Country Diagnostics Note and Policy Priorities

Nigeria

Acknowledgements

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Abbreviations

AEMP	Africa Energy Market Place
ATC&C	Aggregate Technical Commercial & Collection
BPE	Bureau for Public Enterprises
CDN	Country Diagnostic Notes
CFA	Chartered Financial Analyst
COREN	Council for the Regulation of Engineering in Nigeria
CPP	Country Priority Policies
CSR	Corporate Social Responsibility
DISCO	Distribution Company
DMO	Debt Management Office
EA	Electricity Act
ESG	Environmental, Social, and Governance
ETP	Energy Transition Plan
FEC	Federal Executive Council
FGN	Federal Government of Nigeria
GENCO	Generation Company
ICRC	Infrastructure Concession Regulatory Commission
IEDN	Independent Electricity Distribution Network
IRP	Integrated Resource Plan
ISO	Independent System Operator
MAF	Meter Acquisition Fund
MOFI	Ministry of Finance Incorporated
MYTO	Multi Year Tariff Order
NAPTIN	National Power Training Institute of Nigeria
NBET	Nigerian Bulk Electricity Trading Company
NCCC	National Council on Climate Change
NDPHC	Niger Delta Power Holding Company
NELMCO	Nigeria Electricity Liability Management Company
NEMSA	Nigerian Electricity Management Services Agency
NERC	Nigerian Electricity Regulatory Commission
NESI	Nigerian Electricity Supply Industry
NGF	Nigerian Governors Forum
NIEP-SIP	National Integrated Electricity Policy and Strategic Implementation Plan
NISO	Nigerian Independent System Operator
NSCDC	Nigerian Security and Civil Defence Corps
NWM	National Wholesale Market
PCAF	Power Consumers Assistance Fund

PIP	Performance Improvement Plan
PPP	Public Private Partnership
RE	Renewable Energy
REA	Rural Electrification Agency
REFIT	Renewable Energy Feed in Tariff
SEM	State Electricity Market
TCN	Transmission Company of Nigeria
TSP	Transmission Service Provider

Purpose of This Document

The Country Diagnostic Note and Policy Priorities document is developed to facilitate dialogue at the AEMP 2024. This policy dialogue is focused on providing policy recommendations for the power sector in Nigeria. Taking bearing from series of engagements and power sector roundtables, the discussion of issues that need to be addressed in the power sector have been summarized in the diagnostic note section of this document. Section two is a compilation of policy recommendations to address these issues highlighted in section one.

These policy recommendations have come out of an extensive engagement with power sector professionals, during a series of online technical sessions held over three days, April 15 – 17, 2024 to discuss policy options under the 6 themes of; (i) Sustained NESI recapitalization, (ii) Universal energy access and reliability, (iii) Wholesale electricity market, (iv) State electricity market, (v) Climate change, low carbon economy, and just energy transition, and (v) Human capital and national content development.

The draft priority policies document was used to implement the main event of the AEMP 2024 policy dialogue which took place May 16 – 17, 2024 in Abuja, Nigeria. The Honourable Minister of Power, who hosted the policy dialogue led the event towards decision-making around these recommended policies and this helped achieve the refinement of the policy recommendations. These refined policy recommendations are going to be put forward to the Federal Executive Council (FEC) for approval as part of the National Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP) document for the power sector.

About the Africa Energy Market Place

The Africa Energy Market Place (AEMP) is the African Development Bank Group's flagship annual forum, showcasing investment opportunities within the continent's energy sector. It acts as a nexus for stakeholders to engage in policy discourse, evaluate regulatory challenges, explore investment delivery models, and propose solutions to barriers that inhibit the scaling up of investments. The platform brings together key players from African governments, the private sector, and development partners to exchange insights and collaborate on targeted themes, aiming to eliminate investment barriers. This is achieved by identifying and prioritizing sector reforms, including national and regional priority projects, essential for attracting investments. To date, the Bank Group has organized seven editions of the AEMP, bringing onboard 24 countries as members, thereby reinforcing its role as a key partner in energy policy dialogues across Africa.

Section 3 of the Electricity Act, 2023 (EA-2023), mandates the Federal Government (FG), operating through the Federal Ministry overseeing power, to draft and publish the Nigeria Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP) in the Federal Gazette within a year of the Act's commencement. This process involves consultations with relevant government bodies and stakeholders and requires periodic review at intervals not exceeding five years. The NIEP-SIP will serve as a guide for Nigeria's energy development, addressing areas such as universal access to electricity, public-private partnerships for investments in the power sector, bulk trading of electricity, and management of local distribution in within State boundaries, among other pertinent aspects as directed by the FG. In alignment with this legal mandate, the Federal Ministry of Power has initiated the development of the NIEP-SIP, as required by EA-2023, aiming to address industry challenges and capitalize on opportunities identified during a comprehensive two-day retreat in December 2023.

The 8th edition of the AEMP is being implemented in partnership with the Federal Ministry of Power as a two-part event dedicated to Nigeria. The first part consisted of a series of online technical sessions which took place virtually from April 15–17, 2024, and the second part, the main event, featuring executive panel sessions, was held in-person from May 16 – 17, 2024. The theme for the 8th edition of the AEMP is "Towards Nigeria's Sustainable Energy Future: Policy, Regulation, amd Investment – A Policy Dialogue for the National Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP)." This theme is designed to advance policy dialogue towards concrete policy recommendations, enabling the development of the NIEP-SIP, a process that began with the Ministerial Power Sector Retreat (MPSR) in December 2023.

This document is made of two sections: a Country Diagnostic Note (CDN), which provides an overview of the Nigeria electricity sector and its main challenges and a Country Policy Priorities (CPP), which summarises the key policy reforms recommended for implementation.

In producing the CDN and the CPP, TBI included insights from the Consultation Paper of the Ministerial Power Sector Retreat (MPSR) in December 2023, the roundtable with State Governments and Distribution Companies (DISCOs) organized by the Rural Electrification Agency (REA), stakeholder engagements on the Electricity Act 2023 (EA-2023) by the Nigerian Electricity Regulatory Commission (NERC), the USAID Power Africa Nigeria Power Sector Program (PA-NPSP) End-to-End assessment report, and the communique from the Nigeria Electricity Supply Industry (NESI) Market Participants and Stakeholders Roundtable, supported by the AfDB.

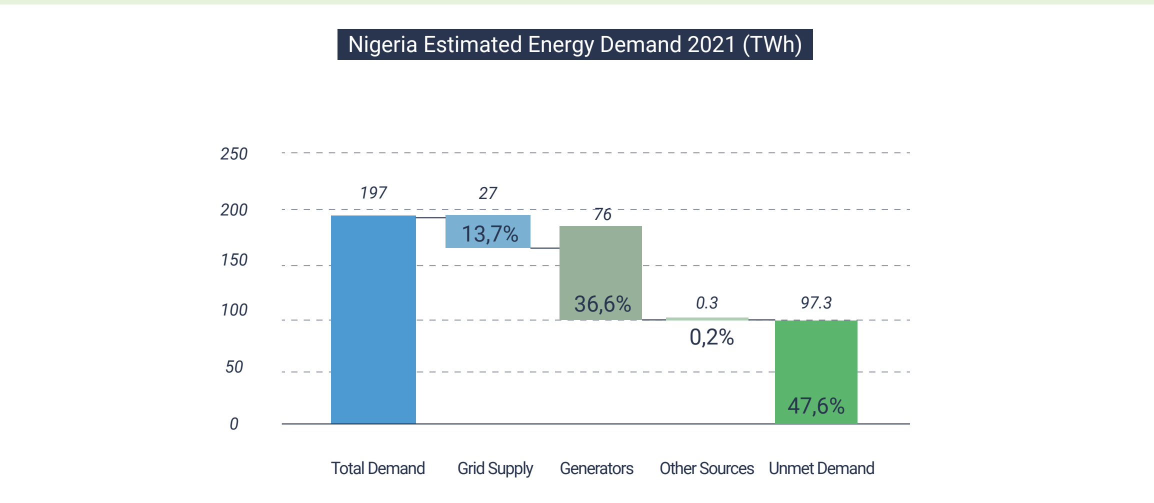
Executive Summary

Market Overview

Nigeria's electricity consumption on the national grid from the report from the Nigerian Electricity Regulatory Commission (NERC) was estimated at about 36.7 TWh in 2023, translating to an average available generation of 4.2GW of the total generation capacity of 13 GW. The total electricity consumption in Nigeria in 2023, inclusive of off-grid (self-generation) and on-rid was estimated at 77.5TWh which translates to an electricity generation of approximately 9 GW, with 41% of the electricity consumed on-grid and 59% off-grid. This means that if the installed generation capacity on the grid (13 GW) was available it should be sufficient to meet the total on-grid and off-grid electricity consumption (9 GW) for 2023, but this does not include the population without access to any form of electricity. According to the World Bank, total electricity demand for Nigeria was estimated at 17 GW in 2020 assuming 100% connection rate, and this is projected to increase to 46 GW by 2030 with projected 100% electrification and enhanced economic activity. With nearly 80% of installed generation capacity coming from gas-fired power plants, availability of gas supply remains a major challenge due to gas pipeline vandalism, unpaid gas supply invoices of over $1 billion, and absence of active gas supply contracts in the market. Nigeria is estimated to lose billions of dollars annually from gas pipeline vandalism. Specifically, a report from the Nigeria Extractive Industries Transparency Initiative (NEITI) suggests that oil and gas losses from pipeline vandalism have cost the country over $42 billion in the last decade.

Renewables currently account for 11.5% of generation, with potential to grow to 27.3% within a decade if planned projects come online. There is a strong focus on increasing renewables in the energy mix as contained in the Nationally Determined Contributions (NDCs) and the approved Energy Transition Plan (ETP), which seeks to achieve carbon neutrality (net-zero) by the year 2060. Nigeria has a high potential for solar power generation due to its abundant sunlight and strategic geographic location. According to estimates by the Energy Commission of Nigeria (ECN), the country's solar energy potential is immense, estimated at over 100 GW, which is significantly more than the current energy demand of the entire nation as seen in Figure 1.

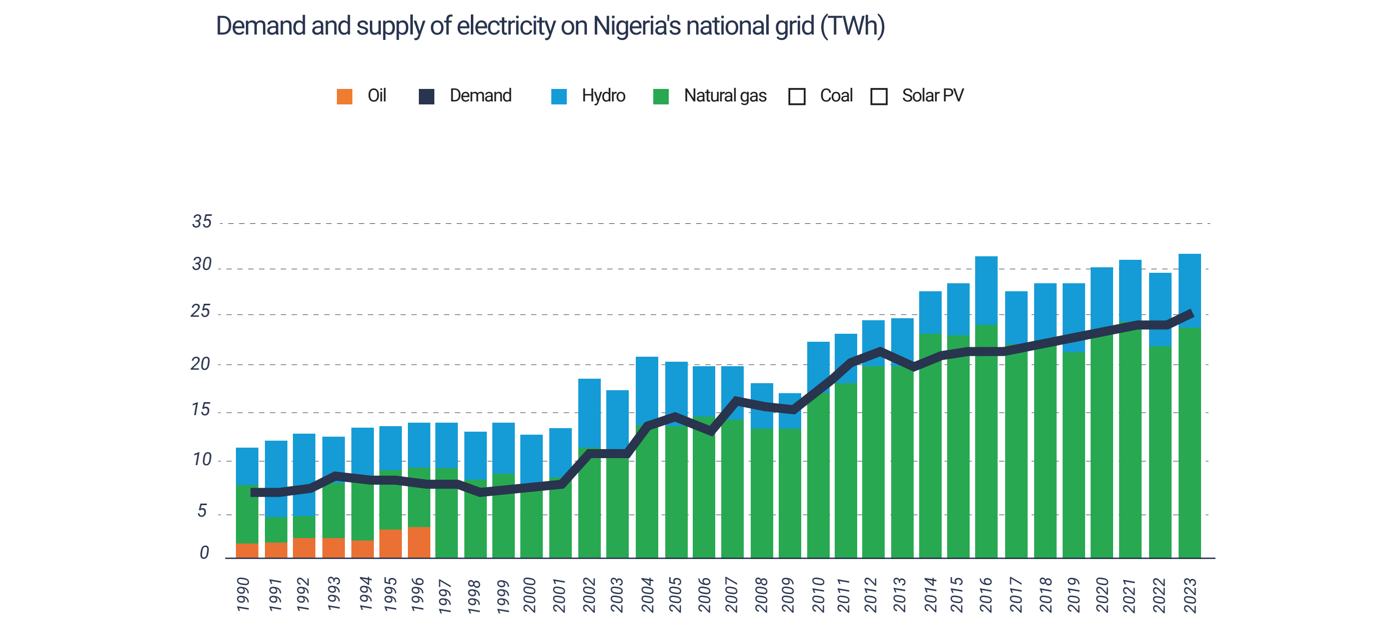
FIGURE 1 - ELECTRICITY DEMAND IN NIGERIA (SOURCE: NERC, IEA & WORLD BANK DATA)



Source: Adapted from SAPP Annual Reports 2015-2021.

The demand and supply on the national grid in 2023 were a total of 30TWh and 36TWh respectively, representing a loss of about 6TWh (17%) of electricity generated and transmitted to distribution companies (DISCOs) over the period of one year. This does not factor loses at the distribution level that is due to poor infrastructure and energy theft. At the distribution level, judging by the energy billed and collections made, there is a further 27% loss (10TWh). These loss levels are largely responsible for the poor liquidity in the electricity market that has led to poor payment discipline. The loses and unpaid tariff subsidies starved the electricity market of over N1 trillion in 2023.

FIGURE 2 - NIGERIA NATIONAL GRID DEMAND AND SUPPLY (SOURCE: NERC, IEA, & WORLD BANK DATA)



Source: Adapted from NERC, World Bank, and IEA data, 2023

The Transmission infrastructure (high voltage lines and substations) is rated at an operational capacity of around 8,100 MW from simulations (not historic operations), which is insufficient for total electricity demand of 197TWh (22 GW) as of 2021 even if the generation was available. According to reports from the Nigeria Electricity Regulatory Commission (NERC), the grid consistently experienced frequency instability. The transmission network has struggled with aging infrastructure, leading to frequent breakdowns and insufficient capacity to meet growing demand. By the estimates of the International Energy Agency (IEA) the power sector requires an investment of $190 billion to bridge the gap between demand and available supply. Initiatives like the World Bank's Nigeria Electricity Transmission Project and AfDB's Nigeria Transmission Expansion Project, among others aims to enhance transmission capacity and reliability.

A 2021 assessment of distribution assets by a BCG led consortium done as part of the performance agreement review exercise of the Bureau for Public Enterprise (BPE) revealed that 21% were defective of the 60% of assets that had compliant data, highlighting the distribution segment as the most critical point for intervention in electricity market reforms. The total number of registered customers in NESI as of December 2023 is about 13.2 million with a metering penetration rate of 44%. Bridging the metering gap, which is over 5.8 million is essential to reduce losses and improve the liquidity situation of the sector. The Presidential Metering Initiative (PMI) being implemented aims to close the metering gap within the next 3 years.

The NESI faces several financial challenges, particularly around tariff management, recapitalization, and financial viability:

• The tariffs that consumers pay for electricity do not reflect the actual cost required for the electricity value chain to viably run its operation. This discrepancy creates revenue shortfalls (tariff shortfalls), which the government is expected to budget and pay-off as electricity subsidy, and in most cases, this is not fully done. In 2023, the unpaid tariff shortfall was over N276 Billion and over N800 Billion had accrued in the first-four months of 2024. Only N450bn is budgeted for electricity subsidies in 2024 but projected tariff shortfall is over N2Trn due to FOREX and inflation volatility. Licensees (DISCOs, GENCOs and TCN) require substantial recapitalization to upgrade infrastructure, reduce technical losses, and improve collection efficiency. However, financial constraints and regulatory issues have limited their ability to attract new investments.

• Poor metering and billing practices lead to high collection losses for the market, while the transmission network's instability has kept critical C&I customers off the grid, further worsening the financial viability of the sector.

• DISCOs have accumulated significant debt due to their inability to pay GENCOs and TCN on time. This has created a cycle of debt and mistrust, further eroding the financial stability of NESI.

Nigeria is ranked among the countries with the highest electricity access problem in the world. Out of a population of about 220 million, over 80 million Nigerians still lack access to electricity. Overall access rate stands at 59%, with urban areas at 89% and rural areas at 26%. The northern regions exhibit the lowest access rates, ranging from 29% to 54%, while the south averages around 70%.

The Electricity Act, 2023 (EA-2023)

The electricity market in Nigeria has witnessed a paradigm shift with the enactment of the Electricity Act 2023, which aims to transform the sector by creating new wholesale and state electricity markets. It emphasizes transitioning to a multi-buyer/ multi-seller framework and enhancing capacity for supply-demand balancing. To facilitate the effectiveness of the proposed markets the Act provides for the splitting of the Transmission Company of Nigeria (TCN) into an Independent System Operator (ISO) and a Transmission Service Provider (TSP). This is intended to improve operational efficiency and reliability of supply on the grid. The ISO is tasked with generation and transmission scheduling, outage coordination, and transmission congestion management, among other responsibilities. TSP will manage the network assets and make required investments for expansion and reinforcements required to balance supply and demand.

The Act calls for a comprehensive Nigeria Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP) to be published within a year, to provide the needed direction for the implementation of the various provisions in the Act. Considering the EA-2023 and for a more competitive and effective NESI, critical policies would need to be implemented to attract investments while enhancing market effectiveness and consumer protection. Key policy recommendations for the NESI have been identified through various consultation processes involving all the key public and private stakeholders, culminating with the organization of the 8th AEMP policy dialogue for the NIEP-SIP. The policy recommendations are categorized into six thematic policy areas:

1. Sustained NESI recapitalization

2. Universal Access, Capitalization and Reliability

3. The National Wholesale Electricity Market

4. State Electricity Markets

5. Climate Change, Low Carbon Economy and, Just Energy Transition

6. Human Capital and National Content Development.

A total of 86 policy actions have been recommended through the policy dialogue that happened on the AEMP platform aimed at improving various aspects of the power sector under the six policy areas outlined above.

Highlights of Country Policy Priorities

A further refinement of the policy recommendations during the AEMP policy dialogues brought out 14 policies areas considered as top priority, which represent a consensus of the policy actions that need to be taken to move the sector towards viability. The Honourable Minister of Power, Chief Adebayo Adelabu along with key stakeholders, discussed the various policy options in six executive panel sessions during the AEMP policy dialogue. After thorough deliberations, there was consensus around the following policy recommendations with a resolve to pursue their conclusive implementation. These also represent the communique that came out of the AEMP policy dialogue, which was read by the Honourable Minister of Power at the closing event.

1. Firm Contract for Secured Service Supply and Payment Assurance:

a. Payment discipline must be strengthened further in the NESI by ensuring that firm contracts are in place and adhered to, starting with the Gas Supply Agreements (GSAs) all the way to the service delivery contracts with end users. All regulators (NMDPRA, NERC, State Regulators, and West African Power Pool Regulator) should collaborate to ensure contracts are adhered to, fail safe measures put in place for defaults, and penalties are prescribed and take effect where the conditions are met. Payment discipline will be enhanced with the Federal Government of Nigeria fully clearing the existing liabilities linked to tariff shortfall that has accumulated and not fully funded. There must be a cut-off date set to clear the outstanding, and a mechanism that would meet payment obligations going forward.

b. Decouple the gas pricing such that locally originating components are priced in Naira and not indexed to the US Dollar. A committee of the NERC, Ministry of Power, Ministry of Petroleum Resources and Ministry of Finance should be established to decide on how this can be achieved in an equitable manner.

Timeline: Short term (1 – 2 years).

2 . Universal Electricity Access Goals:

a. The Rural Electrification Agency, working with State Governments, should roll out a detailed electrification plan focusing on decentralized renewable energy systems for remote areas. These first-time electrification plans should be the key reference document for allocating universal access projects in communities with the plans updated regularly and providing geo-spatial information and accessible online so that communities can be matched to the most relevant energy sources and aligned with grid expansion plans and ongoing interconnected mini-grid development.

b. State Governments should set up electricity management committees in communities to take responsibility for the management of electricity supply assets within their communities such as lines and distribution transformers. This committees will have the mandate of monitoring the assets for vandalism and energy theft and participating in asset maintenance exercises.

c. State regulators should work with electricity management committees to organize regular townhall meetings in communities to promote the awareness of electricity as a commodity to be paid for and the responsibility of consumers in the electricity supply process.

d. To reduce collection loses and encourage cost recovery for energy delivered to remote communities and enhance electrification efforts, regulators and electricity management committees should improve on the enforcement of payments only through approved payment systems for revenue security in the electricity markets.

e. State Governments should work with development partners to prepare projects for electricity supply within their states to an investment-ready or turnkey stage for investors to take up, including applying viability gap funding mechanisms for rural areas. The prepared projects should have key elements secured such as land, permits, licenses, right-of-way, and offtake arrangements.

Timeline: Short term (1 – 2 years).

3. Investment Risk Mitigation Mechanisms:

a. NERC and State regulators should keep a risk register that is built from an annual risk audit of the electricity market to ensure risks are identified and addressed swiftly.

b. The State and Federal governments should work with local commercial banks and Multilateral Development Banks (MDB) to create innovative risks instruments tailored to the Nigerian Electricity Supply Industry (NESI) such as guarantees, or insurance schemes, to mitigate investment risks different from the traditional sovereign guarantees.

c. The Central Bank of Nigeria (CBN) should create a special window for access to FOREX to fund NESI infrastructure investments.

Timeline: Short term (1 – 2 years).

4. Nigeria Electricity Supply Industry (NESI) Licensee Recapitalization:

A recapitalization of the Nigeria Electricity Supply Industry (NESI) to trigger the issuance of new shares and attract fresh capital to bolster the balance sheets of licensees, especially DISCOs and GENCOs. This aims to reduce ATC&C losses and recover installed generation capacity, which is a priority for the sector. It is expected that shareholders unable to respond to cash calls will either be diluted or have the option to divest their shareholding.

