Notably, the World Bank-supported Nigeria Electrification Project (NEP) has facilitated the installation of 125 mini-grids and over one million solar home systems, has given more than 5.5 million Nigerians access to electricity, and has generated more than 5,000 jobs in the green energy industry. Building upon this progress, the Distributed Access through Renewable Energy Scale-up (DARES) initiative aims to reach an additional 17.5

million more people with renewable energy solutions (World Bank, 2023). These developments show how important targeted interventions are, but they also show the limitations of policy-driven approaches that lack a firm legal foundation.

Around the world, access to energy is increasingly conceptualized within the framework of human rights, as reflected in international instruments such as the United Nations Sustainable Development Goal 7, which advocates for cheap, dependable, and sustainable energy for all (UNEP, 2025). In contrast, Nigeria's domestic legal landscape has yet to fully align with this perspective. While various policy documents and initiatives articulate the goal of expanded energy access, the right to electricity is neither constitutionally guaranteed nor legally enforceable. Although reforms such as the Electricity Act 2023 and the Fifth Constitutional Alteration Bill have enhanced the regulatory environment, they fall short of establishing universal energy access as a justiciable right (Federal Ministry of Power, 2024). The lack of such legal recognition undermines institutional accountability, impedes regulatory coherence, and constrains citizens, particularly those in marginalized or rural communities, from claiming equal access to energy (Ukera, 2023).

This paper interrogates the interrelationship between energy access, legal rights, and development outcomes in Nigeria. Specifically, it examines the adequacy of existing legal and policy instruments in addressing the energy access gap, and explores how embedding the right to energy within the legal architecture could serve as a catalyst for inclusive and sustainable development. The central thesis advanced here is that the legal codification of energy access is not merely a normative imperative, but a strategic lever for promoting economic empowerment, social justice, and long-term national progress.

2. Legal Frameworks for Energy Access

Energy access is not only a developmental priority; it is increasingly articulated in terms of rights and legal entitlements. Numerous international accords and declarations worldwide have emphasized the importance of energy for human development and well-being. The degree to which these pronouncements are incorporated into national laws and policies differs considerably. This section examines the current legal frameworks, both international and national, that influence the quest for universal energy access. The analysis begins by examining global instruments such as the United Nations Sustainable Development Goals (SDGs), the Universal Declaration of Human Rights, and the Paris Agreement, all of which emphasize energy as a catalyst for sustainable development. The discussion then turns to national legal frameworks, emphasizing best practices from select countries in the Global South that have enacted legislation to establish energy access as a legal or constitutional right. Through this analysis, the section aims to evaluate how legal recognition, and institutional frameworks on the efficacy, equality, and sustainability of energy access programs.

I. International Declarations (SDG 7, Universal Declaration of Human Rights, Paris Agreement)

International legal and policy instruments increasingly recognize access to energy as a fundamental component of human development, environmental sustainability, and the realization of human rights. Among these, three major frameworks have shaped the global discourse on energy access.

Sustainable Development Goal 7 (SDG 7), adopted by the United Nations in 2015, aims to "ensure access to affordable, reliable, sustainable and modern energy for all" by 2030. SDG 7 is a critical

enabler for other goals, including poverty eradication, quality education, and gender equality. It emphasizes both universal electrification and the transition to clean energy sources, making it a cornerstone for integrated and inclusive development strategies (UN, 2015).

The Universal Declaration of Human Rights (UDHR), though not explicitly referencing energy, underpins the argument for energy as a human right through its articulation of rights to a standard of living adequate for health and well-being (Article 25), as well as rights to education (Article 26) and work (Article 23). Energy access is a prerequisite for realizing many of these rights in practice. Scholars and advocates argue that the absence of energy perpetuates deprivation and inequality, thereby undermining the realization of these core human rights (UN General Assembly, 1948).

The Paris Agreement (2015), a landmark international treaty on climate change, commits signatories to pursue efforts to limit global warming to well below 2°C while promoting climate-resilient development. Energy transition is central to these efforts. Article 2 of the Agreement explicitly calls for "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development," which implicitly demands expanded access to clean energy technologies, particularly in developing countries. It also places a responsibility on developed nations to support energy access in the Global South through technology transfer, climate finance, and capacity-building (UNFCCC, 2015).

Together, these instruments establish a strong normative foundation for recognizing energy access not merely as a policy objective, but as a global priority and emerging human right. They also provide a basis for national governments, including Nigeria, to align their domestic laws and development strategies with global standards and obligations.

