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POWER PLAY: UNLOCKING NIGERIA'S REGIONAL ELECTRICITY POTENTIAL

INTRODUCTION

The World Bank asserted in 2020 that Nigeria had a grid electricity access rate of 55.4% with frequent power outages affecting up to 85% of the population most of the time. These persistent power outages result in about \$29 billion loss in economic output annually. Despite having 23 power generating plants and a total capacity of 11,165.4 MW, the country's national power grid experienced 8 collapses between 2021 and 2023, resulting in fluctuating power generation levels of 4,000MW to 5,000MW.

The perennial power supply challenge therefore presents the need to and explore the potential of regional and decentralised electricity solutions to address Nigeria's energy crisis based on the new reforms in the electricity sector.

A QUICK BACKGROUND INTO THE NIGERIAN ELECTRICITY SUPPLY INDUSTRY (NESI)

The evolution of Nigeria's electricity sector can be traced back to its inception in 1896, ultimately leading to the establishment of the Nigerian Electricity Supply Company in 1929. Over time, the industry underwent significant changes, with the state-owned monopoly National Electric Power Authority ("NEPA") being the dominant player. NEPA's monopoly similar to Britain's CEB and South Africa's Eskom, was plagued with inefficiencies, limited customer choice, and an unreliable power supply which led to the reform of the electricity sector by the Federal Government of Nigeria.

The reform of the electricity sector included the enactment of the Electric Power Sector Reform Act ("EPSRA") in 2005 which established Nigerian Electricity Regulatory Commission (NERC) as the apex regulator of the electric power sector saddled with the responsibility of monitoring and regulating the Nigerian electricity industry, issuing licences to market participants, and ensuring their compliance with market rules and

regulations. Also, EPSRA created a single electricity market in Nigeria. Consequently, the successor of NEPA, Power Holding Company of Nigeria (“PHCN”) was unbundled vertically into 18 separate entities along the lines of power generation, transmission, and distribution.

Unfortunately, the privatisation exercise did not deliver the much-desired dividend to the public as the improvements thus far have been limited, at best. There are constraints within the transmission system due to infrastructural limitations, as well as challenges in gas supply by thermal generation companies, and which has continued to hinder the efficient distribution of power whilst the distribution companies (‘Discos’) are financially strained, struggling with revenue collection which they need to pay the bulk trader and indirectly other upstream players. Other country-specific circumstances that had impacted the success of electricity sector privatisation are the implementation strategies, political interference, lack of transparency, and insufficient due diligence prior to acquisition of the successor companies by investors.

The challenges of electric power supply have a huge economic impact on Nigeria. According to the World Bank in 2020, the persistent power outages result in about \$29 billion loss in economic output annually.

SOME CURRENT CHALLENGES IN THE NESI

- **Low Generation Capacity**

Generation capacity refers to the maximum potential electrical output that a power generation facility can produce under specific conditions. However, according to the NERC’s 2022 Market Competition Report published in 2023, the NESI grapples with a substantial gap between the installed generation capacity of 13MW and available power generation of a little above 4MW, primarily due to gas supply uncertainties, weak transmission networks, and maintenance issues.

- **Aggregate Technical and Commercial and Collection (“ATC&C”) Losses**

ATC&C losses refer to the disparity between the electricity received by a distribution company from the transmission company and the amount for which it bills customers. This calculation includes the loss of adjusted collections. Losses in energy transmission can be categorised as technical or commercial. Technical loss which is inherent in the process of current transfer, occur during electrical transmission, whilst non-technical losses include commercial and collection losses. Commercial losses refer to losses from energy delivered to customers but unaccounted for, often attributed to commercial factors, such as meter tampering, equipment failures, billing inaccuracies.

Whereas collection losses occur when energy is billed but not collected. In other words, these are collection issues like non-payment of bills and other revenue leakages.

According to the NERC, in its third quarter 2023 report, the aggregate ATC&C loss recorded across all 11 Discos was 39.45%, which comprised 20.91% in technical losses and 23.44% in commercial losses, and which is 19.39% higher than the allowed efficient loss target of 20.06%.