Timeline: Medium term (3 – 5 years).

5. DISCO Sub-franchising Plan Requirement:

The regulatory provisions for sub-franchising should be enhanced to drive DISCOs to embrace sub-franchising as a means of improving the distribution and supply side of the NESI. This can be through a NERC order to DISCOs to submit a binding franchising plan to attract investment for loss reduction and improved service delivery, learning from existing franchising models. This plan should be along state lines in consideration of the developing multi-tiered electricity market.

Timeline: Medium term (3 – 5 years).

6. Data Centralization and open access:

a. The many data points in the NESI must be harmonized to have one source of truth for decision making. The governance of data in the NESI must ensure ease of access to data, integrity in the reporting of data, and prohibit data hoarding.

b. The efforts to build a web-based data aggregation centre be accelerated to ensure data is available for decision making by market participants and performance monitoring by the regulators. This is also needed to ensure transparency to the public.

c. Automation of licensee operations should be mandated to support automated data collection and reporting. Automated data management should be made a performance metric in the NESI

Timeline: Medium term (3 – 5 years).

7. New Sources of Finance

NERC and State regulators should integrate global reporting and governance standards such as Environmental, Social, and Governance (ESG) reporting for NESI licensees. Corporate governance of licensees, regulatory consistency including price regulation, and discipline with payment and contracts must be strengthened with Federal Government full support, which will encourage financial institutions to invest in the NESI leveraging new sources of financing for the power sector such as the Green Climate Fund (GCF).

Timeline: Medium term (3 – 5 years).

8. State Electricity Markets:

a. State governments, through the Nigerian Governors Forum (NGF) should consider setting up a stakeholders' forum with transition support from NERC to accelerate the learning curve for new state regulation. This will also help achieve standardization that will support the interrelationships among the various electricity markets in the country.

b. With a gradual transition to State electricity markets, which will be focused on consumer engagements and protection, the States should commission a comprehensive review of the metering gap within their jurisdictions and develop a plan to close this gap in collaboration with DISCOs, end-users, local manufacturers, other metering vendors, and financial institutions.

Timeline: Medium term (3 – 5 years).

9. Consideration of Integrated Resource Plans (IRPs) and Energy Transition Plans (ETPs):

a. States should develop and operationalize IRPs as a recommended starting point for the state market. The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve this working with development partners.

b. IRPs and ETPs should be the basis for how generation capacities are procured, and generators and suppliers licensed, by approving only license requests that are aligned to the IRP and ETP.

Timeline: Medium term (3 – 5 years).

10. Third-Party Investment Recognition:

NERC should create awareness on the processes in place to recognize investments by third parties, including customers, and provide a transparent mechanism for cost recovery. Forms and reporting processes should be put in place for individual and communities to report all network investments to the network operator keeping NERC informed. Approval for such projects should be based on principles of need and efficient use of resources.

Timeline: Medium term (3 – 5 years).

11. TCN Infrastructure Projects:

a. TCN to assess its Performance Improvement Plan (PIP) to develop a transparent and well-defined financing plan that outlines the scope of investment required, estimated costs, and expected outcomes in each State's region. An embargo should be placed on commissioning new projects for a period to prioritize completion of existing projects.

b. TCN should engage domestic and international financial institutions, including private investors, to come up with innovative and performance based financing mechanisms for the funding of infrastructure projects such as bonds, equity investments, and public private partnerships, providing clear guidelines, incentives, and risk-sharing mechanisms to attract investors.

Timeline: Medium term (3 – 5 years).

12. Grid Supply Reliability and Integration of Renewable Energy Technologies:

a. TCN supervised by the Federal Ministry of Power should conduct a renewable energy grid integration study to establish a clear outlook of the phases of renewable energy technologies integration to the grid in terms of capacity scenarios, timing, operational requirements, and technology solutions for stable grid operation.

b. The establishment of the Independent System Operator (ISO) is critical and should be completed to provide much needed confidence to market participants. The governance structure of the ISO should ensure the presence of all key stakeholders (generators, transmission entities, distributors and consumers), while preserving transparency and effective independence from market participants. Full autonomy in the governance of the ISO should be encouraged if it can lead to faster decisions, at lower cost and does not open the door to monopoly abuse. However, such autonomy should be combined with regulatory backstops in rule changes, dispute resolution and market surveillance.

Timeline: Medium term (3 – 5 years).

13. Climate Change and the Just Energy Transition:

a. The Federal Ministry of Power should be responsible for updating the power components of the energy transition plan, facilitated by an intra-sectoral coordination mechanism.

b. NERC should consider introducing a clean energy levy on tariffs to fund activities such as research and development, technology transfer, and capacity building to facilitate a well- managed transition to renewable energy technologies.

c. The State Government should site large scale commercial and industrial projects in rural communities for the creation of substantial economic activities to improve the viability of communities for mini-grid projects.

d. There is a need for coordination and collaboration among various stakeholders at the subnational level. Government bodies, communities, NGOs, and businesses can work together to address climate challenges more effectively, and more importantly to reduce carbon footprints adding up to meeting the Nationally Determined Contribution. Support and stakeholders' engagement programs is key to ensure inclusive participation and shared responsibility of climate action.

e. The Federal Ministry of Power should champion the collaboration between subnational and national governments. Subnational climate action plans and policies would be more effective when they align with national climate goals and strategies. To achieve this, mechanisms for communication, coordination, and information-sharing should be established or strengthened.

f. Subnational governments should conduct comprehensive assessments of their local vulnerabilities and opportunities related to climate change and develop action plans and policies that are context-specific around the increased use of renewable energy sources, and improvements in energy efficiency to contribute to a low-carbon economy. Flexibility in policy design and implementation allows for the accommodation of local circumstances, thereby increasing the likelihood of success.

Timeline: Medium term (3 – 5 years).

14. Capacity Building and National Content Development

a. As a baseline, NAPTIN should work with NERC to do a skill gaps and appropriateness survey as a basis for the recalibration of the capacity building frameworks such as what is available at NAPTIN and others such as the Fit-and-Proper guidelines of NERC.

b. NAPTIN should be tasked to develop and implement a capacity building program to up-skill the power sector workforce in renewable energy thematic areas such as solar system design, development, and maintenance, and manufacture and assembly of photovoltaic modules, power inverters and batteries. This is intended to ensure that the workforce is equipped for a transition to new energy technologies and the future electricity market.

c. The Federal Ministry of Power should implement a business development program to support start-ups and small businesses in breaking into the global renewable energy value chains. This support should be focused on business incubation and acceleration for relevant energy related businesses to pivot into renewable energy services.

Timeline: Long term (> 6 years).

These proposed policies represent a strategic move towards modernizing Nigeria's electricity sector, improving service delivery, enhancing regulatory frameworks, and meeting the nation's energy needs sustainably. The Ministry of Power has committed to continue the engagement to ensure the successful implementation of these policies.

SECTION 1:
Country Diagnostic Note

GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT
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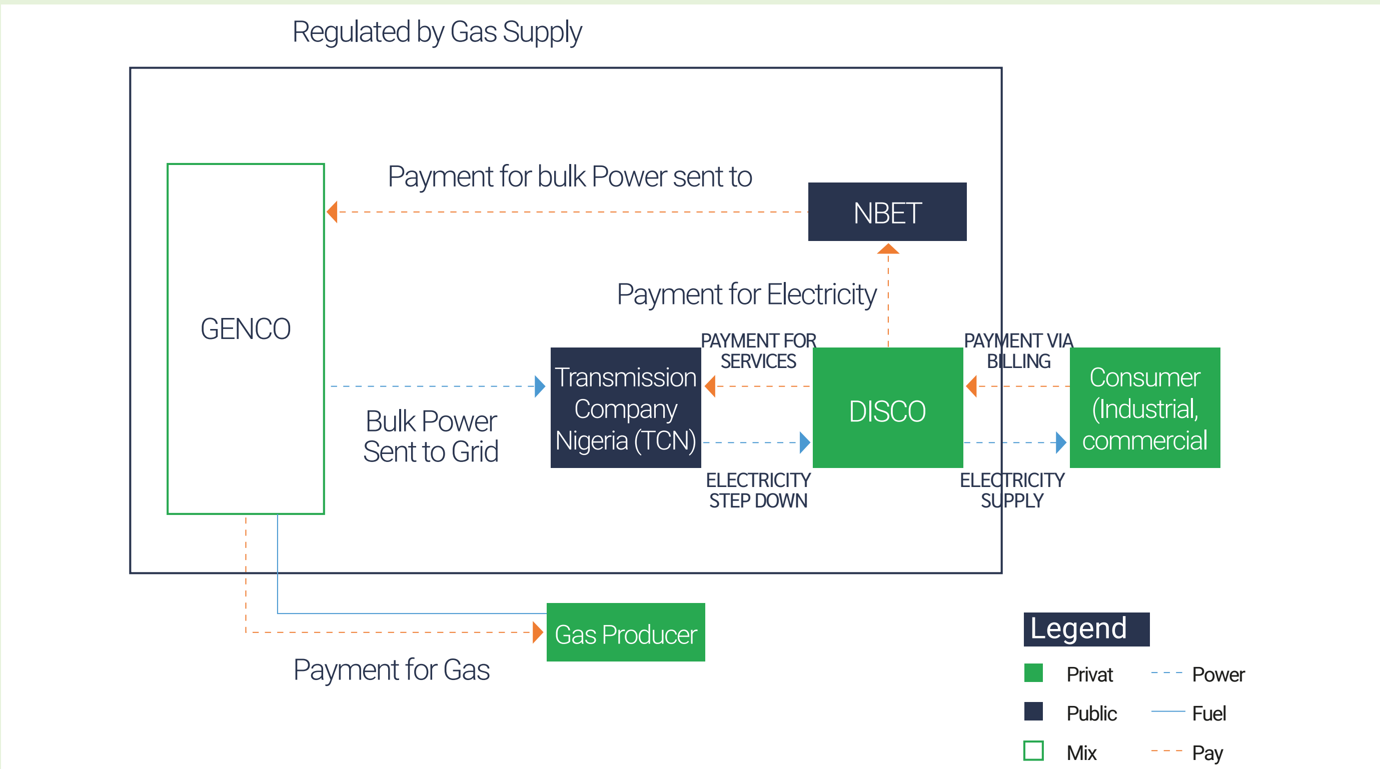
Institutional and Regulatory Framework

The EA-2023[1] outlines a vision for the electricity sector's transformation, introducing new markets and expanding roles for additional participants. Among these innovations is the Wholesale Electricity Market (WEM), which is based on the fundamental concept of trading generated electricity before it is delivered to the end users. The principal entities in this market are the generating companies and electricity suppliers. This arrangement anticipates that electricity suppliers either provide directly to their customers, in the case of vertically integrated suppliers, or sell to traders responsible for distribution to the end-user. A crucial aspect of the WEM is the balancing of demand and supply.

Operational models for a WEM vary, primarily distinguished by the types of products created (such as spot markets or futures and forwards) and their respective pricing strategies. Up until the EA 2023 was ratified, the NESI largely operated as a WEM with a single bulk buyer, NBET, which acquires all generation capacity by signing Power Purchase Agreements (PPAs) with the Generating Companies (GENCOs) and sells to Distribution Companies (DISCOs) through vesting contracts, as well as to large consumers and international clients. Adjacent to this single seller/ buyer system is the eligible customer trading model, which enables GENCOs to sell directly to large customers, facilitated by the Transmission Service Provider (TSP).

FIGURE 3 - NESI MARKET STRUCTURE SHOWING FLOW OF FUELS, ENERGY, AND PAYMENTS.



The envisioned transition towards establishing the WEM, in comparison to the current setup, necessitates the development of systems to transition from a singular buyer/seller framework to a market with multiple sellers and buyers. This change requires significant investments in the grid to enhance its capacity for supply and demand balancing, a critical prerequisite for transitioning to the WEM. Such advancements must be underpinned by supportive policy directives. Despite some progress, movements towards reform have not been sufficient to effect significant directional changes. The sector continues to struggle with liquidity issues, insufficient private sector investment and participation, inefficient operations, unreliable service delivery, and suboptimal utilization of resources and assets.

The NESI is facing a severe liquidity crisis, with a net sector liability estimated at over NGN 2 trillion[2] as at year end 2023. This is due to a combination of factors, including:

1. **DISCOs' challenged profitability:** Distribution Companies (DISCOs) are struggling to collect sufficient revenue from customers to cover their costs. This is due to several factors, including low tariffs, energy theft, and aggregate technical, commercial and collection losses.
2. **Historical tariff shortfalls:** The tariffs paid by consumers have not been sufficient to cover the cost of electricity generation, transmission and distribution, resulting in a significant shortfall. This shortfall has been exacerbated by the government's reluctance to allow tariffs to rise to cost-reflective levels.
3. **Unsettled liabilities from government agencies:** Government Ministries, Departments, and Agencies (MDAs) at both Federal and State level have accumulated significant debts to the power sector, further contributing to the liquidity crisis.

The liquidity crisis is having a cascading effect across the entire value chain, making the sector unattractive for new investment. This is a major obstacle to the sector's progress and is hindering efforts to improve electricity access and reliability.

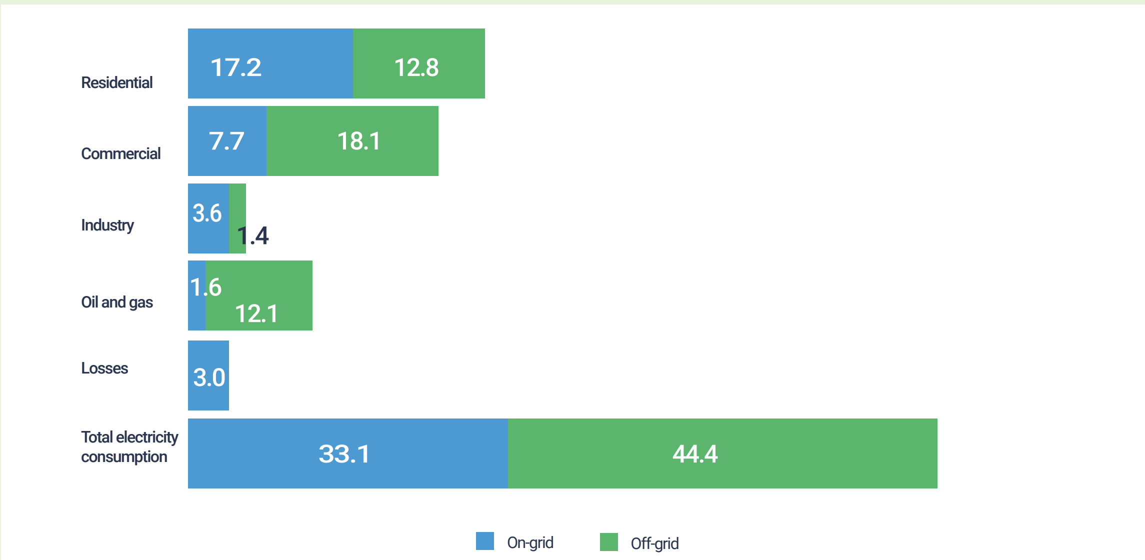
To address the liquidity crisis, the government is exploring a combination of funding options, such as budgetary allocations, leveraging sequestered NESI VAT, issuing of promissory notes, and a market recapitalization exercise. However, these measures in themselves are unlikely to be sufficient to resolve the crisis in a sustainable manner. More fundamental reform is needed to address the root causes of the liquidity crisis, such as improving DISCOs' collection efficiency, allowing tariffs to rise to cost-reflective levels, and resolving outstanding government debts.

Demand & Supply

It is estimated that approximately 80 million Nigerians lack access to modern, reliable, and sustainable electricity[3]. Nigeria aims to achieve universal electricity access by 2030, yet progress has been notably slow. The Nigeria Electrification Project (NEP), supported by the AfDB, the World Bank, among other development partners, stands as the primary initiative addressing this goal[4]. However, the rate of electrification is outpaced by Nigeria's population growth, resulting in negligible net increases in electrification coverage.

In 2021, Nigeria's electricity demand was estimated at about 77.5 TWh, translating to a generation capacity requirement of approximately 9 GW[5] (as illustrated in Figure 2). This figure encompasses demand met by both on-grid and off-grid sources and excludes populations without any form of electricity access. The World Bank's projections for Nigeria's total demand, based on prevailing and anticipated economic activities, are 17 GW by 2020, 29 GW by 2025, and 46 GW by 2030[6].

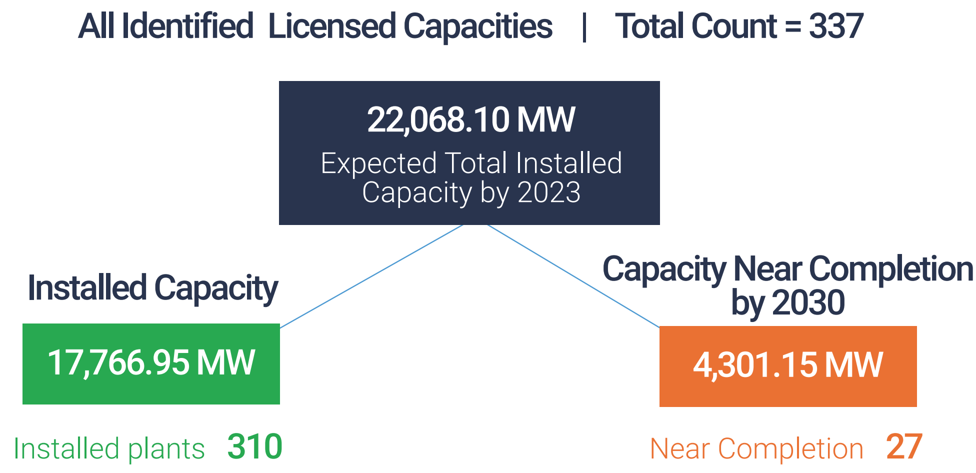
FIGURE 4 - ELECTRICITY DEMAND IN NIGERIA BY SECTOR IN 2021, TWH



Source: Nigeria Energy Transition Plan

While it's often stated that grid-connected capacity is around 13 GW, a more comprehensive understanding is crucial for planning and development. Recognizing the available captive and embedded generation that can be connected to the grid to enhance supply shifts the focus from procuring new generation to optimizing capacities that are already existing. This perspective adjusts the "grid-connected capacity" figure to 17.8 GW. Considering on-grid, captive, and embedded plants that are over 80% complete and expected to become operational soon, the capacity is projected to increase to 22 GW, according to data from NERC[7].

FIGURE 5 - INSTALLED GENERATION CAPACITY

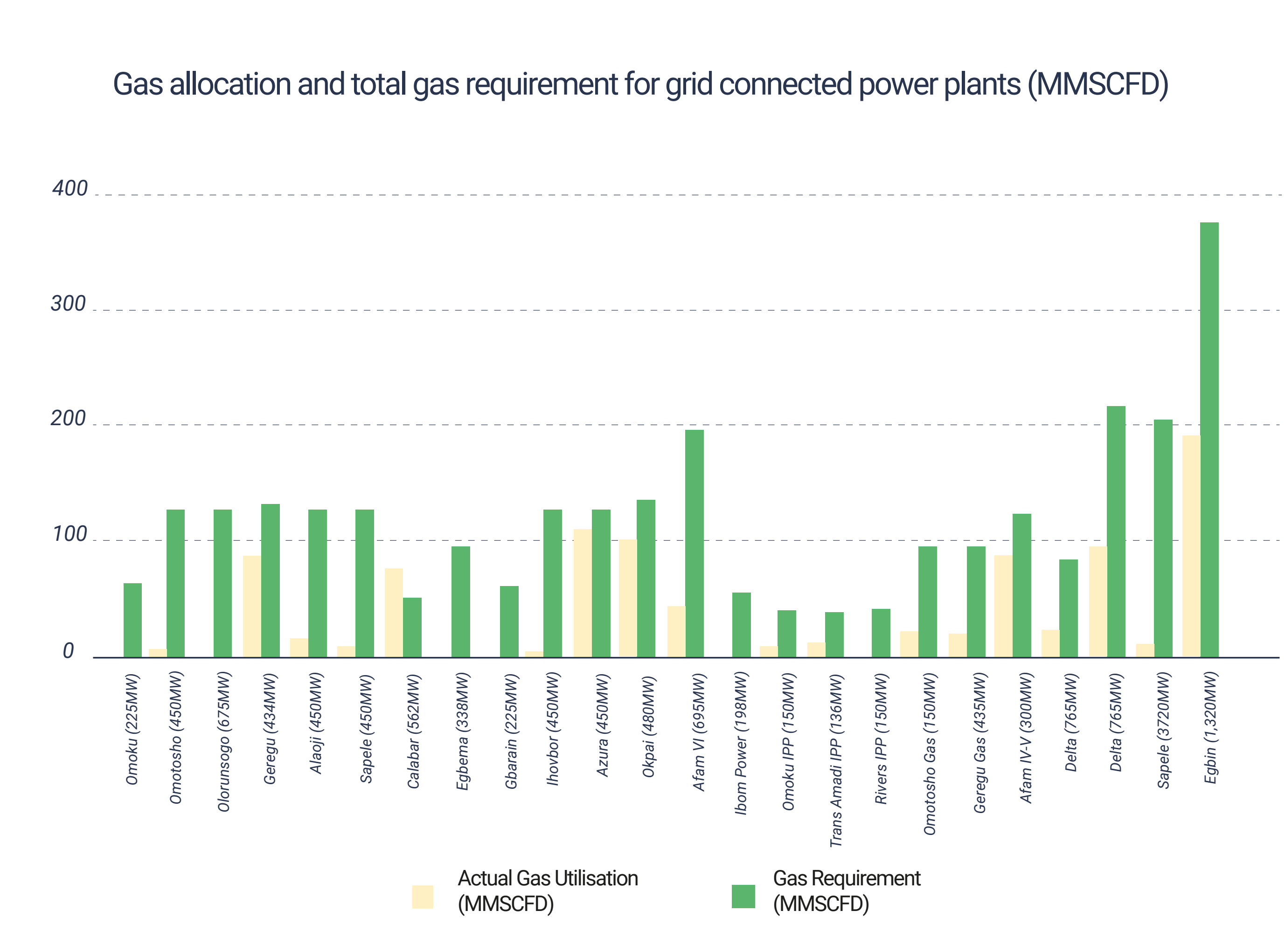


Plant Type	COUNT	INSTALLED CAPACITIES (MW)	AVAILABLE CAPACITIES (MW)	OPERATIONAL CAPACITIES (MW)	COUNT	CAPACITIES NEAR COMPLETION (MW)
Grid	28	13,205.90	7,661.25	5,052.75	13	2,875.75
Captive	226	4,011.78	3,719.87	2,841.19	12	1,276.90
Embedded	16	549.27	385.62	189.02	2	148.50
TOTAL	**310**	**17,766.95**	**11,666.74**	**7,722.96**	**27**	**4,301.15**

Source: PSRCWG Revision of NESI Baseline Indices

Given the significant portion of gas-fired generation within the grid capacity, addressing gas supply issues is vital for sector reform. On average, gas-fired plants connected to the grid access only 33% of the gas needed to operate at installed capacity[8], reflecting grid generation capacity utilization estimates as shown in Figure 4. The absence of firm Gas Supply Agreements (GSAs) and poor settlement of as invoices has prevented gas companies from allocating sufficient gas to generation companies.