II. National Legal Frameworks and Comparative Examples from the Global South (e.g., Kenya, India, South Africa)

Countries in the Global South have adopted varied legal approaches to address the challenges of energy access, with some making notable progress through legislative reforms, rights-based approaches, and decentralized energy initiatives. Comparative insights from India, Kenya, and South Africa reveal important lessons that Nigeria can draw upon.

India has pursued an aggressive electrification agenda through both legislative and policy frameworks. The Electricity Act of 2003 provides the backbone for electricity regulation, encouraging private sector participation and promoting rural electrification. Furthermore, the Saubhagya Scheme (Pradhan Mantri Sahaj Bijli Har Ghar Yojana) launched in 2017 aimed to provide last-mile connectivity to all households. As of 2021, the program had connected over 28 million households, illustrating the effectiveness of combining legal mandates with strong political will (Government of India, 2021).

Kenya's energy sector is governed by the Energy Act of 2019, which consolidates laws relating to electricity, renewable energy, and petroleum. It explicitly recognizes the state's duty to ensure universal access to affordable and reliable energy. The Act established the Energy and Petroleum Regulatory Authority (EPRA) to oversee the licensing, compliance, and consumer protection across the energy sector. Kenya's legal commitment has enabled significant progress in off-grid electrification and investment in mini-grid systems (Kenya Law, 2019).

South Africa, while not explicitly enshrining the right to electricity in its Constitution, interprets energy access through the broader lens of socioeconomic rights. The Constitution guarantees the right to adequate housing and dignity, which courts have interpreted to include access to basic services such as electricity. The country has also pursued reforms such as the Electricity Regulation Amendment Act, which aims to restructure the electricity supply industry, enhance competition, and expand generation capacity in response to chronic power shortages (Republic of South Africa, 2023).

These comparative examples underscore the value of embedding energy access within national legal frameworks, not merely as policy goals but as enforceable rights or regulatory obligations. They also illustrate the importance of institutional reforms, clear mandates for regulatory agencies, and integration of renewable energy solutions in legal planning.

3. Economic Impacts of Energy Access

Access to reliable and affordable energy is a fundamental driver of economic development, productivity, and poverty alleviation. It underpins key sectors such as education, healthcare, industrial activity, and overall quality of life. As Benayed, Awijen, Bousnina, and Chroufa (2024) and Nguyen, Phan, Tran, and Bui (2023) emphasize, energy access serves as a cornerstone for achieving sustainable development outcomes. Empirical evidence from both developed and developing economies consistently demonstrates a strong correlation between improved energy access and positive socio-economic outcomes.

a. Economic Growth and Productivity

Reliable electricity supply acts as a catalyst for industrialization and economic diversification. The World Bank (2023) estimates that Nigeria loses approximately \$26.2 billion annually due to unreliable electricity, equivalent to about 2% of its GDP. Similarly, the International Renewable Energy Agency (IRENA, 2022) projects that an energy transition aligned with a 1.5°C climate scenario could raise Africa's GDP by 6.4% between 2021 and 2050, while creating up to 8 million renewable energy jobs.

Energy access directly enhances household productivity and livelihood diversification. In both rural and urban areas, electricity enables small businesses to operate beyond daylight hours, improves cold storage for perishables, and reduces reliance on manual labor through mechanized tools. According to the International Energy Agency (IEA, 2022), rural electrification has been linked to a 30-40% increase in household income due to the emergence of new economic opportunities, especially for women and youth.

b. Educational Advancements

Electricity access is equally transformative in the education sector. Electrified schools are better equipped for digital learning, and longer study hours improve student outcomes. Households with electricity also offer conducive environments for homework and reading. A study by Banerjee, Duflo, and Glennerster (2017) in rural India found that villages with stable electricity supply had significantly higher school attendance and improved exam performance. Similarly, Lee, Miguel, and Wolfram (2016) found that rural school electrification in Kenya led to measurable improvements in academic achievement.

c. Healthcare Improvements

Energy access is essential for delivering quality healthcare. It powers critical medical equipment, enables safe childbirth, and ensures proper storage of vaccines. Yet, over 60% of health facilities in sub-Saharan Africa still lack reliable electricity, according to the World Health Organization (WHO, 2021), which limits the availability and quality of services. In rural India, Barron and Torero (2017) report that clinic-based deliveries rose by 50% following electrification, while overall health outcomes in these communities significantly improved.

d. Before-and-After Case Insights

Communities without energy access typically experience stunted economic growth, limited educational attainment, and substandard healthcare services. However, after gaining electricity access, these sectors often show measurable improvements. This progression reinforces the argument that energy access is not merely a technical issue but a foundational component of broad-based, inclusive, and sustainable development.