- **Inadequate Tariff Regime**

Industry players have reiterated the fact that electricity tariffs in Nigeria are not reflective of costs or service quality, and not affordable for low-income customers, thereby further widening the access gap.

- **Infrastructure Challenges**

Inadequate investment and vandalism of infrastructure hinder the reliable supply of electricity. Insufficient funds for the maintenance and expansion of critical infrastructure, such as power generation plants, transmission lines, and distribution networks, contribute to frequent breakdowns and disruptions in service delivery.

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2023 REFORMS

A quick dash at the historical evolution of legislative powers governing the electricity industry in Nigeria is pivotal to appreciating the most recent reform in the sector. A good starting point is the 1979 Constitution of the Federal Republic of Nigeria which explicitly granted States the authority, under Paragraph 14(b) of Part II of the Second Schedule, to enact laws regulating electricity within the States. However, despite this constitutional right, the States did not actively exercise this authority.

Similarly, Part 1 of the Second Schedule of the Constitution of the Federal Republic of Nigeria, 1999 (as amended), retains the States' power over electricity regulation under the Concurrent List, thus, allowing both the National and State Houses of Assembly to enact laws relating to the sector. However, the Federal Government of Nigeria has been the one predominantly exercising legislative authority over concerning electricity generation, distribution, and transmission, while the States had limited powers in areas not covered by the national grid system.

As earlier mentioned, that calls for reforms culminated in the enactment of the ESPRA in 2005, and it was followed by the unbundling of the former public monopoly by PHCN,

and finally, the privatisation of the successor companies in 2013. Despite these efforts, challenges persist across the entire value chain of the Nigerian Power Sector.

In response to the requests for new wave of legislative reforms, the amendments began with the signing of the "Electricity Constitutional Amendment" into law on March 17th, 2023, by the former President Muhammadu Buhari. This Amendment aims to address some of these challenges and empower states, companies, and individuals to engage in electricity generation, transmission, and distribution without relying on the national grid.

Building on this constitutional Amendment, President Bola Ahmed Tinubu wasted no time in swiftly assenting to the Electricity Act 2023 shortly after assuming office. This Act presents a crucial framework for the regionalization of the NESI and aims to foster increased private sector investments in the sector. It also aims to achieve several objectives including: consolidating all laws relating to the NESI, promoting regulatory measures to expand power transmission networks in Nigeria, establishing an Integrated National Electricity Policy, defining the functions of the NERC, introducing legal consequences for electricity offences, promoting generation from renewable sources amongst others. The timely enactment of this legislation addresses lingering concerns among stakeholders regarding the status of existing investments, the implementation of the law, and the overarching regulatory landscape.

REGIONAL ELECTRICITY AND SOME POTENTIAL BENEFITS FOR NIGERIA

Like the name implies, regional electricity involves decentralising decision-making and regulatory authority to states or regions within a country. Countries like Germany, Denmark, and the United States of America are just a few who have successfully implemented this system. Such a system promises increased reliability on state electricity and price stability, as it allows for a more diverse set of players and sources of electricity production. This model boasts of some benefits which include:

- **Regional autonomy in Addressing Specific Energy Needs**

The establishment of state-level regulatory bodies, as empowered by the Constitutional Amendments, can streamline the licensing process and ease the regulatory burden on the



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national regulator, thereby enhancing efficiency and effectiveness in the sector. However, operators might need to obtain licenses in different states if their operations extend beyond a state. This could potentially impact on costs, approval timelines and ultimately operations.

- **Customised Policies Aligned with Regional Challenges and Resources**

The liberty granted to states to make policies provides an opportunity to address inadequacies in electricity regulation, particularly in areas not served by the national grid within the states. The states regulations however, need to align with national objectives to avoid fragmentation, and ensure consistency to attract investors.

- **Creation of Regional Energy Markets for Competition and Efficient Pricing**

As a prelude to establishing new markets or improving the existing ones, states would need to conduct thorough technical and feasibility assessment of their electricity markets and infrastructures. As new Discos emerge, they may create competition with the existing Discos thereby providing consumers with greater flexibility and choice which improves the market.