FIGURE 6 - GAS ALLOCATION VERSUS GAS VOLUME REQUIRED FOR POWER AVAILABLE CAPACITY



Source: APGC

Moreover, transitioning the generation mix towards renewable sources is evident, with current renewable generation at 11.5% and potentially increasing to 27.3% within a decade[9], assuming all licensed generation plants commence operations as planned. This should be factored into the development of the IRP and ETP, considering the existing and future generation mix.

FIGURE 7 - GENERATION MIX BASED ON FUEL SOURCES

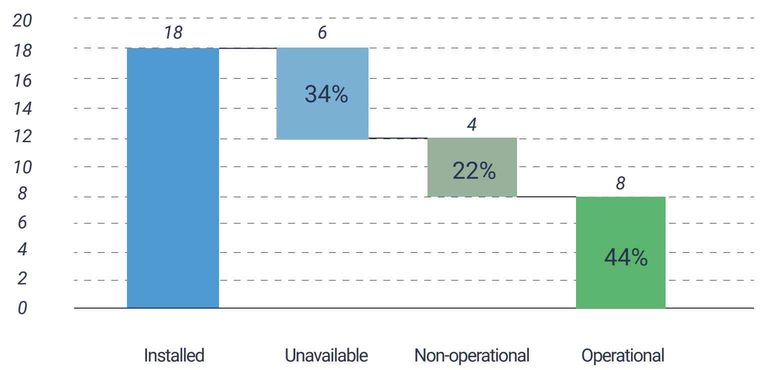
Fuel Source (Installed Plants)	CAPACITY (MW) GRID	CAPTIVE	EMBEDED	OVERALL
Gas	9873.4	3461.3	500.5	77.87%
Coal	0	0	0	0.00%
Diesel	0	110	0	0.82%
Hybrid	1345.5	410.6	18.8	9.99%
Hydro	1978.4	0	30	11.20%
Solar	0	29.9	0	0.17%
Wind	8.5	0	0	0.05%
TOTAL	**13 205.9**	**4011.8**	**549.3**	**100%**

Fuel Source (Yet-to-be-Installed Capacities)	CAPACITY (MW) GRID	CAPTIVE	EMBEDED	OVERALL
Gas	27994.6	4731.9	1511	61.78%
Coal	4415	16	600	0.08%
Diesel	0	1.6	0	0.00%
Hybrid	654	179	165	1.80%
Hydro	3095	65	51	5.79%
Solar	6828	4629.4	273	21.17%
Wind	108.5	101	0	0.38%
TOTAL	**43 095.1**	**9723.9**	**2600**	**100%**

Source: Powered Sector Reform Coordination Working Group Revision of NESI Baseline Indices

Implementing policies to enhance the utilization of installed capacity presents a quick and effective strategy. This underutilized capacity represents a potential inventory for electricity supply that could be traded in the forthcoming wholesale electricity market. As illustrated in Figure 6, of the 17.8 GW of installed capacity (including embedded and captive sources), only 7.7 GW is currently utilized on the grid and in captive and embedded generation scenarios. This indicates that approximately 10.1 GW of capacity is available for reclamation.

FIGURE 8 - UPCOMING GENERATION CAPACITY BASED ON LICENSES ISSUED BY NERC



- Grid-connected plants are solely responsible for 37% (2,177.7MW) of unavailable capacities due to adverse maintenance constraints. These include Sapele (964MW). Afa IV&V (676MW) and Olorunsogo (537MW)

- Gas constraints represent 81% of the limits to the utilization of installed capacity, followed by water availability 14% of the time, low offtake from DISCOs 4% of the time and line issues 1% of the time.

Source: PSRCWG Revision of NESI Baseline Indices

A detailed analysis of licenses issued by NERC for capacities above 1 MW, as summarized in Figure 7, reveals that the forecasted generation capacity could reach as high as 55 GW. This raises critical questions about the focus areas and how these licenses might translate into actual capacities, particularly in the context of wholesale and state electricity markets.

FIGURE 9 - UPCOMING GENERATION CAPACITY BASED ON LICENSES ISSUED BY NERC

License Type	Yet-to-be-Installed Capacities (MW)
Grid	43,095.10
Captive	9,723.91
Embedded	2,600
Total (MW)	**55,419.01**

Source: PSRCWG Revision of NESI Baseline Indices.

Other electricity generation and supply challenges are summarized in Table 1.

Table 1 – Electricity generation and supply challenges

Type of Challenge	Description	Context / Bridging the Gap
Technical	Pipeline vandalism affect gas availability	Addressing the prevalence of pipeline vandalism is critical for improved available generation capacity in Nigeria. There is an opportunity for the use of technology through the deployment advanced surveillance systems to identify and respond to incidents of vandalism and theft on gas and power infrastructure in real-time.
Technical	Inadequate power generation capacity and aged infrastructure	The NESI has an installed capacity of around 17GW (both grid connected and licensed captive generation), with only around 7.7GW being operational[10]. According to the World Bank, Nigeria's electricity demand is expected to increase to 29GW in 2025 and 46GW in 2030[11]. The focus in the short-term should be to bridge the installed vs operational gap in the NESI which would require huge investment to recover failed generating units and make the units more efficient via conversion to combined cycle.

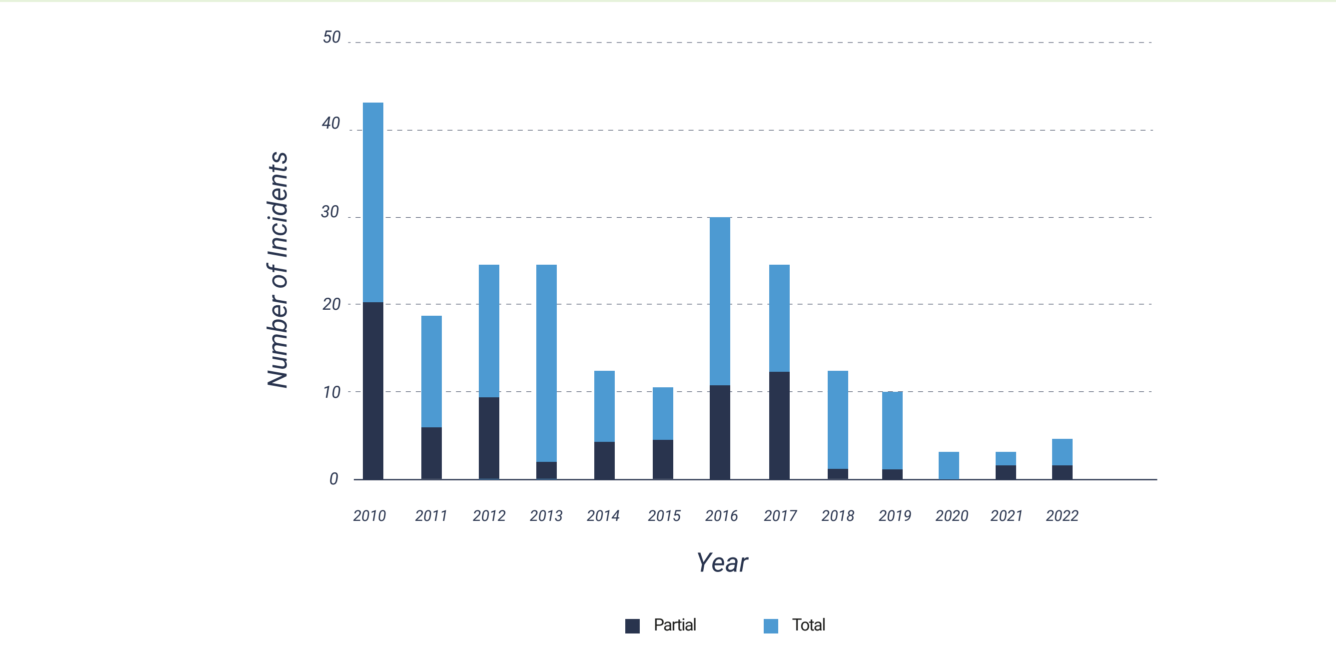
Type of Challenge	Description	Context / Bridging the Gap
Financial	Under-utilization of generation capacity due to low gas supply	As indicated earlier, the gas fired power plants connected to the grid access only about 33% of the gas needed to operate at installed capacity. This is mainly attributed to availability of gas, enforcement of contracts and liquidity issues linked to underpayment to GENCOs. NERC has issued regulatory instruments to ensure contracts are activated in the NESI and gas suppliers are paid directly. The government has also put in place a Domestic Supply Obligation (DSO). These require enforcement in addition to improved investments in new gas infrastructure.
Commercial	Indebtedness to gas suppliers and other vendors due to underpayment to GENCOs	As at end of 2023, the total indebtedness to GENCOs stood at over N1 Trillion[12]. The liquidity situation in the NESI has affected the ability of GENCOs to meet contracted obligation to guarantee gas supply and conduct routine maintenance on their equipment. A good place to start to address this issue is for the government to put in place firm plans to clear the outstanding liabilities over a defined period.
Financial	Dollar denominated obligation	The power sector is heavily dollar dependent as almost all equipment and spares are imported and the major input to the thermal plants (gas) is priced in dollars. The recent exchange rate unification policy of the government has led to the devaluation of the naira by over 130%, leading to significant increase in end-user tariffs. On top of this is the access to FX issues in the country making it difficult for licensees to access FX to fund offshore activities such as maintenance of machines and purchase of spares.
Technical / Commercial	Implementing utility-scale (on-grid) renewable energy projects	The government has committed to having 30% of grid power to be renewable by 2030[13], however, there is no utility-scale renewable energy project connected to the grid aside the hydro capacities. In 2016, the government signed PPA with 14 Solar IPP developers, aiming to inject over 1 GW of solar generation on the grid. The projects were stalled due to reluctance of government to provide sovereign guarantees on the PPAs and lack of alignment on pricing. The intermittencies associated with solar energy on the grid and grid stability are other issues affecting integration of renewable energy.

Source: TBI, 2023.

Transmission

The Transmission Company of Nigeria (TCN) encounters numerous challenges in maintaining and upgrading its transmission infrastructure, including insufficient funding, technical barriers, poor project management resulting in so many uncompleted projects and vandalism. Stability of the grid frequency is a critical Key Performance Indicator (KPI) for assessing grid performance. Following the expansion and rehabilitation projects carried out on the Nigerian transmission network (national grid) a power system stress test was carried out in 2020 using a power flow analysis under normal operating conditions. The result that was validated revealed that the transmission system could deliver 7,300 MW (wheeling capacity) to the distribution network[14], as reported under grid milestones of the systems operators website (https://www.niggrid.org/GridMileStones). Given that the installed grid generation capacity exceeds 13,000 MW and the estimated demand surpasses 25,000 MW, there is a necessity to enhance the capacity of the transmission system to match the generation capacity and improve the dispatch to Distribution Companies (DISCOs). Furthermore, historic operations records show the highest transmission ever achieved on the transmission system as 5,802 MW in March 2021. Data from NERC between January and September 2023 show that the grid consistently operated outside the standard frequency range of 49.75 Hz to 50.25 Hz[15], although it remained within the stress limits. The system collapse records shown in Figure 8 is indicative of the stability of the grid.

FIGURE 10 - SYSTEM COLLAPSE RECORDS

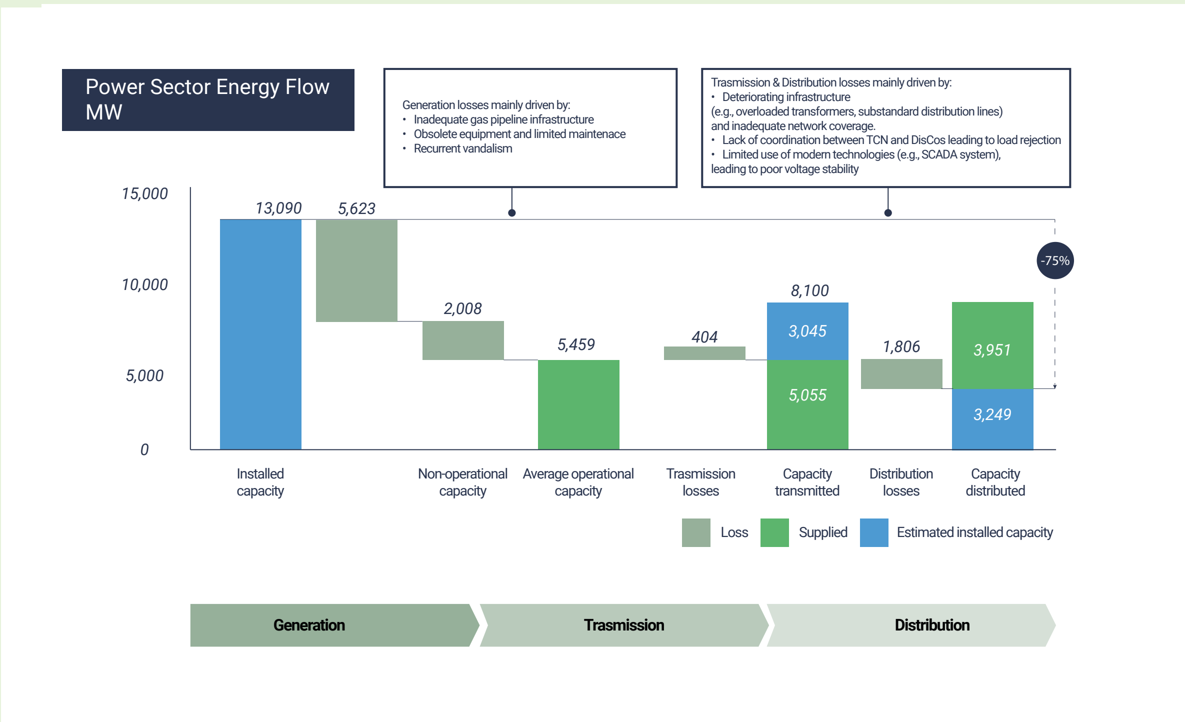


Source: PA-NPSP Technical Systems Operation Assessment

The consistent deviation from the normal frequency range highlights an imbalance between electricity supply and demand on the grid, not helped by the absence of a Supervisory Control and Data Acquisition (SCADA) system. This system is currently being implemented as part of the Nigeria Electricity Transmission Project (NETP), supported by the World Bank. With the enactment of pivotal reforms and significant government initiatives like the Siemens Grid and Distribution Enhancement Project, along with ongoing support from development partners such as the African Development Bank (AfDB), the World Bank, and the French Development Agency (AFD) for grid enhancement projects, the outlook for systematic improvements in transmission capacity is promising.

The perceived inadequate supply to meet demand stems from an inefficiency in operating the supply side to meet demand, as illustrated in Figure 9. This misconception has led to a significant misallocation of investments resources in procuring additional generation capacity, whereas such scarce resources would have better served the system in driving improvement in distribution and transmission infrastructure. The disparity between installed and operating generation capacity as well as upcoming generation capacity or new investments in generation are indicative of the misalignments.

FIGURE 11 - ANALYSIS OF ALIGNMENTS OF GENERATION, TRANSMISSION, AND DISTRIBUTION



Source: BPE DISCO Performance Agreement Review, 2022

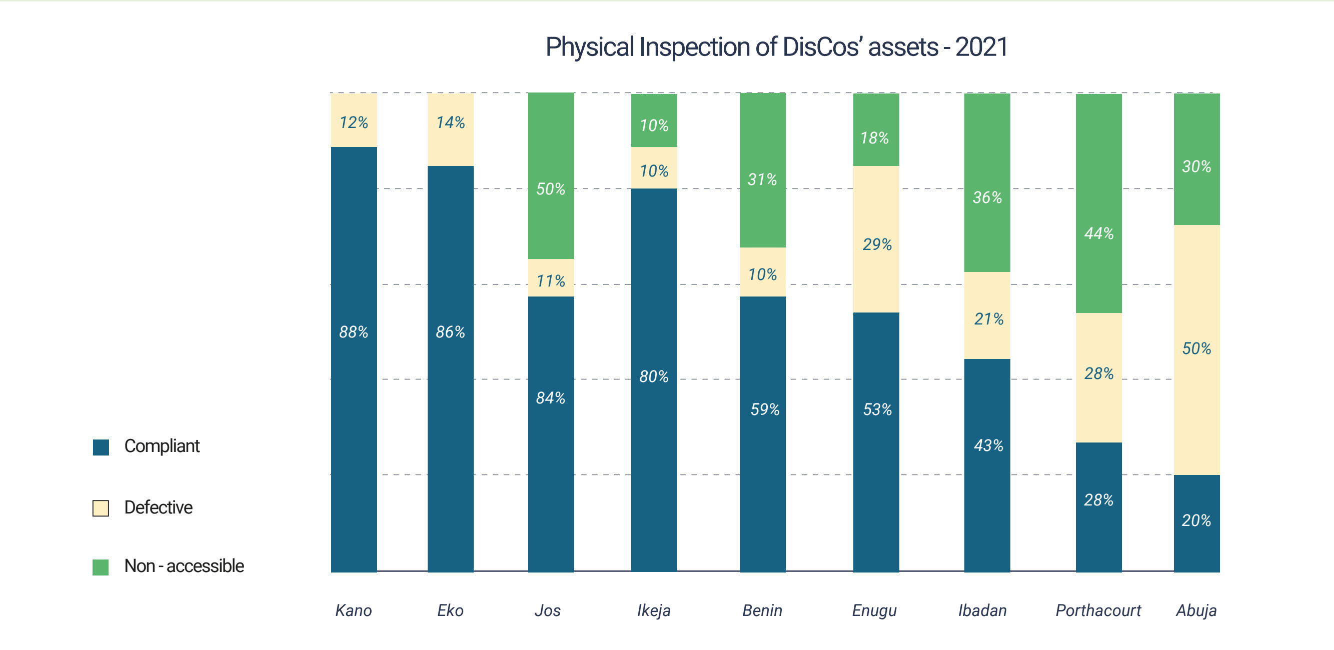
Table 2 – Challenges with electricity transmission

Type of Challenge	Description	Context / Bridging the Gap
Technical	Aged infrastructure	Much of the transmission network was built decades ago and has not been adequately maintained or upgraded. This has led to frequent breakdowns, limiting the network's ability to deliver electricity reliably. The ongoing Siemens PPI project and several transmission projects supported by Development Partners such as the World Bank, AfDB and AFD (details provided in the DP intervention section) are targeted at expanding and revamping the transmission infrastructure, but these need better coordination.
Technical	Insufficient and misaligned transmission capacity	The existing infrastructure lacks the capacity to handle Nigeria's growing demand for electricity. This results in bottlenecks where the generated electricity cannot be efficiently distributed, leading to widespread power outages and load shedding. Moreso, there are a number of existing transmission infrastructure that are not commensurately located in distribution load centres but located in remote areas without significant offtake.
Technical	Grid instability and inefficient grid management	The weak infrastructure and transmission bottlenecks also affect the grid's stability. The system often becomes unstable due to fluctuating supply and demand, leading to frequency imbalances and grid collapses. The ongoing SCADA project supported by the World Bank is expected to enhance better control and management of the grid[16] but has taken much longer than expected.
Financial	Inefficiencies in funding and Investment	While there are ongoing government efforts to rehabilitate and expand the grid, funding challenges hinder progress. There are tons of uncompleted projects that are not delivering value to the system. There are efforts to consider PPP frameworks to allow private-sector financing for transmission infrastructure, a partial privatization or concessioning of the TSP.

Distribution

The distribution segment significantly underperforms relative to transmission and generation capacities, leading to the grid's inability to meet the country's electricity demand despite potentially sufficient generation capacity. A 2021 assessment of distribution assets (Figure 10) revealed that 21% were defective of the 60%[17] that met reporting criteria, highlighting the distribution segment as the most critical point for intervention in electricity market reforms.

FIGURE 12 - OPERATIONAL STATE OF DISTRIBUTION ASSETS



Source: BPE DISCO Performance Agreement Review, 2022

The energy uptake by the Distribution Companies (DISCOs) is intricately connected to the performance capabilities of their distribution assets. In the second and third quarters of 2023, the DISCOs collectively recorded an average energy uptake of 3,254 MWh/h at their respective trading points[18]. During this period, the total energy received by all DISCOs amounted to 7,184 GWh, as detailed in Table 3. A significant insight into distribution inefficiencies is revealed by the fact that, out of the total energy received, only 5,682 GWh was billed to consumers. This results in a billing efficiency of 79%, which can be attributed to factors including inadequacies in metering, infrastructure challenges, and instances of energy theft.

