NIGERIA'S POWER SECTOR
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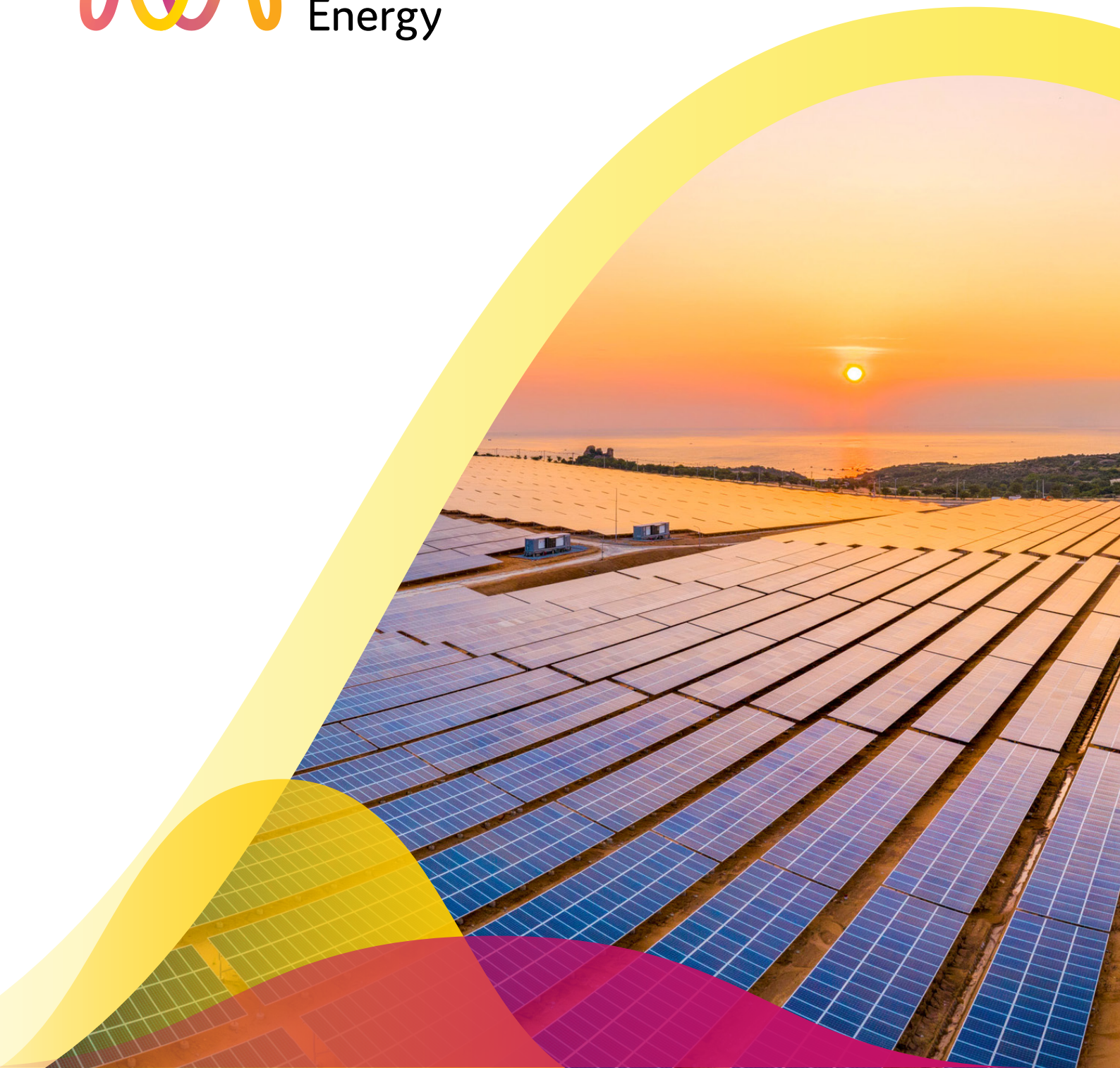

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Introduction

Nigeria, Africa's largest economy and leading oil producer, faces a significant power dilemma. According to the International Energy Agency (IEA), 140 million people in Nigeria lack access to electricity, constituting 71% of the country's population. Addressing this energy shortfall is critical, but the challenge extends beyond mere electrification. The country's energy mix heavily relies on biofuels and waste, making up 74.5% of the total energy supply as of 2021. This reliance, coupled with oil and natural gas usage, has resulted in considerable CO_2 emissions, amounting to 101 million tons in 2021—a stark 128% increase since 2000.