4. Tensions and Tradeoffs

Efforts to expand energy access in developing countries like Nigeria are increasingly challenged by the need to balance urgent development goals with global climate obligations. This dual imperative, achieving universal access to affordable, reliable energy while reducing greenhouse gas emissions, creates complex tensions and tradeoffs in energy policy and legal frameworks.

a. Balancing Climate Obligations with National Development Goals

Balancing climate obligations with national development goals is a complex but critical undertaking, especially for countries like Nigeria that are confronted with both significant development challenges and heightened climate vulnerability. While the country strives to meet international climate commitments, such as those outlined in the Paris Agreement, it must also pursue pressing national objectives including poverty alleviation, universal energy access, and inclusive economic growth (UNFCCC, 2015).

Nigeria's development goals are anchored in the urgent need to improve the living standards of its growing population. Key priorities include eradicating poverty and hunger, expanding access to electricity, developing resilient infrastructure, and fostering sustainable economic growth. These goals are not only central to the country's domestic policy but are also aligned with broader global targets, such as the United Nations Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 7 (Affordable and Clean Energy), and SDG 8 (Decent Work and Economic Growth) (UNDP, 2020).

At the same time, Nigeria is committed to several international climate obligations. Under its updated Nationally Determined Contributions (NDCs), the country has pledged to reduce greenhouse gas emissions by 20% unconditionally and 47% conditionally by 2030, increase its renewable energy capacity, and adopt climate-resilient agricultural practices (Federal Ministry of Environment, 2021). Meeting these targets requires a significant shift in how the country produces and consumes energy, manages its forests and natural resources, and plans its urban and rural development (IEA, 2022).

However, tension often arises between these climate commitments and development imperatives. For instance, expanding electricity

access, a development priority, often relies on fossil fuel-based generation, which could conflict with emission reduction goals. Similarly, promoting industrialization for job creation and economic growth could increase emissions if industries depend on non-renewable energy sources. Moreover, limited financial resources pose a challenge, as implementing both climate and development plans requires substantial investment that often exceeds Nigeria's fiscal capacity (World Bank, 2022).

To navigate these trade-offs, Nigeria must adopt a strategic approach. A just energy transition, which involves gradually phasing out fossil fuels while simultaneously investing in decentralized renewable energy solutions, is crucial (IRENA, 2022). Leveraging green finance through international climate funds, carbon markets, and private sector investments can help bridge funding gaps. For example, the Nigeria Energy Transition Plan (2022) outlines pathways to achieve net-zero emissions while supporting economic growth and energy access for all (Office of the Vice President, 2022).

Furthermore, policy coherence is essential, climate policies must be aligned with national development plans, such as Nigeria's Economic Recovery and Growth Plan (ERGP) and Vision 2050, to ensure mutual reinforcement (Ministry of Budget and National Planning, 2017). Additionally, building institutional capacity and developing human capital are key to implementing climate-smart development initiatives. By strengthening governance frameworks, enhancing technical expertise, and promoting public awareness, Nigeria can more effectively balance environmental sustainability with economic and social development.

Ultimately, achieving this balance requires integrated, inclusive, and forward-thinking strategies that ensure both climate resilience and improved national well-being. It is only through harmonizing climate and development goals that Nigeria can ensure a sustainable and prosperous future for its people.

b. Legal Limits on Fossil Fuel-Based Access Strategies

The continued reliance on fossil fuels for electrification faces increasing legal and policy limitations, both domestically and internationally, due to mounting climate obligations and environmental concerns. International agreements such as the Paris Agreement (UNFCCC, 2015) commit signatory countries, including Nigeria, to reduce greenhouse gas emissions and transition toward low-carbon energy systems. This global shift has led to rising legal pressure on governments to phase out fossil fuel subsidies, implement carbon pricing, and set legally binding emission targets. These international norms influence national energy laws and constrain policy space for fossil fuel-based electrification. For instance, Nigeria's Energy Transition Plan (ETP) launched in 2022 outlines a clear strategy to achieve net-zero emissions by 2060, prioritizing renewable and decentralized energy solutions over traditional fossil-fuel-based approaches (Office of the Vice President, 2022).

Nationally, legal instruments such as Nigeria's Electric Power Sector Reform Act (2005) and the Climate Change Act (2021) also place limits on fossil fuel usage. The Climate Change Act mandates that the government align all energy and infrastructure projects with emission-reduction targets, effectively discouraging the approval of large-scale fossil fuel-based electrification projects (Federal Government of Nigeria, 2021). In addition, environmental regulations under the National Environmental Standards and Regulations Enforcement Agency (NESREA) impose compliance requirements on power plants concerning air quality and emissions

control, which can be costly and technically challenging for fossil-fueled facilities (NESREA, 2020). Moreover, development finance institutions such as the World Bank and African Development Bank have begun to restrict funding for fossil-fuel-based power generation, favoring clean energy projects instead (World Bank, 2022).