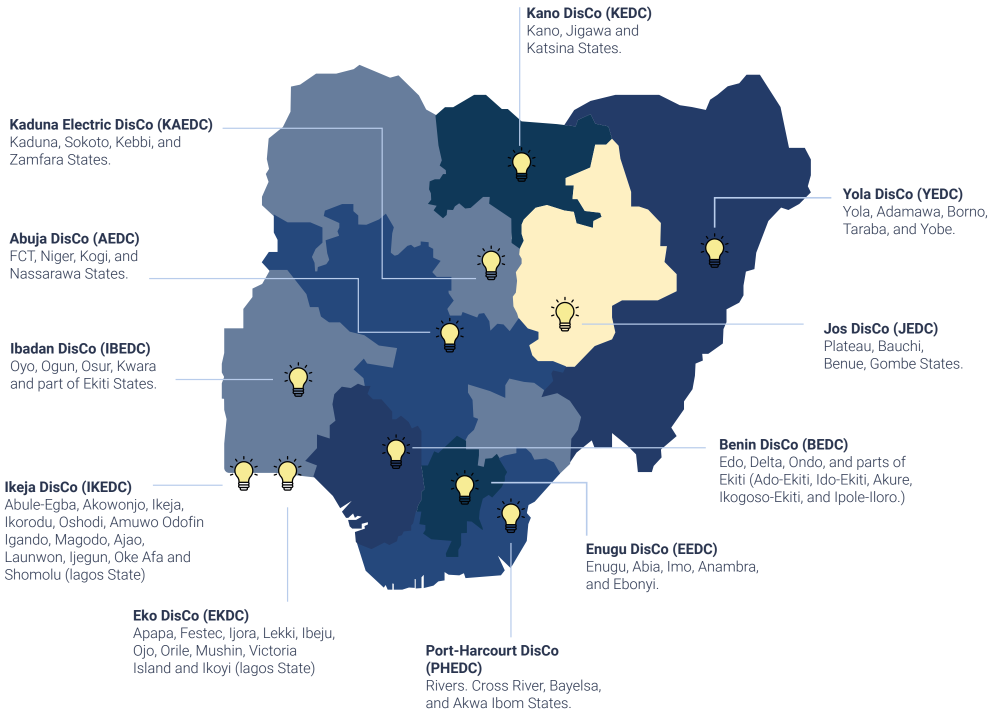
Table 3 – DISCO energy offtake 2023

DISCOs	2023/Q2 Energy Offtake (MWh/h)	2023/Q2 Available PCC (MWh/h)	2023/Q2 Offtake Performance (%)	023/Q3 Energy Offtake (MWh/h)	2023/Q3 Available PCC (MWh/h)	2023/Q3 Offtake Performance (%)
Abuja	496.34	527.64	94.07	480.07	528.33	90.87
Benin	297.33	305.85	97.21	272.82	289.37	94.28

DISCOs	2023/Q2 Energy Offtake (MWh/h)	2023/Q2 Available PCC (MWh/h)	2023/Q2 Offtake Performance (%)	023/Q3 Energy Offtake (MWh/h)	2023/Q3 Available PCC (MWh/h)	2023/Q3 Offtake Performance (%)
Eko	410.71	351.34	116.9	424.82	378.46	112.25
Enugu	282.05	315.34	89.44	263.85	284.56	92.72
Ibadan	374.29	397.09	94.26	94.26	383.79	105.55
Ikeja	518.45	535.03	96.9	524.79	562.85	93.24
Jos	161.05	187.99	85.67	168.39	185.58	90.74
Kaduna	178.11	184.68	96.44	188.41	194.56	96.84
Kano	191.26	199.19	96.02	188.19	203.84	92.32
Port Harcourt	244.05	257.55	94.76	239.08	251.36	95.11
Yola	97.66	103.69	94.18	98.31	110	89.37
All DI-SCOs	3,251.31	3,365.84	96.6	3,253.83	3,372.71	96.48

Source: NERC Quarterly Report, Q3 2023

FIGURE 13 - DISTRIBUTION COMPANIES AND THEIR RESPECTIVE FRANCHISE AREAS BEFORE THE ELECTRICITY ACT 2023.



Hitherto there were 11 DISCOs responsible for distribution and trading of electricity but because of the reforms we are looking at a likely model where the DISCOs will create subsidiary electricity trading companies for each State under the initial franchise area. Enugu State, being the first to set-up its electricity market19 is expected to create three electricity trading companies, one each for Enugu, Imo, Anambra, and Ebonyi States. In addition, Aba Geometric covering Abia State is the only vertically integrated utility operating in a State. It is important to maintain operations and achieve standardization in the electricity markets across the country to ensure that the country is not plunged into further darkness and market to market relationships are facilitated.

Table 4 – Challenges in the distribution segment.

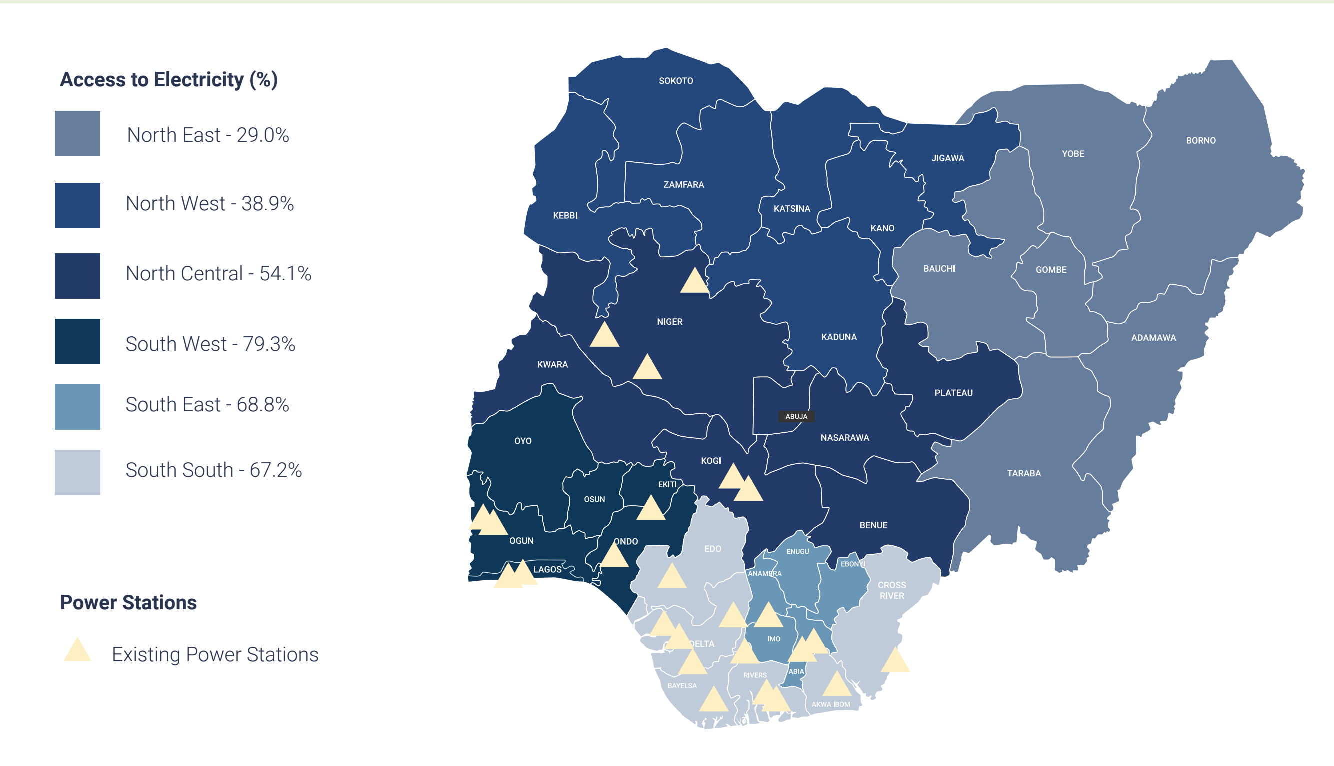
Type of Challenge	Description	Context / Bridging the Gap
Technical	Aged Infrastructure, loadshedding and unreliable supply	Much like the transmission network, the distribution network is also burdened with aged infrastructure that are prone to frequent faults. Outdated equipment leads to higher maintenance costs, increased breakdowns, and ultimately compromises the reliability of electricity supply to consumers. There have been attempts to address this through the ongoing PPI project, concessional financing support for CAPEX projects by the CBN to the DISCOs and the World Bank DISREP.
Commercial	Low metering coverage	Despite government efforts to increase metering rates, many consumers remain unmetered or rely on faulty meters, resulting in billing inaccuracies and customer dissatisfaction. The metering penetration rate in the NESI is around 44%, with around 5.8 million customers unmetered. Bridging the metering gap is essential to reduce losses and improve the liquidity situation of the sector. The Presidential Metering Initiative (PMI) is currently working to expediate the procurement and installation of meters to eliminate estimated billing practices and closeout the metering gap over the next 3 years.
Technical / Commercial	High losses due to energy theft	Distribution networks in Nigeria experience high technical and non-technical losses due to the poor state of infrastructure, electricity theft, illegal connections, and unpaid bills exacerbate the financial challenges faced by distribution companies.
Commercial	Unreflective tariffs	Tariffs are non-cost reflective in the sector leading to huge unpaid tariff shortfalls that somewhat still sits on the books of the DISCOs making the DISCOs unattractive for investment. NELMCO has been directed to take on the tariff shortfall liabilities from the DISCO books, but this action has stalled. Also, agreeing and adhering to a financing plan to payment of tariff shortfall is still not at the desired place.

Access to Electricity

According to the World Bank, in 2021 access to electricity in Nigeria was 59%, with a significant difference between urban (89%) and rural areas (26%)[20]. Also geographically, the distribution is not uniform, as the northern regions of Nigeria exhibit the lowest rates, with percentages ranging from 29% to 54%, as depicted in Figure 12. This contrasts with the southern part of the country, where connectivity rates are higher, averaging around 70%.

The primary determinants of the viability of electricity access include the level of poverty and the scale of economic activities. The north's few mini-grids have encountered notably low utilization levels, making it difficult to achieve a decent return on investment for the mini-grid financing models. The south, with its greater number of productive use cases, presents a more financially viable landscape for deploying electricity access projects, as evidenced by mini-grid developers' site selection. Additional challenges to access rates nationwide include security and safety concerns, with the north experiencing instability due to extremist and bandit activities. To effectively address universal access, state governments, through their relevant agencies, must take a leading role in enhancing the suitability of their communities for electricity access projects. State DISCOs and Electrification Agencies need to work in concert as principal planners and implementers of these initiatives.

FIGURE 14 - ACCESS TO ELECTRICITY ACROSS NIGERIA



Source: PA-NPSP Off-grid Market Intelligence Report, April 2022

Table 5 – Universal access to electricity challenges.

Type of Challenge	Description	Context / Bridging the Gap
Institutional	Low electricity access rate	Nigeria is ranked among the countries with highest electricity access problem in the world. While several initiatives are being implemented by government and development partners towards enhancing rural electrification, the slow pace of development of integrated and isolated mini-grids across the country remains a major challenge as Nigeria targets to increase access by 20% by 2025.
Institutional	Security and Safety	The rural-communities, especially in the northern part of the country, has been confronted with severe security challenges over the past decade, including banditry, kidnapping and farmer-herder clashes. This situation has made it difficult for private developers to operate within the region, thus worsening the electricity access problem.
Technical	Lack of detailed roadmap for renewable energy plan	The need to enhance the existing renewable energy policy documents to ensure there is a clear and detailed roadmap for renewable energy plan, which promotes the financial viability of renewable energy projects, incentivizes its uptake, and encourages investment.
Institutional	Private sector participation in renewable energy projects	There is the need to enhance the current incentive schemes to attract more private sector players in the renewable energy space. Furthermore, the low utilization levels of mini-grids deployed is a major disincentive for private sector participation. Designing programs that supports productive use appliances can stimulate demand and boost economic activities in these regions.

Sector Finances

The privatization of the power sector in 2013 was primarily to enable injection of finances to the power sector by private investors to finance the needed improvement in infrastructure. The other intention for the reform of the sector at that time was to attract the requisite skills to operate the sector effectively. However, since privatization the government has not seized to intervene financially in the sector which calls to question the effectiveness of the reform in the power sector. The Central Bank of Nigeria (CBN) has led the financial interventions in the power sector providing about N2 trillion between 2013 and 2023[21]. A summary of some of the financial interventions in the power are provided in Table 6 below.

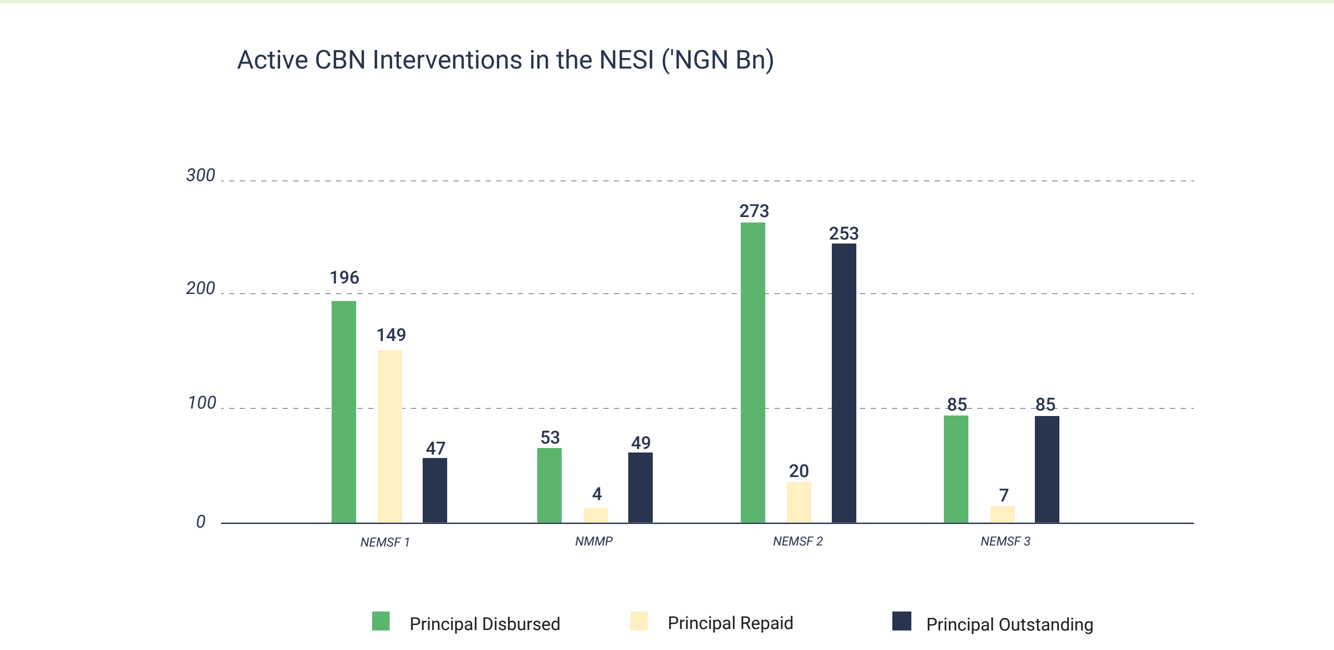
Table 6 - Summary of financial interventions in the power sector from 2013 - 2023.

Intervention	Amount	Type	Owner/Obligor	Purpose	Status
CBN, Power Sector Recovery Program – Payment Assurance Facility (PSRP-PAF)	N1.3 trillion	Loan	FGN	Payment of tariff shortfall to guarantee payment of Generation invoices.	Repurposed and moved to ways and means.
World Bank, Power Sector Recovery Operation (PSRO)	$750 million	Loan	FGN	Payment of tariff shortfall to guarantee payment of Generation invoices.	Fully disbursed, repayment ongoing.
World Bank, PSRO Additional Financing	$750 million	Loan	FGN	-Payment of tariff shortfall -Funding TCN Projects -Funding of ISO set-up	Approved but yet to be disbursed.
World Bank, Distribution Sector Rehabilitation Program (DISREP)	$500 million	Loan	Ultimately DISCOs	Funding of DISCO Performance Improvement Plans	Active
World Bank/ AfDB, Nigeria Electrification Program (NEP)	$500 million	Loan	FGN	Funding of electricity access projects.	Fully disbursed, repayment to follow.
Distributed Access to Renewable Energy Scale-up (DARES)	$750 million	Loan	FGN	Funding of electricity access projects.	Active
Nigeria Electricity Market Stabilization Facility (NEMSF) - 1	N200 billion	Loan	DISCOs	Funding of sector liabilities at the onset of privatisation.	Fully disbursed, repayment ongoing.
NEMSF-2	N275 billion	Loan	DISCOs	Funding of CAPEX and OPEX, including settling of invoices.	Fully disbursed, repayment ongoing.
NESF-3	N122 billion	Loan	Ultimately to TCN	Funding of transmission projects at critical TCN-DISCO interfaces to unlock energy delivery to viable DISCO load centres.	Fully disbursed, repayment ongoing.

Intervention	Amount	Type	Owner/Obligor	Purpose	Status
National Mass Metering Program (NMMP)	N54 billion	Loan	DISCOs	Funding of procurement and installation of meters.	Fully disbursed, repayment ongoing.
Transmission Rehabilitation and Expansion Program (TREP)	$1.35 billion	Loans & Grants	TCN	- NETAP (World Bank) - $486 million - High Voltage Transmission Ring – Abuja (AFD) - $170 million - NTEP 1 (AfDB) - $210 million - Lagos/Ogun Transmission Project (JICA) - $238 million - Northern Corridor (AfDB) - $245 million	Active

Further review of the CBN loans to the power sector provide an indication of the debt burden hanging on the sector in the face of poor revenue to the sector. A significant portion of the interventions were consumption focused (payment of tariff shortfall) and so the infrastructure issues were not sufficiently addressed. The sector is left to finance investments and loan repayments from the limited revenue which has led to the sector being stuck in a vicious cycle of financial inadequacies.

FIGURE 15 - STATUS OF ACTIVE CBN LOANS TO THE POWER SECTOR



Source: BPE DISCO Performance Agreement Review, 2022

The Nigerian Electricity Supply Industry (NESI) is facing a severe liquidity crisis, with a net sector liability estimated at NGN 952 billion as at the end of 2023[22] as seen in Figure 14. This is due to a combination of factors, including:

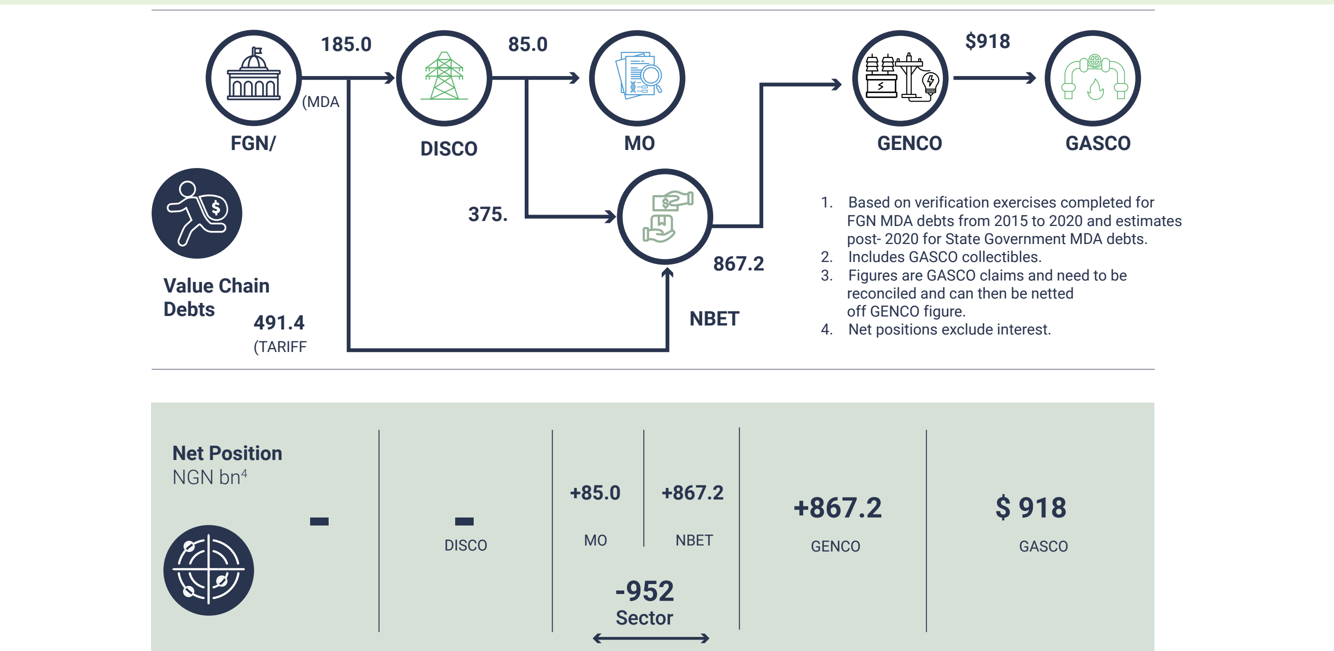
1. DISCOs' challenged profitability: Distribution Companies (DISCOs) are struggling to collect sufficient revenue from customers to cover their costs. This is due to several factors, including low tariffs, energy theft, and technical and commercial losses.

2. Historical tariff shortfalls: The tariffs paid by consumers have not been sufficient to cover the cost of electricity generation, resulting in a significant shortfall. This shortfall has been exacerbated by the government's reluctance to allow tariffs to rise to cost-reflective levels.

3. Unsettled liabilities from government agencies: Government Ministries, Departments, and Agencies (MDAs) have accumulated significant debts to the power sector, further contributing to the liquidity crisis.