Despite these challenges, Nigeria holds significant potential for clean energy development. Solar energy, particularly in cities like Kano, Onitsha, and Lagos, presents an opportunity for substantial electricity generation due to high sunlight availability. Wind energy prospects are also promising in regions such as Enugu and Onitsha. Furthermore, Nigeria's rich mineral resources, including lithium, essential for renewable energy technologies, offer additional avenues for sustainable development.

Nigeria's commitment to environmental sustainability was underscored during COP26 when the country announced its goals for universal energy access by 2030 and carbon neutrality by 2060. With the Nigeria Energy Transition Plan, policies and programs are being implemented to shift from diesel and petrol generators to renewable energy sources, enhancing electrification and reducing carbon emissions. Collaborative efforts, such as the partnership between RMI and the Global Energy Alliance for People and Planet (GEAPP), aim to significantly boost Nigeria's energy capacity through renewable energy and battery systems.

Environmental Sustainability in Nigeria's Power Sector

Nigeria, Africa's largest economy and oil producer, has a power problem. Recent estimates from the International Energy Agency (IEA) show that 140 million people lack access to energy, representing 71% of its total population.

However, the challenge goes beyond just closing this energy gap.

According to the IEA, the country's energy mix reveals a heavy reliance on biofuels and waste, accounting for 74.5% of its total energy supply as of 2021. This is followed by oil at 14%, natural gas at 10.1%, and coal at 0.9%. This heavy dependence on non-renewable sources has led to substantial CO_2 emissions, totaling 101 million tons in 2021. This represents 0.3% of global emissions and a 128% increase since 2000.

These figures confirm that the need to tap into renewable energy sources is but an urgent necessity.

Clean Energy Potential

Here's the brighter side: Nigeria is endowed with plenty of resources that can be used to advance its energy transition and secure environmental sustainability in its power sector.

Solar energy, considered the most plentiful energy source on the planet, has high potential in tropical countries like Nigeria. Research shows that key cities like Kano, Onitsha, and Lagos have high levels of sunlight available for conversion to electricity: 6.08, 4.43, and 4.42 kWh/m² per day, respectively.

Wind energy also looks promising in Nigeria. In places like Enugu, Owerri, and Onitsha, wind speeds have been measured at 5.42, 3.36, and 3.59 meters per second, respectively. In particular, the wind speed in Enugu is high enough to generate electricity effectively, according to wind power standards.

Nigeria's vast mineral resources, including lithium, are also worthy of attention. Lithium is crucial for clean energy technologies (think of lithium-ion batteries, which are beneficial for renewable energy storage). Nigeria boasts lithium ores in the Pan-African Basement Complex. Although mining is currently minimal, significant deposits have been found in Kwara, Ekiti, Ogun, Nasarawa, and Plateau states.

A Comprehensive Plan

During COP26, then-President Muhammadu Buhari announced Nigeria's goal of achieving universal access to energy by 2030 and carbon neutrality by 2060. With the Nigeria Energy Transition Plan as a guide, they are introducing various policies and programs to make clean and affordable energy available to all citizens.

For its power sector — one of the five major sectors tackled by the plan — Nigeria plans to transition away from diesel and petrol generators, which currently supply most of the country's power. Initially, the country will expand its gas generation capacity to meet the increasing demand for electricity and support the integration of renewable energy sources.

Additionally, Nigeria aims to ramp up the use of renewable energy to facilitate electrification and reduce carbon emissions in various sectors, including buildings, industry, and transportation.

In support of these efforts, several partnerships have also emerged. For instance, RMI and the Global Energy Alliance for People and Planet (GEAPP) have recently revealed a plan showing that Nigeria could gain over 20 gigawatts of energy in the next 10 years by rapidly expanding renewable energy and battery systems. According to a press release, "The roadmap shows how to grow distribution company (DisCo) revenues, cut carbon by 33 million tons of CO2e per year, and help close the power supply gap."

Social Impact of Power Sector Reforms in Nigeria

While Nigeria boasts a robust clean energy potential and substantial gas reserves, it remains electricity-energy poor. However, since the '90s, the country's power sector has undergone pivotal reforms to help combat its electrification woes.

Decades of reforms

Nigeria's power sector once functioned as a vertically integrated monopoly managed by a sole government-owned utility.

In 1999, Nigeria established the Electric Power Sector Reform Implementation Committee and adopted the Nigerian Electric Power Policy in 2002. In 2004, the National Integrated Power Project was conceived. This was followed by the enactment of the Electric Power Sector Reform Act and the establishment of the Nigerian Electricity Regulatory Commission (NERC). Early 2010s reforms included the Presidential Action Committee on Power, the Presidential Task Force on Power, the release of the Roadmap for Power Sector Reform, and the incorporation of the Nigerian Bulk Electricity Trader.