These legal and policy limitations are not only regulatory in nature but also economic and geopolitical. As more countries adopt climate legislation and clean energy targets, Nigeria risks stranded assets and reduced competitiveness in a global economy shifting away from fossil fuels. Hence, while fossil fuels remain part of the current energy mix, their legal viability is narrowing. The challenge for Nigeria lies in reconciling energy access needs with climate and legal constraints, making it imperative to develop flexible legal frameworks that prioritize sustainability while ensuring equitable energy delivery.

5. Policy and Legal Recommendations

To bridge the gap between energy access and legal enforcement, Nigeria must adopt a forward-looking and inclusive legal framework that aligns with its development priorities and climate obligations. The following recommendations aim to address institutional, regulatory, and policy challenges to achieving equitable, sustainable energy access.

a. Strengthen Legal Guarantees of Access

Strengthening enforceable legal guarantees for universal energy access is crucial to closing the persistent energy gap in many developing countries, particularly in sub-Saharan Africa. Legal recognition of energy access as a human right transforms it from a policy aspiration into an enforceable obligation. Such guarantees can compel governments to prioritize investment in energy infrastructure, allocate budgetary resources, and ensure regulatory oversight. Countries like Kenya have made strides in this direction by enshrining access to energy in their constitution under Article 43, which guarantees every citizen the right to clean and safe water in adequate quantities, housing, and reasonable standards of sanitation, implicitly including access to energy as a component of a dignified life (Constitution of Kenya, 2010). Similarly, South Africa's Electricity Regulation Act (2006) recognizes electricity as a basic service and mandates universal access through government policy instruments and licensing conditions for utilities (South African Government, 2006).

In Nigeria, however, the absence of such explicit legal guarantees undermines progress. While programs like the Nigeria Electrification Project (NEP) and the Electricity Act (2023) aim to improve access, they lack the binding force that would allow citizens to hold authorities accountable. To address this, Nigeria could adopt a Rights-Based Approach (RBA) to energy access by amending existing energy legislation or introducing a constitutional amendment recognizing electricity as a basic human entitlement. Legal instruments could also mandate equitable access targets, rural electrification timelines, and grievance redress mechanisms to ensure transparency and inclusivity. International frameworks such as Sustainable Development Goal 7 (SDG7), which calls for universal access to affordable, reliable, and modern energy services by 2030, provide normative support for this legal transformation (UN, 2015). Enforceable legal rights would empower underserved populations to claim energy access as a matter of justice, rather than charity, and promote long-term development outcomes.

b. Design Better Regulatory Incentives for Clean, Decentralized Solutions

Designing effective regulatory frameworks for decentralized renewable energy solutions is essential for accelerating universal energy access, particularly in regions where extending the national grid is financially or technically unfeasible. Decentralized energy systems such as mini-grids, solar home systems, and community-based bioenergy projects offer flexible, scalable, and often more cost-effective alternatives to centralized, fossil fuel-based grids. However, the growth and sustainability of these systems depend on supportive, transparent, and predictable regulatory environments. A robust framework must include streamlined licensing procedures, transparent tariff-setting mechanisms, and policies that encourage private sector participation while safeguarding consumer interests. According to the International Renewable Energy Agency (IRENA, 2019), countries that adopt enabling regulations, such as clear interconnection standards and fiscal incentives, tend to experience more rapid deployment of decentralized systems. For example, India's National Energy Policy (2017) and Kenya's Mini-Grid Regulations (2022) have boosted investor confidence by setting quality standards, defining subsidy structures, and outlining grid integration protocols.

In Nigeria, progress has been made through the Mini-Grid Regulation of 2016 issued by the Nigerian Electricity Regulatory Commission (NERC), which provides a simplified framework for the deployment of mini-grids up to 1 MW. Despite this, implementation has been hindered by bureaucratic bottlenecks, ambiguous land acquisition processes, and weak enforcement mechanisms. The recent Electricity Act of 2023 marks a significant step forward by empowering state governments and rural electrification agencies to play more active roles in decentralized energy planning. However, further reforms are needed to reduce regulatory inefficiencies and improve coordination between federal and state actors (Federal Ministry of Power, 2023).