The liquidity crisis is having a cascading effect across the entire value chain, making the sector unattractive for new investment. This is a major obstacle to the sector's progress and is hindering efforts to improve electricity access and reliability. The EA 2023 reform is considered a solution to the issues being faced in the Nigerian power sector, including the poor liquidity of the sector and investment attractiveness[23].

FIGURE 16 - ANALYSIS OF LIABILITIES IN THE NESI



Source: NESI Market Data, MYTO model, World Bank PSRO team,

SECTION 2: Country Policy Priorities

GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT
AFRICAN DEVELOPMENT BANK GROUP

AEMP
AFRICA ENERGY MARKET PLACE

Section 2: Country Policy Priorities

The Nigerian Power Sector Reform

Over the past two decades the legal framework in the power sector has undergone significant changes, particularly with the unbundling and privatisation initiatives in 2013 and the recent Electricity Act 2023. The unbundling in 2013 enhanced efficiency, accountability, and competition, creating six GENCOs, 11 DISCOs, and TCN overseeing transmission infrastructure. While laws and policies since 2001 have allowed regulatory authorities to establish additional regulations for a market-oriented approach, challenges persist in implementation and enforcement. Despite some progress in creating an enabling environment for private sector participation and investment, foundational components like sector governance, institutional capacity, and planning show limited improvement. Private sector engagement in the electricity sector is yet to meet expectations, and the sector faces challenges in attracting investment.

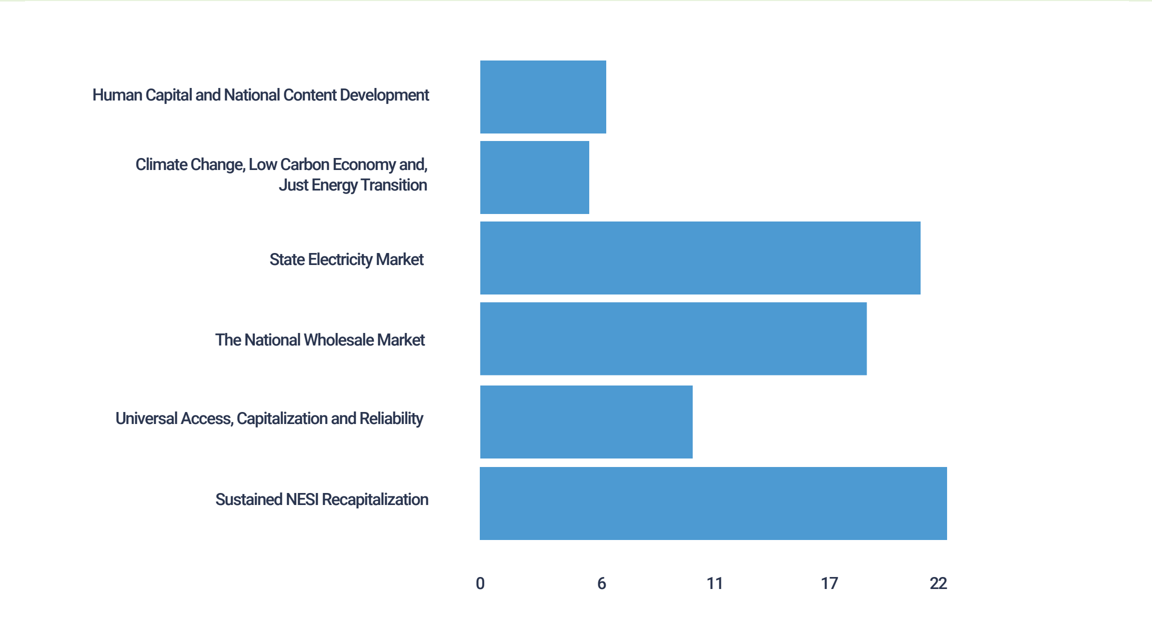
The Nigerian government has embarked on a transformative endeavour to revamp the electricity sector, culminating in the enactment of the Electricity Act, 2023. Effective from 8 June 2023, this landmark legislation aims to revitalize and fortify the country's electricity industry, addressing longstanding challenges and paving the way for a more resilient, efficient, and sustainable power infrastructure. At the heart of the Electricity Act, 2023 lies a decentralization to state-level electricity markets, alongside the consolidation and streamlining of regulatory frameworks governing the Nigerian Electricity Supply Industry (NESI), replacing fragmented regulations with a unified legal and institutional structure encompassing electricity generation, transmission, distribution, and consumer rights. Key provisions of the Electricity Act, 2023 include the implementation of an Integrated Resource Plan to attract investments in diverse electricity generation sources, the adoption of cost-reflective tariffs to ensure fair market practices, and the promotion of competition to enhance efficiency and innovation within the sector. Additionally, the Act introduces pivotal reforms such as stringent penalties for electricity offenses to ensure accountability and incentives for clean energy adoption, aiming to diversify Nigeria's energy portfolio and reduce its carbon footprint.

A notable requirement of the Act is the development and approval of a National Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP). This process is ongoing and is in its concluding stages. The AEMP 2024 is providing a platform for the crystallization of the process to achieve a NIEP-SIP document. In addition to several sector roundtables and discussions around implementation of the Act, the Federal Ministry of Power held a Roundtable in December 2023 to discuss the issues in the sector and commence the process of developing policies to address them. Subsequently, AEMP started with a series of online technical sessions in April 15 – 17 to discuss and develop further the policies that were put together in the consultation paper that came out of the December 2023 Roundtable. AEMP 2024 was concluded with an in-person policy dialogue event where discussions moved towards decision making to deliver a draft NIEP-SIP document for consideration by the Federal Executive Council (FEC).

Highlights of Policy Priorities

A total of 84 policy actions have been recommended and are aimed at improving various aspects of the power sector. These policy actions are categorized under the 6 themes under which the AEMP policy dialogue has been implemented. Three of them, i.e. the Recapitalization of the NESI, the set-up of the Wholesale Market and the State Electricity Markets received special attention through the various roundtables and during the series of online technical sessions of the AEMP 2024. As seen in Figure 15, an analysis of all the policy recommendations based on the potential societal impact, public perception, and time to impact (short, medium, long term) shows that the 61 out of the 84 policy recommendations fall under these three main thematic areas, demonstrating their importance for the implementation of the Electricity Act 2023.

FIGURE 17 - CATEGORIZATION OF POLICY ACTIONS UNDER THE KEY THEMES OF THE AEMP 2024



Policy Priorities

The same analysis done by rating each policy with respect to its potential societal impact, public perception, and time to impact (short, medium, long term) identified 23 policies as top priorities. The time to impact rating of each policy recommendation was determined by considering the key requirements to put in place and implement each policy recommended. Some requirements considered include those summarized below.

1. A policy is considered short term if there is no need for new allocation of resources and if there is an existing framework (regulatory or policy) for the

recommended policy to be built on, i.e. something is already being done and this recommendation is an improvement or replacement to an existing policy as against a total new area of policy. A policy will be categorized medium or long term the further we move away from meeting the above requirement.

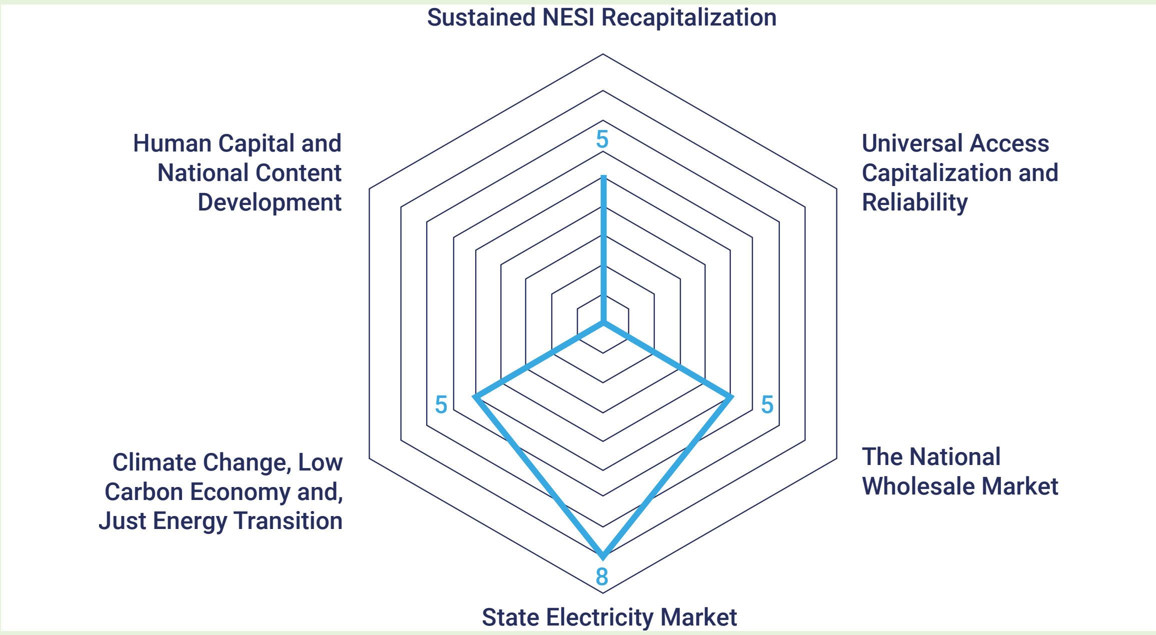
2. It is important to build momentum and consensus around the implementation of the Electricity Act 2023 through the National Integrated Electricity Policy and Strategic Implementation Plan (NIEP-SIP). Any policy that can quickly help build momentum immediately without a gestation period of implementation is considered short term and then the further a policy moves away from this it is termed medium or long term.

3. The size of budget and effort required to implement a policy will determine if the policy is short, medium, or long term. Lower budget size and efforts policies are short term classified and higher budget size and efforts are medium and long term classified.

The policy options in this document were updated using the outcome of the AEMP policy dialogue. The focus of these policies broadly covers regulatory updates, strategic planning, infrastructure investment, and community engagement.

Post AEMP policy dialogue, the updated policy options plotted in a radar chart shows that the 23 priority policies fall within four thematic areas of sustained NESI recapitalization, Wholesale and State Electricity Markets, and climate change, low carbon economy, and just energy transition as seen in Figure 16 below.

FIGURE 18 - ANALYSIS OF TOP 23 PRIORITY POLICIES.



Source: TBI elaboration

A quick look through the priority policies in Table 7 provides a good overview of the key policies being proposed ahead of a detailed presentation of the policies in the subsequent sections of this report. This presentation of priority policy recommendations is prioritised with the short term rated policy recommendations coming first followed by the medium term and lastly the long term.

Table 7 – Priority policies for the power sector reform.

SN	Proposed Policy	Policy Category	Implementation
1	Decouple the gas pricing such that locally originating components are priced in Naira and not indexed to the US Dollar. A committee of the NERC, Ministry of Power, Ministry of Petroleum Resources and Ministry of Finance should be established to decide on how this can be achieved in an equitable manner.	The National Wholesale Market	Short term (1 – 2 years)
2	NERC to request for a franchising plan from the DISCOs that is binding and would help attract investment for loss reduction and improved service delivery. Lessons from existing franchising models can be adapted.	Sustained NESI Recapitalization	Short term (1 – 2 years)
3	Payment discipline must be strengthened further in the NESI by ensuring that firm contracts are in place and adhered to, starting with the Gas Supply Agreements (GSAs) all the way to the service delivery contracts with end users. All regulators (NMDPRA, NERC, State Regulators, and West African Power Pool Regulator should collaborate to ensure contracts are adhered to, fail safe measures put in place for defaults, and penalties are prescribed and take effect where the conditions are met. Payment discipline will be enhanced with the Federal Government of Nigeria fully clearing the existing liabilities linked to tariff shortfall that has accumulated and not fully funded. There must be a cut-off date set to clear the outstanding, and a mechanism that would meet payment obligations going forward.	The National Wholesale Market	Short term (1 – 2 years)
4	With a gradual transition to State electricity markets, which will be focused on consumer engagements and protection, the States should commission a comprehensive review of the metering gap within their jurisdictions and develop a plan to close this gap in collaboration with DISCOs, end-users, local manufacturers, other metering vendors, and financial institutions.	State Electricity Market	Short term (1 – 2 years)
5	NERC should commence a recapitalization of the Nigeria Electricity Supply Industry (NESI) to trigger the issuance of new shares and attract fresh capital to bolster the balance sheets of licensees, especially DISCOs and GENCOs. This aims to reduce ATC&C losses and recover installed generation capacity, which is a priority for the sector. It is expected that shareholders unable to respond to cash calls will either be diluted or have the option to divest their shareholding.	Sustained NESI Recapitalization	Short term (1 – 2 years)
6	NERC and eventually State regulators should mandate all licensees to digitalize operations for automated data collection and reporting and make automated data management a performance metric of licensees.	Sustained NESI Recapitalization	Short term (1 – 2 years)

SN	Proposed Policy	Policy Category	Implementation
7	The State and Federal governments should work with local commercial banks and Multilateral Development Banks (MDB) to create innovative risks instruments tailored to the Nigerian Electricity Supply Industry (NESI) such as guarantees, or insurance schemes, to mitigate investment risks different from the traditional sovereign guarantees.	The National Wholesale Market	Short term (1 – 2 years)
8	State Governments should set up electricity management committees in communities to take responsibility for the management of electricity supply assets within their communities such as lines and distribution transformers. This committees will have the mandate of monitoring the assets for vandalism and energy theft and participating in asset maintenance exercises.	State Electricity Market	Short term (1 – 2 years)
9	To reduce collection loses and encourage cost recovery for energy delivered to remote communities and enhance electrification efforts, regulators and electricity management committees should improve on the enforcement of payments only through approved payment systems for revenue security in the electricity markets.	State Electricity Market	Short term (1 – 2 years)
10	The Federal Ministry of Power should be responsible for updating the power components of the energy transition plan, facilitated by an intra-sectoral coordination mechanism.	Climate Change, Low Carbon Economy and, Just Energy Transition	Short term (1 – 2 years)
11	IRPs and ETPs should be the basis for how generation capacities are procured, and generators and suppliers licensed, by approving only license requests that are aligned to the IRP and ETP.	Climate Change, Low Carbon Economy and, Just Energy Transition	Medium term (3 – 5 years)
12	NERC should accelerate efforts to build a web-based data aggregation centre to ensure data is available for decision making by market participants and performance monitoring by the regulators. This is also needed to ensure transparency to the public.	Sustained NESI Recapitalization	Medium term (3 – 5 years)
13	NERC should create awareness on the processes in place to recognize investments by third parties, including customers, and provide a transparent mechanism for cost recovery. Forms and reporting processes should be put in place for individual and communities to report all network investments to the network operator keeping NERC informed. Approval for such projects should be based on principles of need and efficient use of resources.	Sustained NESI Recapitalization	Medium term (3 – 5 years)
14	TCN should engage domestic and international financial institutions, including private investors, to come up with innovative and performance-based financing mechanisms for the funding of infrastructure projects such as bonds, equity investments, and public private partnerships, providing clear guidelines, incentives, and risk-sharing mechanisms to attract investors.	The National Wholesale Market	Medium term (3 – 5 years)

SN	Proposed Policy	Policy Category	Implementation
15	TCN supervised by the Federal Ministry of Power should conduct a renewable energy grid integration study to establish a clear outlook of the phases of renewable energy technologies integration to the grid in terms of capacity scenarios, timing, operational requirements, and technology solutions for stable grid operation.	The National Wholesale Market	Medium term (3 – 5 years)
16	State Governments should consider setting up two electricity markets within the State; one for the connected urban centres and another for unconnected rural areas, leveraging mini-grids to drive universal access efforts.	State Electricity Market	Medium term (3 – 5 years)
17	The Rural Electrification Agency, working with State Governments, should roll out a detailed electrification plan focusing on decentralized renewable energy systems for remote areas. These first-time electrification plans should be the key reference document for allocating universal access projects in communities with the plans updated regularly and providing geo-spatial information and accessible online so that communities can be matched to the most relevant energy sources and aligned with grid expansion plans and ongoing interconnected mini-grid development.	State Electricity Market	Medium term (3 – 5 years)
18	NERC and State regulators should work with electricity management committees do regular townhall meetings in communities to promote the awareness of electricity as a commodity to be paid for and the responsibility of consumers in the electricity supply process.	State Electricity Market	Medium term (3 – 5 years)
19	States should develop and operationalize IRPs as a recommended starting point for the state market. The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve this working with development partners.	State Electricity Market	Medium term (3 – 5 years)
20	The Federal Ministry of Power should work with the NGF to coordinate support for the States to achieve IRPs, working with development partners.	State Electricity Market	Medium term (3 – 5 years)
21	State Governments should work with development partners to prepare projects for electricity supply within their states to an investment-ready or turnkey stage for investors to take up, including applying viability gap funding mechanisms for rural areas. The prepared projects should have key elements secured such as land, permits, licenses, right-of-way, and offtake arrangements.	Climate Change, Low Carbon Economy and, Just Energy Transition	Medium term (3 – 5 years)
22	NERC should consider introducing a clean energy levy on tariffs to fund activities such as research and development, technology transfer, and capacity building to facilitate a well-managed transition to renewable energy technologies.	Climate Change, Low Carbon Economy and, Just Energy Transition	Medium term (3 – 5 years)
23	The State Government should site large scale commercial and industrial projects in rural communities for the creation of substantial economic activities to improve the viability of communities for mini-grid projects.	Climate Change, Low Carbon Economy and, Just Energy Transition	Medium term (3 – 5 years)

The subsequent sections of the report will provide more detailed policy recommendations that have come out of the AEMP policy dialogue process, presented under the six thematic areas of;

- Sustained NESI recapitalization
- Universal access, capitalization and reliability
- National wholesale electricity market
- State Electricity Market
- Climate Change, Low Carbon Economy and, Just Energy Transition
- Human Capital and National Content Development

Sustained NESI Recapitalization

Enhance private sector participation in the NESI through the implementation of the Electricity Act 2023 to address areas that have not gone well in the last decade, post privatisation.

The key issue identified with the privatisation is that shareholders of the privatized entities have not made the required investment as anticipated in the Performance Agreement signed with the Bureau of Public Enterprises in 2013 to reduce ATC&C losses and strengthen and expand the distribution networks to improve service quality and reliability. Recapitalisation of power sector entities offers the opportunity to inject the much-needed funds into the utilities to improve the overall financial wellbeing of the electricity value chain in Nigeria, post-privatisation.

The policies recommended under the sustained NESI recapitalisation are grouped into four broad areas. (i) Financial and structural reforms; (ii) regulatory and tariff reforms; (iii) investment and market dynamics; (iv) consumer protection and engagement.

Financial and Structural Reforms

Enhance private sector participation in the NESI through the implementation of the Electricity Act 2023 to address areas that have not gone well in the last decade, post privatisation.

The intention of the privatization of the power sector was to attract private investment andexpertise to improve the financial health of the power sector. The following areas need to be addressed to improve the investment attractiveness of power sector:

- Facilitate the ease of financing power sector entities through equity.
- Restore confidence of the financial institutions to make available debt financing to the power sector.

- Improve quality of management and corporate governance of power sector entities.

These actions would ensure that barriers to the inflow of private investments to the sector are limited and investments that make their way into the sector are managed efficiently leading to multiplication of investments.

FACILITATE EASE OF FINANCING OF POWER SECTOR ENTITIES THROUGH EQUITY

DISCOs should be broken into smaller and more manageable entities at the State level and sub-units (sub-franchising) within each State. The EA-2023 requires the States to trigger a breakup of a DISCO on account of exercising its power to take up regulatory oversight of the power sector in the state. This will help to address the challenge of attracting investment to match the current needs of the relatively large DISCOs compared to if they are broken down to smaller sizes. Along with DISCOs' recapitalization along state-lines, a clean-up of DISCOS balance sheets by removing the tariff shortfall liabilities due to the FGN that is on the DISCO books, should be conclusively implemented by transferring the liabilities to the Nigeria Electricity Liability Management Company (NELMCO).

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NELMCO should implement the directive to take off all tariff shortfall liabilities from DISCO books and put a plan in place on how assets in its possession will be leveraged to repay over time.	Short term (1 – 2 years)	NELMCO, DISCOs, NERC, DMO, BPE, Federal Ministry of Power, Federal Ministry of Finance.
2	NERC to issue an order to all DISCOs on the unbundling of operation of DISCOs along State lines to ease recapitalization and in anticipation of the creation of State electricity markets.	Medium term (3 – 5 years)	NERC, DISCOs, BPE, State Governments, MOFI.
3	The regulatory provisions for sub-franchising should be enhanced to drive DISCOs to embrace sub-franchising as a means of improving the distribution and supply side of the NESI. This can be through a NERC order to DISCOs to submit a binding franchising plan to attract investment for loss reduction and improved service delivery, learning from existing franchising models. This plan should be along state lines in consideration of the developing multi-tiered electricity market.	Medium term (3 – 5 years)	NERC, DISCOs.
4	The plans for the sale of NDPHC power plants should be followed through and concluded to allow for increased investments and expertise to increase generation availability on the grid.	Short term (1 – 2 years)	NDPHC, MOFI, BPE, State Governments, NERC.

5

ACTION

NERC should issue a licensee 'recapitalization order' that will trigger the need to issue new shares and attract fresh capital to bolster balance sheets of the DISCOs and GENCOs, reduce ATC&C losses in DISCOs and recover GENCO capacity. Shareholders unable to respond to cash call are either diluted or have the option to divest their shareholding.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, NDPHC, DISCOs, GENCOs, State Governments, MOFI.

IMPROVE QUALITY OF MANAGEMENT AND CORPORATE GOVERNANCE OF POWER SECTOR ENTITIES

Standardize corporate governance for all licensees in the NESI in line with global corporate governance standards such as the CFA Corporate Governance for listed companies. This should commence with putting in place systems that will enable corporate governance actions, monitoring, and reporting. It is important to develop corporate governance improvement actions from a good understanding of the status and what practices are common within entities that are not aligned with corporate governance expectations.