In 2013, the generation and distribution subsectors were privatized, while the transmission subsector remained under government control. By 2017 and 2018, the Eligible Customer Policy, Disco Franchising, and the Meter Asset Provider (MAP) scheme were launched. The Service-Based Tariff (SBT) regime and the National Mass Metering Program (NMMP) began in 2020. In 2022, regulatory net-off was approved and implemented.

All these reforms have helped the country increase its electrification rate. As of 2022, 60.5% of its population has access to electricity. This figure is already a milestone, given that in 1990, it was only 27.3%.

The Electricity Act 2023 and its impact

The Electricity Act 2023, enacted in June 2023, is another giant modernization step for Nigeria's power sector.

Poised to introduce more developments, the Act repeals the 2005 Electric Power Sector Reform Act and consolidates various laws related to the Nigerian electricity supply industry. One of its key highlights is establishing a framework for decentralization and de-monopolization, granting states, companies, and individuals the authority to generate, transmit, and distribute electricity. This move allows states to establish their electricity markets independently of the NERC.

Additionally, the Act mandates the Ministry of Power to publish an integrated national electricity policy and strategic implementation plan within a year, with reviews every five years. This policy will guide sector development, focusing on rural electrification, optimal resource utilization (including coal, natural gas, and renewables), and various incentives such as waivers and subsidies.

NERC was also re-established as a corporate body with regulatory authority over the Nigerian Electricity Supply Industry (NESI). It is tasked with ensuring adequate supply, market pricing, and industry regulation. The Act also focuses on renewable energy, simplifying the licensing process and introducing incentives like tax breaks and feed-in tariffs to encourage investment in solar, wind, biomass, and small hydro projects.

The social impact of the Electricity Act 2023 is, simply put, transformative. It's particularly beneficial for rural and underserved communities as it empowers localized control over electricity. Apart from fostering inclusivity, it also enhances various sectors, ranging from health to retail, and attracts investment.

"The Electricity Act 2023 has the potential to attract crucial investments in the power sector's transformation... However, there is more to be done to enhance the legislation and make it more responsive to the yearnings of industry stakeholders," said Pedro Omontuemhen, Partner - West Market Area, Energy, Utilities & Resources Leader at PwC, in a recent report.

Governance and Transparency in Nigeria's Power Sector

Closing the gap in Nigeria's power sector is more than just about securing enough supply. For a sector that has undergone significant reforms in the past 25 years, strong governance plays a crucial role in overcoming the country's power issues.

The unbundling and privatisation of the state-owned Power Holding Company of Nigeria (PHCN) led to the creation of 11 distribution companies (DISCOs), six generation companies (GENCOs), and a transmission company, marking a new era of better governance and transparency. Today, the country's power sector comprises several key actors, including state-owned companies, private entities, and regulatory agencies that work to sustain Nigeria's power reforms.

Key Actors in Nigeria's Power Sector

The Federal Ministry of Power oversees policy formulation and provides overall direction to other agencies within the power sector. Meanwhile, the Nigerian Electricity Regulatory Commission (NERC) acts as an independent regulator. It was established by the Electric Power Sector Reform Act of 2005 (now repealed by the Electricity Act of 2023). The commission's roles include licensing operators, determining operating codes and standards, establishing customer rights and obligations, and setting cost-reflective industry tariffs.

In the country, there's also the Energy Commission of Nigeria (ECN), which coordinates national energy policies; the Rural Electrification Agency (REA), which promotes and facilitates access to electricity in rural and semi-urban areas; and the Nigerian Electricity Management Services Agency (NEMSA), which enforces technical standards and regulations through inspections, testing, and certification of electrical installations.

Among Nigeria's state-owned power companies is the Transmission Company of Nigeria (TCN), which manages the electricity transmission network. On the other hand, the Nigerian Bulk Electricity Trading (NBET) functions as the bulk trader in the electricity market. Meanwhile, the Gas Aggregation Company of Nigeria (GACN) is responsible for gas allocation for domestic use and other related tasks.

The power sector also includes private companies, such as GENCOs and DISCOs. The former generates electricity while the latter delivers electricity to end-users. Independent power producers (IPPs) are entities contracted to produce power at designated times, supported by power purchase agreements (PPAs).

Enhancing Transparency and Accountability

Transparency — or the lack thereof — has been a significant bottleneck in Nigeria's power sector. Unclear procurement processes and tariff structures and inadequate disclosure of financial transactions are issues that have eroded public trust.

To overcome this, recent years have seen concerted efforts to reform governance structures within the power sector. The Power Sector Recovery Program (PSRP), launched in 2017, is a landmark program that aims to restore financial viability, enhance the sector's institutional framework, and increase transparency.