- **Improved Transmission and Distribution Networks through appropriate Incentives**

With the states empowered to make laws on transmission of electricity, there is the potential for the establishment of intra-state and regional electricity transmission companies. This not only addresses the prior limitation of having only one transmission company serving the country, but also opens avenues for public-private partnership projects especially for areas not served by the national grid. However, establishing intrastate and regional transmission networks require significant financial commitments, therefore, the actualisation would require incentivising private participation such as ease in land acquisition and rights of way.

- **Formation of Public-Private Partnerships (PPPs) with Power Producers**

There is an anticipated significant increase in participation in the distribution and supply sector as the Act allows private investors to make investments in the existing transmission infrastructure. The success of public-private partnerships depends on effective collaboration and risk-sharing. The practicality relies on creating an environment conducive to private investment, ensuring regulatory clarity, and addressing potential bureaucratic hurdles.

- **Competitive Advantage for Renewable Energy Development**

Exploring renewable energy presents options for state governments in creating sustainable energy mix relying on competitive advantage availed by predominant

natural resources in the state. Harnessing this potential requires creating a supportive regulatory framework, addressing intermittency issues, and providing sufficient incentives for investors.

- **Creation of Opportunities for Energy Technology Start-ups**

States have the opportunity to take a first mover advantage in fostering Energy Technology Start-ups stimulating local manufacturing of electricity assets, such as meters, thus fostering job creation and economic growth.

WHERE DOES NERC FIT INTO ALL THIS?

As an independent regulatory authority since 2005, the NERC has been responsible for regulating the NESI. However, the recent constitutional amendment opened discussions on different regulatory models, including a super regulator, independent state regulators, or a collaborative framework with NERC and the states. The Act, however, provides clarity as to the role of the NERC in this new model.

- The NERC retains exclusive jurisdiction over interstate and transnational electricity distribution.
- The NERC is empowered to prevent anti-competitive practices by breaking up any undertaking that tries to establish a dominant position in the market.

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- States can establish their own state electricity regulatory commissions (SERCs), which are to collaborate with the NERC on national interests and inter-state coordination.
- NERC still has extensive regulatory powers, including rule-making, licensing, tariff determination, and compliance enforcement.
- NERC regulates electricity in states yet to pass their own electricity market laws.

- NERC oversees and regulates electricity generation and transmission in states without market laws.

POTENTIAL DRAWBACKS AND POSSIBLE SOLUTIONS

While a regional power system model can have several advantages, there is no perfect model and it is preferable to analyse the challenges so as to proffer solutions early on. These include:

- Harmonisation of roles and responsibilities between NERC and state regulators to avoid conflicts and overlaps in regulatory functions.
- Addressing regulatory fragmentation by establishing mechanisms for consistent policies, standards, and practices across regions.
- Development of regulatory frameworks that account for multiple-state coverage to ensure effective oversight and regulation particularly for Discos responsible for multiple states so as not to expose them to multiple regulatory regime, e.g. Abuja Electricity Distribution Company (AEDC) which cover the Federal Capital Territory and parts of Kogi, Nasarawa, and Niger state.
- Capacity building for state regulators to equip them with technical and financial capabilities to effectively regulate and monitor the electricity sector.
- Ensuring compliance of electricity projects with sustainable environmental practices, particularly for those involving renewable energy.
- Promoting collaboration among states and regions to optimise electricity resources and infrastructure utilisation.
- Addressing the high upfront capital costs and risks associated with developing off-grid and embedded generation projects by creating mechanisms to mobilize private investment and secure funding for decentralised electricity projects.
- Improving data collection and analysis on energy resources, demand patterns, customers' willingness to pay, and socio-economic impacts.

CONCLUSION

Despite the progress made and ongoing efforts, questions persist about the industry's current state, with the goal being to achieve a supply-demand balance and provide reasonable returns for investors in the value chains. Recent legislative advancements, such as the constitutional amendment and the new Act, present an opportunity to reshape the energy landscape with a regional electricity model that promotes competition, investment, policy flexibility, and renewable energy integration. These factors create a conducive environment ultimately leading to a more robust and sustainable electricity infrastructure.

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