Actions steps and parties involved:

1

ACTION

An order should be issued to all licensees to digitalize operations for automated data collection and reporting and make automated data management a performance metric of licensees.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, GENCO, TCN, DISCOs.

2

ACTION

NERC should issue an order for licensees to build a web-based data centre with a frontend accessible to the public and reporting metrics such as customer service levels, fault resolution, and compliance with orders.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC, GENCO, TCN, DISCOs.

3

ACTION

A corporate governance audit of the market licensees should be undertaken to provide an understanding of corporate governance issues.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, GENCO, TCN, DISCOs, Reputable consultants.

4

ACTION

Environment, Social, and Governance (ESG) reporting should be integrated into annual reporting expectations of licensees captured in NERC reports.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, GENCO, TCN, DISCOs.

Regulatory and Tariff Reform

An enabled investment environment is critical to recapitalizing the power sector to ensure entities are well financed to fulfil their obligations to the sector, with reliable and effective risk mitigation measures in place in the event of defaults. The goal of an enabled environment is to improve the capacities of power sector entities to meet obligations as against a mere policing effort waiting for the entities to fail. This requires deliberate actions in consistently building the capacities of the entities within regulatory provisions and frameworks. A number of actions are necessary to achieve the goal of enhancing the capacity of power sector entities to perform better within an enable regulatory environment and framework and these include; (i) regulatory overhaul; and (ii) electricity tariff reform.

REGULATORY OPERATIONS

NERC to reflect the implementation of the EA 2023 that introduces a multi-tier electricity market in its operations.

There should be a division in NERC for interfacing with States to handle the transition from Federal regulation to State regulation, with operations dedicated to managing regulations for States that are yet to set up State regulation.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NERC to align its operations with the transitioning into a multi-tier market.	Short term (1 – 2 years)	NERC
2	Ministry of Power should collaborate with the Nigeria Governors Forum (NGF) to establish a Standing Committee of NERC and State Commissioners of Energy by December 2024 to ensure minimum levels of standards and codes across the country as we transition to sub-national electricity markets to guarantee standardisation of service delivery.	Short term (1 – 2 years)	FMoP, NERC, State Governments.

ELECTRICITY TARIFF REFORM

Revisit the Multi Year Tariff Order (MYTO) to make tariff setting effective for cost recovery and ensure that subsidy funding and payment to the market is automatic and independent of bureaucratic processes.

The tariff reform should aim at addressing low electrification rates (unserved and underserved), leading to fewer consumers paying to maintain the current system and to cover the cost of grid expansion. It should also address the affordability and subsidy application and funding challenge.

Actions steps and parties involved:

1

ACTION

NERC should issue an order for DISCOs to undertake Cost-of-service studies to reflect the total costs incurred by them in providing service to its customers and how those costs are attributed to the different customer classes. This should be the basis for establishing utility rates driven by cost recovery rather than revenue required. This exercise will assist in the transition to state regulation.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, Licensees.

2

ACTION

NERC should undertake an extraordinary tariff review that seeks to achieve the following among others;

- Restructure the number of service-bands to better reflect the disparities in hours of supply.
- Update tariffs for life-line customers (energy consumption at 50kWh/month at N4/kWh) to prevailing conditions.
- Increase lifeline consumption threshold to accommodate more customers considering the size of the population considered poor and this can be updated with changes in economic indices.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning.

3

ACTION

NERC should establish the Power Consumer Assistant Fund (PCAF) as provisioned in EA 2023 as sole subsidy application mechanism in NESI. Electricity Subsidy at the production level should be linked to gas supply to mitigate foreign exchange risk. Subsidy at the consumption level should be targeted at energy consumption thresholds of consumers rather than supply to feeders considering that the same feeder could supply both affluent and disadvantaged customer categories.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.

4

ACTION

The Ministry of Finance should prepare a financing plan for subsidy application over a set period of 5 years which will be managed through PCAF. The source of funding the PCAF and its operations should be institutionalized not needing regular budgetary allocations and approvals.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.

5

ACTION

The FMoP should secure the necessary approvals for the issuing of promissory notes to GENCOs and GASCOs to offset legacy liabilities and implement actions that are conditions precedent for issuing the promissory notes.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

DMO, NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.

6

ACTION

NERC should include tariff shortfalls in future tariffs in anticipation that generation capacity will grow, and unit cost drops and the resulting savings will net-off inserted tariff shortfall. Another source of funding can be the issuance of bonds.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, ISO, DISCOs, GENCOs, TCN.

Investment and Market Dynamics

The role played by the Nigerian Bulk Electricity Trader (NBET) needs to be redefined to encourage bilateral contracting in the market. A 'bulk electricity trading transition plan' should be in place to redefine NBET's role in the market to encourage competition and efficiency, considering it as one among multiple buyers rather than the sole bulk buyer. The plan will show the modalities of novating the existing PPAs from NBET to the DISCOs over a pre- determined period taking into consideration average wholesale tariffs, creditworthiness of DISCOs, and market liabilities.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NERC to facilitate the provision of more ancillary services in NESI by designing clear pricing for additional services such as voltage regulation or energy reserves, and energy imbalance etc.	Short term (1 – 2 years)	NERC, ISO, GENCOs, TCN.
2	NERC should develop a 'bulk electricity trading transition plan' as part of a regulation for the licensing of ancillary service providers.	Short term (1 – 2 years)	NERC, ISO, GENCOs, TCN.

Consumer Protection and Engagement

Deliberateness in the engagement of end users should be instituted recognising their place as the most critical stakeholders in the electricity supply market. This should be structured around transparency in service delivery, including billing and integrity in the recognition of contributions made by end users to keep operations active such as prompt payment of bills and upfront financing of distribution infrastructure.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NERC should issue a guideline on how DISCOs can access the Meter Acquisition Fund (MAF) being set aside monthly for procurement of meters. DISCOs should provide a comprehensive meter deployment plan across the franchise area and along state lines, which should be published on their website for customer information.	Short term (1 – 2 years)	NERC, DISCOS, Consumer groups.
2	NERC to improve the implementation of relevant instruments such as the regulation on third party investment in electricity networks to enhance the recognition and cost recovery for investments done by third parties including customers.	Medium term (3 – 5 years)	NERC, DISCOS, Consumer groups.

3

ACTION

NERC to strengthen awareness creation and sensitization activities on the rights of customer and expectation, not limited to cost recovery for financing of asset purchase, access to meters, estimated billing, energy theft. This action should be independent of the awareness creation by DISCOs and done regularly through social media and traditional media platforms.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, Consumer groups, Media.

Universal Access, Capitalization and Reliability

National and sub-national governments should devise a coordinated approach in addressing the processes for promoting universal energy access and enhancing investments and reliability in the NESI. The key issue identified is the need for coordination in electrification and reliability plans, from the national level down to the state level. This would also include granular steps to increase investments in the respective electricity markets, particularly for renewable energy integration, and productive use off-grid electrification for low-income populations. The policy recommendations advanced under the Universal Access, Capitalization, and Reliability session are grouped into five areas. (i) Enhanced state involvement and federal coordination; (ii) community level engagement and capacity building; (iii) financial strategies and incentives; (iv) infrastructure and technology development; (v) data management and transparency.

Enhanced State Involvement and Federal Coordination

Coordination between federal and state markets for universal access, capitalization and reliability should be reinforced to improve process alignment and investment viability of the power sector.

The objectives of the state participation provision in the EA include boosting the rate of electrification across the nation, increasing the value chain's reliability, and enhancing the access to private sector investment. These objectives ultimately aim to support the national universal access targets. The empowerment of state governments would ensure that any possible knowledge barriers to the synchronization of federal and state electrification plans are addressed.

Community Level Engagement and Capacity Building

Enabling appropriate engagement with grassroot communities and building capacity are important to guarantee the successful implementation and security of energy projects, ensuring that energy investments yield adequate returns.

Properly engaging grassroot communities and building their knowledge base for proposed energy projects aims to ease community penetration and securitize projects. The following areas need to be addressed to this effect:

- The establishment of community electricity access committees.
- The development of capacity building programmes

THE ESTABLISHMENT OF COMMUNITY ELECTRICITY ACCESS COMMITTEES

There should be the establishment of committees involving strong participation from youth and women to collaborate with development agencies and government on access projects, covering data collection, system maintenance, and tariff negotiation.

This initiative may be managed by the Federal Rural Electrification Agency (REA) or State Rural Electrification Boards (REB) as these entities will oversee energy access projects in predominantly rural areas where electricity access rates are lowest.

Actions steps and parties involved:

1

ACTION

State Governments should set up electricity management committees in communities to take responsibility for the management of electricity supply assets within their communities such as lines and distribution transformers. This committees will have the mandate of monitoring the assets for vandalism and energy theft and participating in asset maintenance exercises.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

Federal/state regulators, federal/stateREAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers.

2

ACTION

Monitoring and evaluation standards must be set for the community electricity access committees to adequately aid developers with data collection and ensure that factors such as tariffs reflect the realities in the communities while being commercially viable for developers.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

Federal/state regulators, federal/state REAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers.

THE DEVELOPMENT OF CAPACITY BUILDING PROGRAMMES

Capacity building programmes should be implemented for local governments and community groups to enhance their ability to manage and oversee energy projects effectively.

This should be part of DISCOs/Sub-DISCOs performance metric in line with their CSR or ESG programmes. This should also be a collaborative effort between the DISCOs /Sub- DISCOs, REA, and the local government. This should be managed by the REBs in the States.

Actions steps and parties involved:

1

ACTION

The DISCOs to create community capacity development programs as part of CSR and ESG goals for implementation across communities within their franchise areas.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

Federal/state regulators, federal/state REAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers, NAPTIN.

Financial Strategies and Incentives

The role played by private finance and incentives for project development, especially in the off-grid space, should be leveraged and strengthened through policy and regulatory adjustments.

The following area needs to be addressed to this effect:

- Increasing access to financing and incentives for private investment.

Actions steps and parties involved:

1

ACTION

Regulators should create and strengthen incentive structures, such as REFIT, Net Metering, and green energy purchase obligations, to attract private investment into the power sector, particularly in underdeveloped and less viable areas.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC/state regulators, state governments, DISCOs/ DISCOs subsidiaries, development partners.

Infrastructure and Technology Development

Investments in grid infrastructure are critical to not only improve electricity access but also increase reliability of existing electricity sources.

The following areas need to be addressed to this effect:

- Infrastructure expansion
- Innovative energy solutions

INFRASTRUCTURE EXPANSION

Actions steps and parties involved:

1

ACTION

The expansion of the grid should be accelerated where feasible with public private partnership arrangements and grid extensions for economic load centres should be prioritized.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

TCN, NERC, private sector.

2

ACTION

TCN should engage States to discuss expansion and upgrades to transmission assets that cut across their States with a view to partnerships and collaborations that can potentially finance the relevant projects that will spur or unlock more generation capacity into respective States. This move can help prioritise investments and focus on grid stability and commercially viable areas.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

TCN, NERC/state regulators, state governments, private sector.

INNOVATIVE ENERGY SOLUTIONS

Actions steps and parties involved:

1

ACTION

Sub-national governments should establish a research and development unit empowered to adapt new technologies to state power needs and source for funding.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC/state regulators, private sector, development agencies, DISCOs.

2

ACTION

NERC should collaborate with State governments to undertake research and pilot projects for technologies like run-of-the-river hydropower and promote the use of solar pumps for irrigation to diversify the energy mix and enhance reliability.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC/state regulators, state governments, DISCOs, private sector.

Data Management and Transparency

For any reliable electricity market to run successfully, it is important that data is collected, and managed efficiently with the ability to be accessed and modified adequately according to the changing realities.

The following areas need to be addressed to this effect: (i) Data coordination and access (ii) Monitoring and statistics

DATA COORDINATION AND ACCESS

Actions steps and parties involved:

1

ACTION

Creation of a national data repository accessible to all stakeholders and establishment of a platform for data on existing and planned projects generated from different donor-funded programmes to streamline strategic energy access planning. The repository should also contain maps highlighting unserved and underserved areas as well as the existing on-grid and off-grid infrastructure across the country.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC/state regulators, state governments, federal/state REAs, DISCOs/DISCOs subsidiaries, TCN, GENCOs.

MONITORING AND STATISTICS

Actions steps and parties involved:

1

ACTION

Each state government should create a research and statistics unit to gather and validate data periodically on unserved and underserved areas and monitor energy services.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

State governments, federal/state REAs, DISCOs/DISCOs subsidiaries.

The National Wholesale Electricity Market

Ensure the establishment of a strong National Wholesale Electricity Market (NWEM) bearing in mind the potential exit of the Nigerian Bulk Electricity Trading Company Limited (NBET) in November 2024 or expectation that its role will be redefined if it should remain, and the preparation for the transition to the Medium-Term Market Stage as prescribed in the Market Rules.

The success of the wholesale electricity market to be established will include the following key features;

- The match between the short-term market used to dispatch generation units and the physical operation of the electricity network;
- Effective regulatory and market mechanisms to ensure long-term generation adequacy;
- Appropriate mechanisms to mitigate local market power.

The policies and recommendations to be advanced to support the establishment of a wholesale electricity market will cover the following focus areas; (i) Regulatory and commercial framework; (ii) market structure and efficiency; (iii) gas supply and energy mix; (iv) consumer protection and market operations (v) financial stability and market development (vi) comprehensive transition strategy.

Regulatory and Commercial Framework

The operational landscape of the wholesale electricity market should inspire confidence in participants and potential investors and NERC should play a pivotal role in driving this.

The ultimate objective of the privatisation process is to establish an electricity market driven by contractual agreements among participants. A step in the process is the establishment of the wholesale market where electricity trading will take place. Considering the uncertainties that come with such innovative actions it is important to identify and implement mitigation measures to address economic and transition risks that are likely to arise.

There may be hurdles during the transition process. Therefore, a robust risk management process is required to ensure that the establishment of the wholesale market is not stalled for a significant period or indefinitely.

To achieve this, we recommend that a Steering Committee be established to guide the transition process with clear mandates to identify risks and recommend feasible mitigation measures. This will ensure the achievement of the objective.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NERC to establish a Steering Committee made up of stakeholders in NESI to drive the wholesale electricity market transition process.	Short term (1 – 2 years)	NERC, NBET, NISO, TCN, DISCOs, GENCOs, TCN, State Regulators/Commissioners of Energy.
2	Steering Group to identify risks and mitigation measures at federal and state levels	Medium term (3 – 5 years)	NERC, NBET, NISO, TCN, DISCOs, GENCOs, TCN, State Regulators/Commissioners of Energy.
3	NERC to establish an agile risk monitoring framework/ tool to ensure risks are identified and addressed swiftly	Short term (1 – 2 years)	NERC and Steering Committee

Market Structure and Efficiency

To enhance the transition to a wholesale market, there should be significant infrastructure enhancements, particularly in the transmission segment, and the facilitation of private sector participation to make this happen.

Achieving this will require partnerships between public and private actors. The government and NERC must also send the right signals to investors. Specifically, there will be two focus areas;

- Enhance infrastructure efficiency; and
- Private Sector Engagement.

ENHANCE INFRASTRUCTURE EFFICIENCY

The Electricity Act 2023 provides for private investments in the transmission sub-sector of the value chain. To fully realise this objective, it will be vital to create an enabling environment by implementing the outline recommendations. PPP financing should be mobilised to improve the efficiency of transmission infrastructure.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	TCN to assess its Performance Improvement Plan (PIP) to develop a transparent and well-defined financing plan that outlines the scope of investment required, estimated costs, and expected outcomes in each State's region. An embargo should be placed on commissioning new projects for a period to prioritize completion of existing projects.	Short term (1 – 2 years)	TCN, FMoP, NERC.
2	TCN should engage domestic and international financial institutions, including private investors, to come up with innovative financing mechanisms for the funding of infrastructure projects such as bonds, equity investments, and public private partnerships, providing clear guidelines, incentives, and risk-sharing mechanisms to attract investors.	Short term (1 – 2 years)	NERC, TCN, FGN, Ministry of Power, Ministry of Finance

PRIVATE SECTOR ENGAGEMENT

Two key hindrances to private investments in infrastructure are the fact that many projects are not bankable and regulatory uncertainty. This may be addressed by offering guarantees for private investments and providing clear guidelines for cost recovery.

Actions steps and parties involved:

1

ACTION

The State and Federal governments should work with local commercial banks and Multilateral Development Banks (MDB) to create innovative risks instruments tailored to the Nigerian Electricity Supply Industry (NESI) such as guarantees, or insurance schemes, to mitigate investment risks different from the traditional sovereign guarantees.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FGN, FMoP, FMoF.ssioners of Energy.

2

ACTION

Foster collaboration between government agencies, regulatory bodies, financial institutions, and private sector entities to address regulatory and governance challenges effectively.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, State Governments.

3

ACTION

Foster stakeholder engagement and dialogue through consultations, workshops, and public forums to solicit feedback and address concerns related to regulatory and governance issues.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, TCN, NISO, DISCOs, GENCOs, Investors, Financial institutions.

Gas Supply and Energy Mix

Poor gas supply due to lack of payment for gas invoices and inadequate gas supply infrastructure has contributed significantly to poor generation levels over the years. Addressing this is critical for the development of the Wholesale Electricity Market and may be achieved through the following steps:

- Optimizing Gas Supply and Payment Structures
- Renewable Energy Integration

OPTIMIZING GAS SUPPLY AND PAYMENT STRUCTURES

This objective should be achieved through the establishment of a policy for gas payment assurance to optimize upstream and downstream activities and ensure a voluntary supply with appropriate pricing and the implementation of long-term gas supply contracts with bankable securities to stabilize the market.

Actions steps and parties involved:

1

ACTION

Payment discipline must be strengthened further in the NESI by ensuring that firm contracts are in place and adhered to, starting with the Gas Supply Agreements (GSAs) all the way to the service delivery contracts with end users. All regulators (NMDPRA, NERC, State Regulators, and West African Power Pool Regulator) should collaborate to ensure contracts are adhered to, fail safe measures put in place for defaults, and penalties are prescribed and take effect where the conditions are met. Payment discipline will be enhanced with the Federal Government of Nigeria fully clearing the existing liabilities linked to tariff shortfall that has accumulated and not fully funded. There must be a cut-off date set to clear the outstanding, and a mechanism that would meet payment obligations going forward.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FGN, FMoP, FMoF.

2

ACTION

Decouple the gas pricing such that locally originating components are priced in Naira and not indexed to the US Dollar. A committee of the NERC, Ministry of Power, Ministry of Petroleum Resources and Ministry of Finance should be established to decide on how this can be achieved in an equitable manner.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NMDPRA, NERC

RENEWABLE ENERGY INTEGRATION

Integrating renewable energy into the energy mix should be considered to support a diverse and sustainable energy mix. However, the transmission network is currently incapable of wheeling intermittent renewable energy. There needs to be a clear plan including timelines for integration.

Actions steps and parties involved:

1

ACTION

TCN supervised by the Federal Ministry of Power should conduct a renewable energy grid integration study to establish a clear outlook of the phases of renewable energy technologies integration to the grid in terms of capacity scenarios, timing, operational requirements, and technology solutions for stable grid operation.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, FMoP, TCN, NISO

Consumer Protection and Market Operations

The evolution of the NESI from a single to multi-tier market means that distribution services will now be wholly regulated by the State as such it may be necessary for NERC to transfer consumer protection responsibilities to the State regulator.

TRANSFER OF CONSUMER PROTECTION SERVICES

Actions steps and parties involved:

1

ACTION

NERC should gradually move away from consumer protection services and transition these services to state management while they focus more on wholesale regulatory activities.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC, State Regulatory Commissions, Consumer groups.

Financial Stability and Market Development

The NESI is not financially viable given the level of market and tariff liabilities, coupled with high losses that makes meeting obligations as and when due a great challenge. Addressing this is important for attracting the required investments into the NESI as investors are interested in cost recovery and making predictable returns over time.

FINANCIAL VIABILITY AND PLANNING

Actions steps and parties involved:

1

ACTION

Mechanisms should be created to ensure DISCOs compete effectively with IEDNs to be established at sub-national level. This may be done by granting DISCOs licenses to serve as distribution network operator only while other entities are granted supply licences. Alternatively, there may be a moratorium on granting IEDN licenses until the expiration of the successor DISCOs' license.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC, State Regulatory Commissions, Consumer groups, DISCOs.

2

ACTION

Develop a systematic transition plan for NBET's sunset at a feasible timing and ensure that all activities, including contingent liabilities, are budgeted, and monitored effectively.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, NBET, FMoP, FMoF, NELMCO

3

ACTION

Ensure the financial viability of market participants through transparent and justified cost-recovery mechanisms.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, Licensees

Comprehensive Transition Strategy

Some States may wish to establish joint/regional markets in the medium to long-term. To achieve this, proper plans must be developed to ensure a seamless transition.

LONG- TERM PLANNING AND REGIONAL GRID DEVELOPMENT

Actions steps and parties involved:

1

ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
Ensure a proper plan supports the successful transition from the NBET/single-buyer model towards the wholesale electricity market including the simulation of bilateral contracts around ISO and TSP.	Short term (1 – 2 years)	NERC, NBET, Federal Ministry of Power, TCN, NISO

2

ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
Create a mechanism for the management of interfaces between State electricity markets.	Short term (1 – 2 years)	NERC, State Governments, State Regulatory Commissions

State Electricity Market

Provide an action plan for the implementation of the EA-2023 regarding the set-up of State Electricity Markets (SEM) across the country. This should be developed by NERC in collaboration with relevant agencies of the State Governments.

The EA-2023 has made provisions for the creation of a two-tier market which includes the SEM. The provisions of the Act require operationalisation, and this can be done through an action plan that will be used to facilitate a series of steps towards the realisation of the relevant provisions of the EA 2023. The action plan should serve as a guide that will help stakeholders navigate the SEM creation process. Critical areas that should be covered in the action plan include;

- Autonomy and responsible leadership from the State Governments.
- Designing the electricity market to be operated
- Developing an Integrated Resource Plan (IRP)
- A regulatory framework that sets the standard for electricity market regulation in the state learning from existing regulatory experience in the last decade.