Additionally, TCN, the country's transmission firm, has established an Anti-Corruption and Transparency Unit. In November 2023 last year, TCN Managing Director Sule Abdulaziz unveiled a Preventive Guide Handbook, which will serve as a crucial tool for proactively fighting corruption.

Over the past years, global organisations have also stepped in to boost transparency in Nigeria's power sector. For instance, MacArthur Foundation granted the Association of Nigerian Electricity Distributors (ANED) $680,000 between 2016 and 2019. With this award, ANED — the association of privatised DISCOs in Nigeria — launched initiatives to educate the public, policymakers, and the media about the power sector's privatisation, support rural electrification cooperatives, and improve customer service to enhance accountability and reduce corruption.

Investment and Financing for ESG in Nigeria's Power Sector

By 2060, Nigeria aims to be a carbon-neutral country while meeting its energy needs. For this goal to be realised, it's crucial to incorporate Environmental, Social, and Governance (ESG) principles into the nation's power sector.

ESG criteria evaluate a company's governance mechanisms and how well it manages its environmental and social impacts. ESG encompasses three main things. The environmental criteria focus on the entity's stewardship of the natural environment. Meanwhile, the social criteria assess its impact on people. Lastly, the governance criteria examine leadership oversight, transparency, and board diversity and independence, among others.

Starting in 2024, Nigerian companies are now required to undertake ESG reporting, according to the International Financial Reporting Standards (IFRS). For the power sector, this will help improve transparency, reduce risk, and track the progress towards sustainability goals.

Sustainable finance

In Nigeria, sustainable finance — which is all about including ESG considerations in investment decisions — has gained momentum with the introduction of green bonds. A green bond is defined as "a debt security issued by an organization for the purpose of financing or refinancing projects that contribute positively to the environment and/or climate."

Playing a crucial role in this development, the Nigerian Exchange Limited (NGX) launched the Green Bond Market Development Programme. This programme was instrumental in issuing the country's first sovereign green bond worth ₦10.69 billion in December 2017, which funded renewable energy projects and afforestation.

In a state of the market report, InfraCredit CEO Chinua Azubike emphasised the importance of the programme.

"Transitioning the global economy to a sustainable development path has become an existential imperative. As the largest source of long-term investment capital, bond markets have an especially important role to play, and the Nigerian Green Bond Market Development Programme will play a catalytic role in promoting the use of green bonds as an effective investment tool to finance Nigeria's transition to a low-carbon country," he remarked.

Apart from green bonds, there are also green loans and sustainability-linked loans (SLLs). While funds from bonds come from the investor market, funds from green loans come from a bank. Meanwhile, the key difference between green loans and sustainability-linked loans is that green loans must be used for specific green projects, while sustainability-linked loans can be used for general corporate purposes but are tied to the borrower achieving specific sustainability targets.

Pivotal projects

The Nigeria Sovereign Investment Authority (NSIA) is also vital in driving sustained economic development for the country.

In a statement, Managing Director and CEO Aminu Umar-Sadiq reaffirmed the authority's dedication to considering ESG criteria when investing.

"Our robust ESG framework ensures ESG considerations are embedded in our operations and investments, both new investments and existing portfolios. We aim to build a legacy of economic prosperity and environmental stewardship for generations to come," he noted.

Among NSIA's notable investments is Carbon Vista. This joint venture with Vitol has an initial commitment of $50 million, and it aims to partner with local firms that deliver projects combining carbon offsetting with social outcomes. NSIA also acted as the Funds and Project Manager for a 10MW solar power plant in Kano State. This pilot project is hoped to stimulate more investment in Nigeria's power sector.

Conclusion

Nigeria's quest for a sustainable power sector is marked by significant milestones and a clear vision for the future. With a history of substantial reforms, including the recent enactment of the Electricity Act 2023, Nigeria is poised for continued progress. This Act decentralizes and de-monopolizes the electricity sector, empowering states, companies, and individuals to generate, transmit, and distribute electricity, thus fostering inclusivity and investment.

Governance and transparency have been pivotal in this journey. The establishment of regulatory bodies like the Nigerian Electricity Regulatory Commission (NERC) and initiatives such as the Power Sector Recovery Program (PSRP) underscore efforts to restore financial viability and enhance the sector's institutional framework. International collaborations and funding, including green bonds and sustainable finance mechanisms, further bolster Nigeria's commitment to integrating ESG principles into its power sector.

The path to achieving carbon neutrality by 2060 is ambitious but attainable. By leveraging its abundant renewable energy resources, improving governance structures, and securing sustainable financing, Nigeria is well-positioned to overcome its power challenges and foster economic growth. The Nigeria Sovereign Investment Authority (NSIA) and other key actors play crucial roles in this transformative journey, ensuring that ESG considerations are deeply embedded in operations and investments.

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