To enhance the effectiveness of Nigeria's regulatory framework for decentralized renewable energy (DRE), the following measures should be prioritized:

- Streamlining licensing and permitting processes for private developers to reduce delays and administrative burdens.
- Offering performance-based subsidies and tax incentives that reward rural electrification projects for reaching underserved communities.
- Encouraging public-private partnerships (PPPs) to accelerate the deployment of DRE systems, particularly in high-need and remote areas.

In addition, integrating renewable energy targets into legally binding national development plans and aligning energy regulation with international climate obligations, such as those under the Paris Agreement, would reinforce Nigeria's energy transition goals. Ultimately, regulatory innovation anchored in legal certainty, market confidence, and social equity is key to unlocking the full potential of decentralized renewable energy systems and ensuring inclusive, sustainable electrification.

c. Leveraging international legal instruments to promote equitable energy access

International legal frameworks provide essential direction and assistance for countries like Nigeria in their effort to achieve equal

energy access. Sustainable Development Goal 7 (SDG 7) aims for everyone to have access to affordable, reliable, sustainable, and modern energy by 2030, a goal that fits with Nigeria's national development priorities. Even though the Universal Declaration of Human Rights (Article 25) does not explicitly mention energy, its recognition of the right to an adequate standard of living is increasingly interpreted to include electricity, which is essential for accessing health care, education, and economic opportunities. Additionally, the Paris Agreement (2015), to which Nigeria is a signatory, encourages countries to pursue low-carbon, climate-resilient development pathways—making clean energy expansion both an environmental and a human rights imperative.

Nigeria has stated to incorporate some of these global commitments into its own laws. The Climate Change Act of 2021, for example, incorporates provisions that promote sustainable energy development in line with the Paris Agreement. Similarly, Nigeria's Nationally Determined Contributions (NDCs) explicitly prioritize clean energy investments as part of climate mitigation and adaptation strategies (Federal Ministry of Environment, 2021). However, these international commitments have not yet been fully embedded into enforceable national laws guaranteeing universal energy access. Strengthening domestic legislation to reflect Nigeria's SDG 7 and Paris Agreement obligations would help institutionalize accountability, attract climate finance, and reinforce energy justice.

According to the International Renewable Energy Agency (IRENA, 2021), countries that harmonize international energy access goals with local laws are more successful in mobilizing donor support and private investment. Legal alignment also gives civil society and communities to demand better service delivery. As Nigeria implements the Electricity Act 2023, it has a vital opportunity to formally recognize the right to energy access within its legal and regulatory system. Doing so would ensure that international norms are not merely aspirational but translated into concrete rights and obligations that drive inclusive electrification and sustainable development.

Conclusion

Access to energy is more than a development goal; it is a fundamental enabler of economic growth, social inclusion, and human dignity. In Nigeria, where millions still lack reliable electricity, the absence of legal recognition for energy access undermines the effectiveness of policy interventions and perpetuates inequality. Legal recognition matters because it elevates electricity provision from a discretionary policy objective to an enforceable right. This shift strengthens institutional accountability, empowers citizens, particularly those in underserved rural areas, to demand equitable service, and compels governments and regulators to prioritize inclusive energy delivery. It also provides a stable legal foundation for long-term planning, investment, and protection against political and market volatility. In essence, legal recognition ensures that access to energy is not a privilege for the few, but a guaranteed entitlement for all.

The intersection of law, economics, and human rights reveals that energy access is not merely a technical or policy issue, it is a key driver of inclusive and sustainable development. Legal frameworks establish enforceable guarantees; economic tools enhance efficiency and sustainability; and human rights principles uphold dignity and equity. Together, these domains form a powerful synergy: legal certainty stimulates investment; regulatory clarity fosters innovation, and universal access advances social justice. Recognizing and

integrating this synergy is essential for building a resilient and equitable energy system in Nigeria and beyond.

This paper has shown that while progress has been made through initiatives like the Nigeria Electrification Project (NEP) and the DARES program, the lack of a robust legal framework weakens accountability and jeopardizes long-term impact. Comparative experiences from countries such as Kenya, India, and South Africa demonstrate that enshrining energy access in law leads to better service delivery and greater empowerment for marginalized populations.

Legally recognizing energy access in Nigeria would bolster regulatory enforcement, encourage investment in clean and decentralized technologies, and ensure that no citizen is left behind in the country's energy transition. This legal transformation embodies the convergence of law, economic development, and human rights, an essential triad for achieving inclusive and sustainable national growth.

To fully unlock Nigeria's development potential, energy access must be treated not just as a policy ambition, but as a legal and moral imperative.

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