- Planning supported by data mining and aligning with State development plans.
- Developing a State Transition Plan that encourages environmental sustainability, energy security and affordability.
- Consumer protection and engagement.

Autonomy and Responsibilities at the State Level

In keeping with the provisions of the Act, all States are to communicate their stance to either fully take over regulation of electricity market within their State or elect to collaborate with NERC to regulate their electricity market. Whichever, States should communicate with clarity on their choices and timelines to NERC to enable proper planning and avoid disruption.

With clarity on the plan of each State, NERC can better determine where to focus available resources and how to structure its operations to respond to the rapidly evolving Nigeria electricity supply sector. To avoid interruptions in service delivery there should be no gaps and assumptions with respect to critical roles and responsibilities. A State electing to take over its State regulation function will immediately assume management of licensees, tariff setting and other critical activities that keep the market operational. On the other hand, NERC continues with such critical functions where a State is yet to assume market regulation responsibility but should be involved in the activities led by NERC. Either way there cannot be ambiguities when it comes to these responsibilities. Other decisions that will follow will be appropriate market design for each State and approach to market development.The three critical responsibilities that should be managed without ambiguities are; (i) The empowerment of State Governments. (ii) Tariff setting and market development; and (ii) Security of assets and infrastructure.

THE EMPOWERMENT OF STATE GOVERNMENTS

State governments should be enabled and equipped with necessary information and guidance that would ensure their electricity market plans align effectively with the national goals.

There should be the establishment of an EA 2023 Transition Forum that will be made up of representatives of the 36 States commissioners of energy and relevant government institutions, and private sector that will foster collaboration and exchange knowledge, best practices, and lessons learned to enhance the effectiveness of state participation initiatives. This platform will engender regular interaction between federal and state energy regulators and federal and state Rural Electrification Agencies to ensure consistency, avoid regulatory conflicts, and align strategies and planning.

Actions steps and parties involved:

1

ACTION

NERC should establish an EA 2023 Transition Forum.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC and state regulators (where applicable), state governments, Federal Ministry of Power (FMoP), Federal Ministry of Finance, federal and state REAs (where applicable), respective DISCOs and their subsidiaries, state energy commissioners, other relevant state commissioners, private sector organisations.

2

ACTION

Develop an online repository that facilitates information sharing and updates state governments on the national electricity access goals and the progress of other states in setting up their markets to attract investment.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, state governments, FMoP, the REA, state energy commissioners.

TARIFF AND MARKET DEVELOPMENT

Tariff setting and management and market development should be with the full involvement of State Governments, either having them take full control or being supported by NERC.

This responsibility is integral to the customer protection and engagement function that State Governments would be assuming as part of transition to the SEM. Every State has its unique socio-economic make-up so the tariff setting process as well as pricing approach should take cognizance of this. It would be cheaper for some States to purchase electricity from neighbouring States if resources locally available to such States for electricity generation are relatively more expensive. This sort of dynamics will influence the approach to market development for each State.

Current tariff setting is implemented along the lines of the various DISCOS franchise areas as a group of States but with transition to SEM this should be broken down along State lines so that it is evident to every investor or service provider willing to participate in a particular SEM, what the prices are and the process for price computation and regulation.

Actions steps and parties involved:

1

ACTION

NERC should plan to support States in tariff setting exercise where requested. State should also consider peer learning among themselves.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, State Governments

2

ACTION

State Governments should consider setting up two electricity markets within the State; one for the connected urban centres and another for unconnected rural areas to drive universal access efforts.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

State Governments, NERC

3

ACTION

The Rural Electrification Agency, working with State Governments, should roll out a detailed electrification plan focusing on decentralized renewable energy systems for remote areas. These first-time electrification plans should be the key reference document for allocating universal access projects in communities with the plans updated regularly and providing geo-spatial information and accessible online so that communities can be matched to the most relevant energy sources and aligned with grid expansion plans and ongoing interconnected mini-grid development.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

State Governments, DISCOs, REA, NERC.

4

ACTION

NERC to activate the process to update the grid code to include infrastructure (e.g. metering along State boundaries) necessary to clearly delineate State market boundaries for effective implementation of the SEM and inter-state transactions.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, DISCOs, TCN, ISO, State Governments.

SECURITY AND INFRASTRUCTURE

Electricity supply infrastructure to be classified by law as critical infrastructure for the security and safety of the society and as such elevate the management of electricity supply infrastructure in terms of security and safety. This shift should be led by the State Governments backed by a wide sensitization of the citizenry to understand the collective responsibility required of everyone to safeguard critical infrastructure. Systems and processes to support reporting and prompt response by law enforcement should be put in place.

Actions steps and parties involved:

1

ACTION

State Governments to pass a law designating electricity supply infrastructure as critical security and safety infrastructure with clear enablers such as penalties and responsibilities placed on law enforcement to protect the infrastructure.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

State Governments,
Law Enforcement Agencies

2

ACTION

All service providers installing infrastructure to be mandated to also install surveillance systems around the infrastructure with access granted to law enforcement agencies for monitoring.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

State Governments, Law Enforcement Agencies, Service Providers, NERC.

3

ACTION

Local security should be provided for power stations through collaboration with security agencies such as the Nigeria Security and Civil Defence Corps (NSCDC).

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC/state regulators, state governments, NSCDC, federal/state REAs, local governments.

4

ACTION

There should be the establishment of Community Consumer Rights and Obligations Committees to curb issues like vandalism, energy theft, and meter bypass, which passes on the associated cost of theft to metered customers that do not bypass.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC/state regulators, state governments, federal/state REAs, local governments, project developers.

5

ACTION

Currently, State High Courts and the Federal High Court have jurisdiction over energy theft and vandalism cases. The heads of the federal and state High Courts should establish mobile courts to try and rule upon energy theft and vandalism cases speedily.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

Federal/state High Courts, NERC/state regulators, DISCOs/DISCOs subsidiaries.

6

ACTION

Sensitization townhall meetings must be organised and implemented to promote a mindset shift that electricity is a commodity to be paid for, not a right or a fully socialised cost.

IMPLEMENTATION DURATION

Long term (> 6 years)

PARTIES INVOLVED

NERC/state regulators, state governments, DISCOs/DISCOs subsidiaries, civil society organisations.

Regulatory Framework and Oversight

The Nigerian Electricity Regulatory Commission (NERC) should develop an electricity market regulation framework that supports the multi-tiered electricity market in Nigeria.

The lessons learned so far through a decade of regulation of the electricity supply industry in Nigeria by NERC should be used to ensure State regulation of electricity markets do not make the same mistakes but continue with the current level of regulation, giving them the head start that NERC did not have. Aligning to global electricity market regulation standards is key, however, electricity markets across the world are unique including the electricity supply market in Nigeria and so creating a regulatory framework is intended to achieve standard electricity market regulation relevant to Nigeria.

Actions steps and parties involved:

1

ACTION

NERC to issue an order on the set up of an intergovernmental committee to serve as governance structure for the electricity market regulation framework along with the guidelines. This committee will decide on reference standards for the regulation of the electricity markets.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, State Governments, FMoP.

2

ACTION

Federal Ministry of Power to work with the Nigerian Governors Forum to endorse the NERC regulatory framework and standards guidelines as the reference document for standardization of electricity regulation in Nigeria bearing in mind that standardization is key for inter-state markets and other market inter-relationships.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

NERC, State Governments, FMoP.

Planning and Implementation

The creation and operation of an electricity market should be hinged on availability of detailed plans that show how resources will be utilised to provide electricity supply to existing and growing demand.

An Integrated Resource Plan (IRP) is a key requirement of a functional electricity market, articulating the specific energy resources available, current, and future consumption, and infrastructure needs. The IRP should be developed and institutionalised for regular updates and reviews and used to guide licensing in the electricity market, ensuring that investments are best coordinated and channelled to areas of need. The IRP should cover critical resource and infrastructure concerns linked to both demand and supply, including energy sources and technologies for electricity generation (hydro, thermal, solar, etc.) all the way to end-user metering.

Actions steps and parties involved:

1

ACTION

States should develop and operationalize IRPs as a recommended starting point for the state market. The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve this working with development partners.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

NERC, State Governments.

2

ACTION

The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve IRPs, working with development partners.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

FMoP, Development Partners, State Governments.

Consumer Protection and Engagement

State Governments should entirely take up the consumer protection and engagement function as a first step of decentralizing electricity market operations and creation of SEMs.

The emphasis for SEMs should be customer protection and engagement through laws and regulations at the State Level. Actions that enhance consumer protect and engagement should be prioritised in the creation of SEM and should include transparency in billing and payments, collaboration in service delivery to the customers where customers have options for service delivery to choose from, awareness creations, transparent reporting and facilitated feedback provision, and involvement in asset monitoring and protection to improve collective ownership and eliminate energy theft.

Actions steps and parties involved:

#	Action	Implementation Duration	Parties Involved
1	With a gradual transition to State electricity markets, which will be focused on consumer engagements and protection, the States should commission a comprehensive review of the metering gap within their jurisdictions and develop a plan to close this gap in collaboration with DISCOs, end-users, local manufacturers, other metering vendors, and financial institutions.	Short term (1 – 2 years)	State Governments, DISCOs, Meter Vendors & Manufacturer, Consumer Groups.
2	To reduce collection loses and encourage cost recovery for energy delivered to remote communities and enhance electrification efforts, regulators and electricity management committees should improve on the enforcement of payments only through approved payment systems for revenue security in the electricity markets.	Short term (1 – 2 years)	State Governments, DISCOs.
3	All electricity service providers within each State are to publish monthly reports on their websites and other media platforms, showing performance on customer protection and engagement linked indices by December 2024.	Short term (1 – 2 years)	State Governments, NERC.
4	The State Governments should pass laws that mandates every community to have a community group responsible for electricity supply issues within the community including representation in policies townhalls, billing, and infrastructure monitoring to prevent vandalism and electricity theft.	Medium term (3 – 5 years)	State Governments, Community Leaders.
5	Mandate all electricity supply service providers within the State to undertake awareness creation activities as frequent as weekly, targeting every aspect of consumer protection such as billing, payments, planned outages, supply delivery schedule, vandalism, and electricity theft with effect from January 2025.	Medium term (3 – 5 years)	State Government, NERC, DISCOs.

Climate Change, Low Carbon Economy and, Just Energy Transition

It is important to achieve harmony in planning and delivery of climate action initiatives from the power sector perspective, with the coordination of all power sector plans being led by the Federal Ministry of Power.

Nigeria has committed to achieving net zero emissions by the year 2060 per the Energy Transition Plan (ETP) and has also committed to Nationally Determined Contributions (NDCs), updating the NDCs in 2021 by setting a target to reducing emission by 20% below business as usual by 2030. In addition, Nigeria has also committed to a Sustainable Energy for All (SEforALL) agenda of 30-30-30 for the power sector, which is a target to achieving 30GW with 30% renewable energy share by 2030. These plans all speak to the same goal but are being pursued independently, which leads to inefficient use of resources. These plans should have influenced activities in the power sector which is not the case judging by the records of generation capacity licensing at NERC. Records show that if all licensed generation come on stream by 2030, total generation capacity will grow to 43GW with only 27% being the share of renewables with about 10% of new coal generation capacity. Considering a lock-in factor of 20 - 40 years for new generation plants (oil, gas, and coal fired) this means that the zero emissions by 2060 target will not be achieved.

On-grid electricity generation in the NESI is made up of about 75% natural gas fired thermal power plants owing to the abundance of gas resources in Nigeria. According to the Nigeria Energy Transition Plan, 25% of total carbon emissions (275MtCO2e) come from activities related to power generation or consumption. Poor access to electricity from the central grid has resulted in the extensive use of fossil fuel powered generators. Improving access to reliable electricity through grid extension will greatly reduce the extensive use of fossil fuel powered generators and lead to a significant reduction in carbon emissions. Achieving universals access through grid extension alone is inefficient. This calls for extensive deployment of renewable energy technologies such as solar or small hydro powered mini-grid and stand-alone systems for residential and commercial uses in remote areas if Nigeria's emissions reduction targets will be achieved.

Due to the unreliable nature of electricity supply from the central grid, industrial and commercial activities rely significantly on diesel powered generators as a result the economy is intensive on carbon emissions. This is true for small businesses and large commercial entities. Any effort to transition businesses and commercial activities from the use of diesel generators must be seamless to avoid adverse socio-economic effects from loss of revenue or jobs. This is the justification for the need to leverage abundant gas resources to improve electricity supply to grow the economic and accelerate industrialization to a level that the economy can organically fund a transition to clean energy for electricity supply.

Two key activities domains are proposed to drive a coordinated approach to transitioning away from carbon intensive fuels and achieving a low carbon economy that ensures earnings and jobs are secured and multiplied. These are; (i) Linking market regulation to energy transition plans. (ii) Renewable energy equipment and supplies market development.

Link market regulation to energy transition plans

All electricity market regulators to commence referencing prevailing energy transition plans in electricity generation capacity licensing activities. This will ensure that plans are evidently linked to market regulation activities in the power sector. This should be approached though the development and operationalisation of the IRPs by the State which should factor a decarbonization of the economy by considering power supply needs of the sectors of agriculture, transport, and industry as demand to be met by electricity supply.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	The Federal Ministry of Power should be responsible for updating the power components of the energy transition plan, facilitated by an intra-sectoral coordination mechanism.	Short term (1 – 2 years)	FMoP, NCCC.
2	NERC and State regulators should consider IRPs and ETPs as the basis for how generation capacities are procured, and generators and suppliers licensed, by approving only license requests that are aligned to the IRP and ETP.	Short term (1 – 2 years)	FMoP, State Governments, NERC.
3	State Governments should work with development partners to prepare projects for electricity supply within their states to an investment-ready or turnkey stage for investors to take up, including applying viability gap funding mechanisms for rural areas. The prepared projects should have key elements secured such as land, permits, licenses, right-of-way, and offtake arrangements.	Medium term (3 – 5 years)	State Governments, Financial Institutions, Mini-grid developers.

Renewable Energy Equipment and Supplies Market Development

Grow local manufacturing and assembling of renewable energy equipment and supplies to 50% of total consumption by 2030, seeing that from the net zero scenario of the ETP projects Nigeria will need to have 197GW of installed solar generation capacity to achieve its targets.

This implies significant deployment of renewable energy equipment and supplies, which are currently being imported, putting a strain on the local currency. The transition to renewable energy sources can only be feasible if local manufacturing of renewable energy equipment and supplies also grows. Thus, there should be concerted efforts to establish and grow activities around capacity building, research and development, technology transfer, and incentivising of Original Equipment Manufacturers (OEMs) to set shop in Nigeria.

Actions steps and parties involved:

1

ACTION

Electricity market regulators should integrate market development activities to regulatory functions through enhancement of capacity for mini-grid development, and systematic licensing that prioritizes renewable energy and mandates developers to purchase locally made equipment and supplies.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

State Government, NERC.

2

ACTION

NERC should consider introducing a clean energy levy on tariffs to fund activities such as research and development, technology transfer, and capacity building to facilitate a well-managed transition to renewable energy technologies.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

State Government, NERC.

3

ACTION

The State Government should prioritize rural communities for the creation of an enabling environment to encourage citing of renewable energy equipment and supplies manufacturing activities, especially those hosting isolated mini-grids.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

State Government, mini-grid developer.

Human Capital and National Content Development

Prepare the power sector workforce and businesses to remain relevant by executing a nationwide human capital and national content capacity development program to be funded by a combination of budgetary allocations and counterpart funding from donor agencies.

This is to be focused on equipping the youthful population with skills that will make them relevant in a renewable energy powered economy. Also, relevant existing business owners in the power sector will also be enabled to transition their businesses. For instance, generator sales and repair businesses should be targeted for business development service delivery to enable them transition to businesses such as assembly and sales of renewable energy equipment and supplies like solar panels, lithium-ion batteries, inverters, among other equipment and supplies.

The short to medium term goal of the human capital and national content development program is to ensure good quality service delivery and standardization of renewable energy equipment and services. This is a self-enhancing effort because the renewable energy market will thrive to the degree of confidence end users have, which comes from consistent delivery of top-quality services. Consequently, a thriving market will create jobs and business opportunities for more talents to be engaged and businesses to transition their operations appropriately.

The goal of the human capital and national content development targets can be realized through advancing the following objectives of; (i) Incentivising the provision and uptake of capacity building activities. (ii) creating a vibrant market for renewable energy equipment, supplies, and services.

Incentivising the Provision and Uptake of Capacity Building Activities

Renewable energy businesses to be provided support to renumerate and train entry level workforce and support the transitioning of business to renewable energy products and services through the delivery of business development services.

This effort is to be in partnership with development partners and should include standardization of skills that entry level trainees must acquire within a period of 6 months to 1 year. Certificates should be issued to participants that go through the process successfully which will be checked through standardized competency tests.

Similarly, businesses that have successfully transitioned to clean energy services from erstwhile businesses that promote activities that lead to carbon emissions will be licensed to participate in renewable energy service delivery activities.

Actions steps and parties involved:

	ACTION	IMPLEMENTATION DURATION	PARTIES INVOLVED
1	NAPTIN to conduct a comprehensive assessment of skill gaps and workforce needs as well as value chain gaps across the electricity value chain. This will inform areas to commission skill acquisition and business development services.	Short term (1 – 2 years)	NERC, FMoP, NAPTIN.
2	The Federal Ministry of Power to formalize on-the-job training as a means of skill acquisition and certification for the power sector, with an emphasis on addressing gender equality and barriers to career advancement for women.	Medium term (3 – 5 years)	FMoP, NERC, State Governments, NAPTIN, COREN.
3	FMoP to develop and commission a capacity development program and energy transition business development services provision program for power sector businesses.	Medium term (3 – 5 years)	FMoP, Donor Agencies, Power Sector businesses.

Creating a Vibrant Market for Renewable Energy Products and Services

Through market regulation and other policy incentives, improve the use of renewable energy equipment, spares, and services across the electricity supply markets. This will encourage businesses and professionals enjoy patronage and not be tempted to downplay renewable energy line of products and services in favour of electricity supply services that are not clean energy.

Actions steps and parties involved:

1

ACTION

Develop and enforce a robust local content policy that mandates the use of locally produced goods and services in the electricity supply sector. Policies could be fiscal incentives such as tax breaks, tax rebates, and operational support, particularly targeting local manufacturing and production.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

FMoP, NERC, State Governments.

2

ACTION

Direct communities to form electricity supply infrastructure management committees led by youth and women. This should foster community ownership and accountability for electricity infrastructure. Community structures are to be renumerated from proceeds levied on whistle blowing, reporting and resolution of faults at community level.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

FMoP, State Governments, NERC, DISCOs.

3

ACTION

NEMSA to commence weekly consumer education programs focused on identification of types and quality of equipment and spares in the power sector as well as what to look out for to rate the quality and standard of equipment. This will help identify quacks and protect the integrity of the nascent local electricity supply industry.

IMPLEMENTATION DURATION

Short term (1 – 2 years)

PARTIES INVOLVED

FMoP, NEMSA, NERC, State Governments.

4

ACTION

Execute a manufacturing business incubation / acceleration program focused on providing capacity building in addition to grants to aid pivoting business operations to renewable energy products and services and scaling operations of existing companies.

IMPLEMENTATION DURATION

Medium term (3 – 5 years)

PARTIES INVOLVED

FMoP, NERC.

APPENDIX

All the policy recommendations have been compiled in the table below and ordered with the short term policy recommendations at the top followed by the medium term policies and finally the long term.

Table 8 - Compilation of all policy recommendations

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
NELMCO should implement the directive to take off all tariff shortfall liabilities from DISCO books and put a plan in place on how assets in its possession will be leveraged to repay over time.	NELMCO, DISCOs, NERC, DMO, BPE, Federal Ministry of Power, Federal Ministry of Finance.	Sustained NESI Recapitalization
The plans for the sale of NDPHC power plants should be followed through and concluded to allow for increased investments and expertise to increase generation availability on the grid.	NDPHC, MOFI, BPE, State Governments, NERC.	Sustained NESI Recapitalization
NERC should issue a licensee 'recapitalization order' that will trigger the need to issue new shares and attract fresh capital to bolster balance sheets of the DISCOs and GENCOs, reduce ATC&C losses in DISCOs and recover GENCO capacity. Shareholders unable to respond to cash call are either diluted or have the option to divest their shareholding.	NERC, NDPHC, DISCOs, GENCOs, State Governments, MOFI.	Sustained NESI Recapitalization
An order should be issued to all licensees to digitalize operations for automated data collection and reporting and make automated data management a performance metric of licensees.	NERC, GENCO, TCN, DISCOs.	Sustained NESI Recapitalization
A corporate governance audit of the market licensees should be undertaken to provide an understanding of corporate governance issues.	NERC, GENCO, TCN, DISCOs, Reputable consultants.	Sustained NESI Recapitalization
Environment, Social, and Governance (ESG) reporting should be integrated into annual reporting expectations of licensees captured in NERC reports.	NERC, GENCO, TCN, DISCOs.	Sustained NESI Recapitalization
NERC to align its operations with the transitioning into a multi-tier market.	NERC	Sustained NESI Recapitalization
Ministry of Power should collaborate with the Nigeria Governors Forum (NGF) to establish a Standing Committee of NERC and State Commissioners of Energy by December 2024 to ensure minimum levels of standards and codes across the country as we transition to sub-national electricity markets to guarantee standardisation of service delivery.	FMoP, NERC, State Governments.	Sustained NESI Recapitalization

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
NERC should undertake an extraordinary tariff review that seeks to achieve the following among others; Restructure the number of service-bands to better reflect the disparities in hours of supply. Update tariffs for life-line customers (energy consumption at 50kWh/month at N4/kWh) to prevailing conditions. Increase lifeline consumption threshold to accommodate more customers considering the size of the population considered poor and this can be updated with changes in economic indices.	NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning.	Sustained NESI Recapitalization
NERC should establish the Power Consumer Assistant Fund (PCAF) as provisioned in EA 2023 as sole subsidy application mechanism in NESI. Electricity Subsidy at the production level should be linked to gas supply to mitigate foreign exchange risk. Subsidy at the consumption level should be targeted at energy consumption thresholds of consumers rather than supply to feeders considering that the same feeder could supply both affluent and disadvantaged customer categories.	NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.	Sustained NESI Recapitalization
The Ministry of Finance should prepare a financing plan for subsidy application over a set period of 5 years which will be managed through PCAF. The source of funding the PCAF and its operations should be institutionalized not needing regular budgetary allocations and approvals.	NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.	Sustained NESI Recapitalization
The FMoP should secure the necessary approvals for the issuing of promissory notes to GENCOs and GASCOs to offset legacy liabilities and implement actions that are conditions precedent for issuing the promissory notes.	DMO, NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, the Presidency.	Sustained NESI Recapitalization
NERC should include tariff shortfalls in future tariffs in anticipation that generation capacity will grow, and unit cost drops and the resulting savings will net-off inserted tariff shortfall. Another source of funding can be the issuance of bonds.	NERC, ISO, DISCOs, GENCOs, TCN.	Sustained NESI Recapitalization
NERC to facilitate the provision of more ancillary services in NESI by designing clear pricing for additional services such as voltage regulation or energy reserves, and energy imbalance etc.	NERC, ISO, GENCOs, TCN.	Sustained NESI Recapitalization
NERC should develop a 'bulk electricity trading transition plan' as part of a regulation for the licensing of ancillary service providers.	NERC, ISO, GENCOs, TCN.	Sustained NESI Recapitalization
NERC should issue a guideline on how DISCOs can access the Meter Acquisition Fund (MAF) being set aside monthly for procurement of meters. DISCOs should provide a comprehensive meter deployment plan across the franchise area and along state lines, which should be published on their website for customer information.	NERC, DISCOS, Consumer groups.	Sustained NESI Recapitalization
NERC to strengthen awareness creation and sensitization activities on the rights of customer and expectation, not limited to cost recovery for financing of asset purchase, access to meters, estimated billing, energy theft. This action should be independent of the awareness creation by DISCOs and done regularly through social media and traditional media platforms.	NERC, Consumer groups, Media.	Sustained NESI Recapitalization

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
The DISCOs to create community capacity development programs as part of CSR and ESG goals for implementation across communities within their franchise areas.	Federal/state regulators, federal/state REAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers, NAPTIN.	Universal Access, Capitalization and Reliability
NERC to establish a Steering Committee made up of stakeholders in NESI to drive the wholesale electricity market transition process.	NERC, NBET, NISO, TCN, DISCOs, GENCOs, TCN, State Regulators/Commissioners of Energy.	National Wholesale Electricity Market
Steering Group to identify risks and mitigation measures at federal and state levels	NERC, NBET, NISO, TCN, DISCOs, GENCOs, TCN, State Regulators/Commissioners of Energy.	National Wholesale Electricity Market
NERC to establish an agile risk monitoring framework/ tool to ensure risks are identified and addressed swiftly	NERC and Steering Committee	National Wholesale Electricity Market
TCN to assess its Performance Improvement Plan (PIP) to develop a transparent and well-defined financing plan that outlines the scope of investment required, estimated costs, and expected outcomes in each State's region. An embargo should be placed on commissioning new projects for a period to prioritize completion of existing projects.	TCN, FMoP, NERC.	National Wholesale Electricity Market
TCN should engage domestic and international financial institutions, including private investors, to come up with innovative financing mechanisms for the funding of infrastructure projects such as bonds, equity investments, and public private partnerships, providing clear guidelines, incentives, and risk-sharing mechanisms to attract investors.	NERC, TCN, FGN, Ministry of Power, Ministry of Finance	National Wholesale Electricity Market
The State and Federal governments should work with local commercial banks and Multilateral Development Banks (MDB) to create innovative risks instruments tailored to the Nigerian Electricity Supply Industry (NESI) such as guarantees, or insurance schemes, to mitigate investment risks different from the traditional sovereign guarantees.	NERC, FGN, FMoP, FMoF.	National Wholesale Electricity Market
Foster collaboration between government agencies, regulatory bodies, financial institutions, and private sector entities to address regulatory and governance challenges effectively.	NERC, FMoP, Federal Ministry of Finance, Federal Ministry of Budget and National Planning, State Governments.	National Wholesale Electricity Market
Foster stakeholder engagement and dialogue through consultations, workshops, and public forums to solicit feedback and address concerns related to regulatory and governance issues.	NERC, FMoP, TCN, NISO, DISCOs, GENCOs, Investors, Financial institutions.	National Wholesale Electricity Market

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
Payment discipline must be strengthened further in the NESI by ensuring that firm contracts are in place and adhered to, starting with the Gas Supply Agreements (GSAs) all the way to the service delivery contracts with end users. All regulators (NMDPRA, NERC, State Regulators, and West African Power Pool Regulator) should collaborate to ensure contracts are adhered to, fail safe measures put in place for defaults, and penalties are prescribed and take effect where the conditions are met. Payment discipline will be enhanced with the Federal Government of Nigeria fully clearing the existing liabilities linked to tariff shortfall that has accumulated and not fully funded. There must be a cut-off date set to clear the outstanding, and a mechanism that would meet payment obligations going forward.	NERC, FGN, FMoP, FMoF.	National Wholesale Electricity Market
Decouple the gas pricing such that locally originating components are priced in Naira and not indexed to the US Dollar. A committee of the NERC, Ministry of Power, Ministry of Petroleum Resources and Ministry of Finance should be established to decide on how this can be achieved in an equitable manner.	NMDPRA, NERC	National Wholesale Electricity Market
TCN supervised by the Federal Ministry of Power should conduct a renewable energy grid integration study to establish a clear outlook of the phases of renewable energy technologies integration to the grid in terms of capacity scenarios, timing, operational requirements, and technology solutions for stable grid operation.	NERC, FMoP, TCN, NISO	National Wholesale Electricity Market
Develop a systematic transition plan for NBET's sunset at a feasible timing and ensure that all activities, including contingent liabilities, are budgeted, and monitored effectively.	NERC, NBET, FMoP, FMoF, NELMCO	National Wholesale Electricity Market
Ensure the financial viability of market participants through transparent and justified cost-recovery mechanisms.	NERC, Licensees	National Wholesale Electricity Market
Ensure a proper plan supports the successful transition from the NBET/ single-buyer model towards the wholesale electricity market including the simulation of bilateral contracts around ISO and TSP.	NERC, NBET, Federal Ministry of Power, TCN, NISO	National Wholesale Electricity Market
Create a mechanism for the management of interfaces between State electricity markets.	NERC, State Governments, State Regulatory Commissions	National Wholesale Electricity Market
NERC should establish an EA 2023 Transition Forum.	NERC and state regulators (where applicable), state governments, Federal Ministry of Power (FMoP), Federal Ministry of Finance, federal and state REAs (where applicable), respective DISCOs and their subsidiaries, state energy commissioners, other relevant state commissioners, private sector organisations.	State Electricity Market
Develop an online repository that facilitates information sharing and updates state governments on the national electricity access goals and the progress of other states in setting up their markets to attract investment.	NERC, state governments, FMoP, the REA, state energy commissioners.	State Electricity Market

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
NERC should plan to support States in tariff setting exercise where requested. State should also consider peer learning among themselves.	NERC, State Governments	State Electricity Market
The Rural Electrification Agency, working with State Governments, should roll out a detailed electrification plan focusing on decentralized renewable energy systems for remote areas. These first-time electrification plans should be the key reference document for allocating universal access projects in communities with the plans updated regularly and providing geo-spatial information and accessible online so that communities can be matched to the most relevant energy sources and aligned with grid expansion plans and ongoing interconnected mini-grid development.	State Governments, DISCOs, REA, NERC.	State Electricity Market
NERC to activate the process to update the grid code to include infrastructure (e.g. metering along State boundaries) necessary to clearly delineate State market boundaries for effective implementation of the SEM and inter-state transactions.	NERC, DISCOs, TCN, ISO, State Governments.	State Electricity Market
State Governments to pass a law designating electricity supply infrastructure as critical security and safety infrastructure with clear enablers such as penalties and responsibilities placed on law enforcement to protect the infrastructure.	State Governments, Law Enforcement Agencies	State Electricity Market
All service providers installing infrastructure to be mandated to also install surveillance systems around the infrastructure with access granted to law enforcement agencies for monitoring.	State Governments, Law Enforcement Agencies, Service Providers, NERC.	State Electricity Market
Local security should be provided for power stations through collaboration with security agencies such as the Nigeria Security and Civil Defence Corps (NSCDC).	NERC/state regulators, state governments, NSCDC, federal/state REAs, local governments.	State Electricity Market
NERC to issue an order on the set up of an intergovernmental committee to serve as governance structure for the electricity market regulation framework along with the guidelines. This committee will decide on reference standards for the regulation of the electricity markets.	NERC, State Governments, FMoP.	State Electricity Market
Federal Ministry of Power to work with the Nigerian Governors Forum to endorse the NERC regulatory framework and standards guidelines as the reference document for standardization of electricity regulation in Nigeria bearing in mind that standardization is key for inter-state markets and other market inter-relationships.	NERC, State Governments, FMoP.	State Electricity Market
With a gradual transition to State electricity markets, which will be focused on consumer engagements and protection, the States should commission a comprehensive review of the metering gap within their jurisdictions and develop a plan to close this gap in collaboration with DISCOs, end-users, local manufacturers, other metering vendors, and financial institutions.	State Governments, DISCOs, Meter Vendors & Manufacturer, Consumer Groups.	State Electricity Market

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
To reduce collection loses and encourage cost recovery for energy delivered to remote communities and enhance electrification efforts, regulators and electricity management committees should improve on the enforcement of payments only through approved payment systems for revenue security in the electricity markets.	State Governments, DISCOs.	State Electricity Market
All electricity service providers within each State are to publish monthly reports on their websites and other media platforms, showing performance on customer protection and engagement linked indices by December 2024.	State Governments, NERC.	State Electricity Market
The Federal Ministry of Power should be responsible for updating the power components of the energy transition plan, facilitated by an intra-sectoral coordination mechanism.	FMoP, NCCC.	Climate Change, Low Carbon Economy, and Just Energy Transition
NERC and State regulators should consider IRPs and ETPs as the basis for how generation capacities are procured, and generators and suppliers licensed, by approving only license requests that are aligned to the IRP and ETP.	FMoP, State Governments, NERC.	Climate Change, Low Carbon Economy, and Just Energy Transition
NAPTIN to conduct a comprehensive assessment of skill gaps and workforce needs as well as value chain gaps across the electricity value chain. This will inform areas to commission skill acquisition and business development services.	NERC, FMoP, NAPTIN.	Human Capital and National Content Development
Develop and enforce a robust local content policy that mandates the use of locally produced goods and services in the electricity supply sector. Policies could be fiscal incentives such as tax breaks, tax rebates, and operational support, particularly targeting local manufacturing and production.	FMoP, NERC, State Governments.	Human Capital and National Content Development
Direct communities to form electricity supply infrastructure management committees led by youth and women. This should foster community ownership and accountability for electricity infrastructure. Community structures are to be renumerated from proceeds levied on whistle blowing, reporting and resolution of faults at community level.	FMoP, State Governments, NERC, DISCOs.	Human Capital and National Content Development
NEMSA to commence weekly consumer education programs focused on identification of types and quality of equipment and spares in the power sector as well as what to look out for to rate the quality and standard of equipment. This will help identify quacks and protect the integrity of the nascent local electricity supply industry.	FMoP, NEMSA, NERC, State Governments.	Human Capital and National Content Development
NERC to issue an order to all DISCOs on the unbundling of operation of DISCOs along State lines to ease recapitalization and in anticipation of the creation of State electricity markets.	NERC, DISCOs, BPE, State Governments, MOFI.	Sustained NESI Recapitalization

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
The regulatory provisions for sub-franchising should be enhanced to drive DISCOs to embrace sub-franchising as a means of improving the distribution and supply side of the NESI. This can be through a NERC order to DISCOs to submit a binding franchising plan to attract investment for loss reduction and improved service delivery, learning from existing franchising models. This plan should be along state lines in consideration of the developing multi-tiered electricity market.	NERC, DISCOs.	Sustained NESI Recapitalization
NERC should issue an order for licensees to build a web-based data centre with a frontend accessible to the public and reporting metrics such as customer service levels, fault resolution, and compliance with orders.	NERC, GENCO, TCN, DISCOs.	Sustained NESI Recapitalization
NERC to improve the implementation of relevant instruments such as the regulation on third party investment in electricity networks to enhance the recognition and cost recovery for investments done by third parties including customers.	NERC, DISCOS, Consumer groups.	Sustained NESI Recapitalization
State Governments should set up electricity management committees in communities to take responsibility for the management of electricity supply assets within their communities such as lines and distribution transformers. This committees will have the mandate of monitoring the assets for vandalism and energy theft and participating in asset maintenance exercises.	Federal/state regulators, federal/state REAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers.	Universal Access, Capitalization and Reliability
Monitoring and evaluation standards must be set for the community electricity access committees to adequately aid developers with data collection and ensure that factors such as tariffs reflect the realities in the communities while being commercially viable for developers.	Federal/state regulators, federal/state REAs, local governments, community groups (youths, women, etc.), development partners, respective DISCOs and/or their subsidiaries, off-grid developers.	Universal Access, Capitalization and Reliability
Regulators should create and strengthen incentive structures, such as REFIT, Net Metering, and green energy purchase obligations, to attract private investment into the power sector, particularly in underdeveloped and less viable areas.	NERC/state regulators, state governments, DISCOs/ DISCOs subsidiaries, development partners.	Universal Access, Capitalization and Reliability
The expansion of the grid should be accelerated where feasible with public private partnership arrangements and grid extensions for economic load centres should be prioritized.	TCN, NERC, private sector.	Universal Access, Capitalization and Reliability
TCN should engage States to discuss expansion and upgrades to transmission assets that cut across their States with a view to partnerships and collaborations that can potentially finance the relevant projects that will spur or unlock more generation capacity into respective States. This move can help prioritise investments and focus on grid stability and commercially viable areas.	TCN, NERC/state regulators, state governments, private sector.	Universal Access, Capitalization and Reliability
Sub-national governments should establish a research and development unit empowered to adapt new technologies to state power needs and source for funding.	NERC/state regulators, private sector, development agencies, DISCOs.	Universal Access, Capitalization and Reliability

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
NERC should collaborate with State governments to undertake research and pilot projects for technologies like run-of-the-river hydropower and promote the use of solar pumps for irrigation to diversify the energy mix and enhance reliability.	NERC/state regulators, state governments, DISCOs, private sector.	Universal Access, Capitalization and Reliability
Creation of a national data repository accessible to all stakeholders and establishment of a platform for data on existing and planned projects generated from different donor-funded programmes to streamline strategic energy access planning. The repository should also contain maps highlighting unserved and underserved areas as well as the existing on-grid and off-grid infrastructure across the country.	NERC/state regulators, state governments, federal/state REAs, DISCOs/DISCOs subsidiaries, TCN, GENCOs.	Universal Access, Capitalization and Reliability
Each state government should create a research and statistics unit to gather and validate data periodically on unserved and underserved areas and monitor energy services.	State governments, federal/state REAs, DISCOs/DISCOs subsidiaries.	Universal Access, Capitalization and Reliability
NERC should gradually move away from consumer protection services and transition these services to state management while they focus more on wholesale regulatory activities.	NERC, State Regulatory Commissions, Consumer groups.	National Wholesale Electricity Market
Mechanisms should be created to ensure DISCOs compete effectively with IEDNs to be established at sub-national level. This may be done by granting DISCOs licenses to serve as distribution network operator only while other entities are granted supply licences. Alternatively, there may be a moratorium on granting IEDN licenses until the expiration of the successor DISCOs' license.	NERC, State Regulatory Commissions, Consumer groups, DISCOs.	National Wholesale Electricity Market
State Governments should consider setting up two electricity markets within the State; one for the connected urban centres and another for unconnected rural areas to drive universal access efforts.	State Governments, NERC	State Electricity Market
There should be the establishment of Community Consumer Rights and Obligations Committees to curb issues like vandalism, energy theft, and meter bypass, which passes on the associated cost of theft to metered customers that do not bypass.	NERC/state regulators, state governments, federal/state REAs, local governments, project developers.	State Electricity Market
Currently, State High Courts and the Federal High Court have jurisdiction over energy theft and vandalism cases. The heads of the federal and state High Courts should establish mobile courts to try and rule upon energy theft and vandalism cases speedily.	Federal/state High Courts, NERC/state regulators, DISCOs/DISCOs subsidiaries.	State Electricity Market
States should develop and operationalize IRPs as a recommended starting point for the state market. The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve this working with development partners.	NERC, State Governments.	State Electricity Market

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
The Federal Ministry of Power could work with the NGF to coordinate support for the States to achieve IRPs, working with development partners.	FMoP, Development Partners, State Governments.	State Electricity Market
The State Governments should pass laws that mandates every community to have a community group responsible for electricity supply issues within the community including representation in policies townhalls, billing, and infrastructure monitoring to prevent vandalism and electricity theft.	State Governments, Community Leaders.	State Electricity Market
Mandate all electricity supply service providers within the State to undertake awareness creation activities as frequent as weekly, targeting every aspect of consumer protection such as billing, payments, planned outages, supply delivery schedule, vandalism, and electricity theft with effect from January 2025.	State Government, NERC, DISCOs.	State Electricity Market
State Governments should work with development partners to prepare projects for electricity supply within their states to an investment-ready or turnkey stage for investors to take up, including applying viability gap funding mechanisms for rural areas. The prepared projects should have key elements secured such as land, permits, licenses, right-of-way, and offtake arrangements.	State Governments, Financial Institutions, Mini-grid developers.	Climate Change, Low Carbon Economy, and Just Energy Transition
Electricity market regulators should integrate market development activities to regulatory functions through enhancement of capacity for mini-grid development, and systematic licensing that prioritizes renewable energy and mandates developers to purchase locally made equipment and supplies.	State Government, NERC.	Climate Change, Low Carbon Economy, and Just Energy Transition
NERC should consider introducing a clean energy levy on tariffs to fund activities such as research and development, technology transfer, and capacity building to facilitate a well-managed transition to renewable energy technologies.	State Government, NERC.	Climate Change, Low Carbon Economy, and Just Energy Transition
The State Government should prioritize rural communities for the creation of an enabling environment to encourage citing of renewable energy equipment and supplies manufacturing activities, especially those hosting isolated mini-grids.	State Government, mini-grid developer.	Climate Change, Low Carbon Economy, and Just Energy Transition
The Federal Ministry of Power to formalize on-the-job training as a means of skill acquisition and certification for the power sector, with an emphasis on addressing gender equality and barriers to career advancement for women.	FMoP, NERC, State Governments, NAPTIN, COREN.	Human Capital and National Content Development
FMoP to develop and commission a capacity development program and energy transition business development services provision program for power sector businesses.	FMoP, Donor Agencies, Power Sector businesses.	Human Capital and National Content Development

ACTIONS	PARTIES INVOLVED	POLICY CATEGORY
Execute a manufacturing business incubation / acceleration program focused on providing capacity building in addition to grants to aid pivoting business operations to renewable energy products and services and scaling operations of existing companies.	FMoP, NERC.	Human Capital and National Content Development
Sensitization townhall meetings must be organised and implemented to promote a mindset shift that electricity is a commodity to be paid for, not a right or a fully socialised cost.	NERC/state regulators, state governments, DISCOs/DISCOs subsidiaries, civil society organisations.	State Electricity Market

FOOTNOTES

[1] The Electricity Act (EA), 2023 is a significant legislative framework in Nigeria, aimed at reforming the power sector by attracting investment into the sector.

[2] Power Sector Reform Coordination Working Group Analysis on NESI Liability, 2023.

[3] United States Agency for International Development (USAID), 2024.

[4] The Nigeria Electrification Project (NEP) is a Federal Government initiative aimed at providing electricity to households, micro, small, and medium enterprises (MSMEs), educational institutions, and healthcare facilities in underserved and unserved rural communities.

[5] Extrapolated from NERC quarterly reports, 2021.

[6] World Bank, Nigeria Electrification Project, 2018.

[7] KPMG, Report on Revision of Baseline Indices for the NESI, 2021.

[8] Association of Power Generation Companies, 2024.

[9] KPMG, Report on Revision of Baseline Indices for the NESI, 2021.

[10] NERC quartely report, fourth quarter, 2022.

[11] World Bank, Nigeria Electrification Project, 2018.

[12] https://www.vanguardngr.com/2024/05/n1-3trn-debt-weighs-down-gencos-availability-capacity-to-35/

[13] Energy Transition Plan (ETP).

[14] Reported under grid milestones of the systems operators website:
https://www.niggrid.org/GridMileStones.

[15] NERC third quarter 2023 report.

[16] This includes the installation of Remote Terminal Units (RTUs) to ensure network real time monitoring.

[17] Bureau of Public Enterprises (BPE), "Review of the performance of the distribution companies (DISCO's)" 2022.

[18] NERC third quarter 2023 report.

[19] The Enugu state electricity market, driven by the Enugu state electricity law, 2023, aims to leverage the opportunities provided by the EA 2023, to create a robust state electricity market that supports economic growth and attracts investment to the state.

[20] World Bank, "The Energy Progress Report: Tracking SDG 7", 2023.

[21] These CBN interventions include th Nigerian Electricity Market Stabilization Facility 1-3, National Mass Metering Plan and Nigerian Bulk Eletricity Trading Payment Guarantee Facility.

[22] Disclosed by NERC chairman at the ministrerial retreat on the integrated national electricity policy and strategic implementation plan.

[23] The changes driven by the elecrticity act, 2023 is expected to improve liquidity and investment attractiveness to the power sector.

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