Vision: Electricity on Demand

2023

Market Competition Report

Nigerian Electricity Regulatory Commission
Plot 1387 Cadastral Zone A00
Central Business District
PMB 136, Garki Abuja
www.nerc.gov.ng


NIGERIAN ELECTRICITY REGULATORY COMMISSION
NERC

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The market competition report is prepared in compliance with Section 7 (2) (C) of the Electricity Act ("EA") 2023 which mandates the Commission to prepare an annual report for the Minister on the market condition and the potential for more competition in the Nigerian Electricity Supply Industry ("NESI"). This report reviews the level of competition in the NESI and assesses the progress made in transitioning to a more competitive electricity market. The findings consequently provide the Minister an update on the market development and posit the Commission's viewpoint on the transition to a more competitive market pursuant to Section 8 of EA.

The report is directed at a wide spectrum of readers including government officials and institutions, the private sector, energy economists, engineers, financial and market analysts, investors, and general readers.

The report is freely available to stakeholders of NESI, government agencies, and corporations. Individuals can also access any particular issue freely from the Commission's website: www.nerc.gov.ng

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Lists of Acronyms

ADR	Alternative Dispute Resolution
AEDC	Abuja Electricity Distribution Plc
ATC&C	Aggregate Technical, Commercial & Collection Losses
BEDC	Benin Electricity Distribution Plc
CAPEX	Capital Expenditure
DisCos	Distribution Companies
DSO	Distribution System Operator
EA	Electricity Act
ECR	Eligible Customer Regulations
EEDC	Enugu Electricity Distribution Plc
EKEDP	Eko Electricity Distribution Plc
EPSRA	Electric Power Sector Reform Act
FGN	Federal Government of Nigeria
GenCos	Generation Companies
GWh	Gigawatts hour
IBEDC	Ibadan Electricity Distribution Plc
IEDN	Independent Electricity Distribution Network
IE	Ikeja Electric Plc
IoC	International Oil Companies
IPP	Independent Power Plant
JED	Jos Electricity Distribution Plc
KAEDC	Kaduna Electricity Distribution Company Plc
KEDCO	Kano Electricity Distribution Plc
LTEM	Long-Term Electricity Market
MAF	Meter Acquisition Fund
MAP	Meter Assets Provider
MO	Market Operator
MTEM	Medium-Term Electricity Market
MW	Megawatts
MWh	Megawatts hour
MYTO	Multi-Year Tariff Order
NBET	Nigerian Bulk Electricity Trading Plc
NERC	Nigerian Electricity Regulatory Commission
NESI	Nigerian Electricity Supply Industry
NIPP	National Integrated Power Projects
NMMP	National Mass Metering Programme
NDPHC	Niger Delta Power Holding Company

PHED-	Port Harcourt Electricity Distribution Plc
SO	System Operator
TCN	Transmission Company of Nigeria Plc
TEM	Transitional Electricity Market
TLF	Transmission Loss Factor
TSP	Transmission Service Provider
YEDC	Yola Electricity Distribution Plc

Executive Summary

1. Objective and Legal Authority of the Report

Objective: This report reviews the level of competition in the Nigerian Electricity Supply Industry ("NESI") in 2023 and assesses the progress towards a transition to a more competitive market. The objective is to provide an update to the Minister and present the Commission's viewpoint towards a possible declaration of a more competitive market.

- *Section 7(2)(c) of the Electricity Act 2023 mandates the Commission to prepare the Market Competition Report for the Honourable Minister of Power*

Legal Authority: The report is prepared in compliance with Section 7(2)(c) of the Electricity Act 2023 (the "Act") which provides that the Commission shall, "*...Prepare and submit annual reports on the market conditions, including advice to the Minister on the end of the transitional electricity market and the establishment and operational dates for the medium to long term markets respectively taking into consideration the satisfaction of the preconditions and features for operationalising the medium term and the long-term market as prescribed in the market rules.*"

2. The Nigerian Electricity Market

The Nigerian Electricity Supply Industry ("NESI"): Pursuant to the enactment of the repealed EPSRA, the Federal Government of Nigeria ("FGN") unbundled the Power Holding Company of Nigeria ("PHCN) from a vertically integrated monopoly into 18 separate companies – consisting of six (6) On-grid Generating Companies ('GenCos'), one (1) Transmission Company ('TCN') and eleven (11) Distribution Companies ('DisCos'). The GenCos and DisCos were subsequently privatised in 2013 while the ownership and management of TCN remained with the FGN.

The operation of the Nigerian electricity grid is managed by the System Operator ("SO") with the collaboration of the Distribution System Operators ("DSO"). The operation of the market structure (i.e., contract, market rules, subsidies), invoicing, and settlement in the Nigerian electricity market are managed by the Market Operator

("MO") and the Nigerian Bulk Electricity Trader Plc ("NBET") under the regulatory oversight of the Commission.

Market Stages: To ensure an orderly transition of the Nigerian electricity market, the Market Rules and Section 7(1) of the Electricity Act provides for the market to pass through four (4) developmental stages namely:

- *Pre-Transitional Electricity Market ("Pre-TEM") stage* – during which preparation is made for the corporate unbundling, commercialisation and privatisation of the PHCN Successor companies. The Pre-TEM officially commenced upon the privatization of the successor GenCos and the divestment of the 60% majority stake in the DisCos in 2013;
- *The Transitional Electricity Market ("TEM") stage* – characterised by contract-based arrangements largely supported by the NBET – '*the Special Bulk Trader*' for electricity trading through Power Purchase Agreements (PPAs) and Vesting Contracts (VC) and the gradual introduction of competition for entry into the electricity market. The TEM commenced on the 1st of February 2015 following the declaration by the Commission pursuant to the fulfilment of condition precedents ("CPs") set out in the Market Rules;
- *Medium-Term Market ("MTEM") Stage* – characterised by the introduction of generation competition within the wholesale electricity market and centrally administered balancing mechanism for the wholesale electricity market; and

  Long-Term Market ("LTEM") stage – this is similar to the MTEM stage with an increase in the number of participants, characterised by buyers choosing their suppliers and bilateral contracts between buyers and sellers at all levels.

The Pre-TEM officially commenced upon the privatization of the successor GenCos and the divestment of the 60% majority stake in the DisCos in 2013. Pursuant to the fulfilment of condition precedents ("CPs") set out in the Market Rules for the declaration of TEM, TEM commenced on the 1st of February 2015 following the declaration by the Commission

Household Access to Electricity: The average rate of electrification in urban centres of Nigeria is 82.2% while in rural households (which typically have lower incomes) average electrification rate stood at approximately 40%. The World Bank (2021) estimated that 59.5% of the distribution of the tariff subsidy goes to the richest 20% of the households while only 1.5% benefits the poorest 20% which further deepens the access challenge.

Tariffs: Driven by changes in input costs and macroeconomic variables, the real price of electricity (i.e., tariff adjusted for inflation) declined by 11.08% from 2020 to date.

3. Competition in the Nigerian Electricity Market

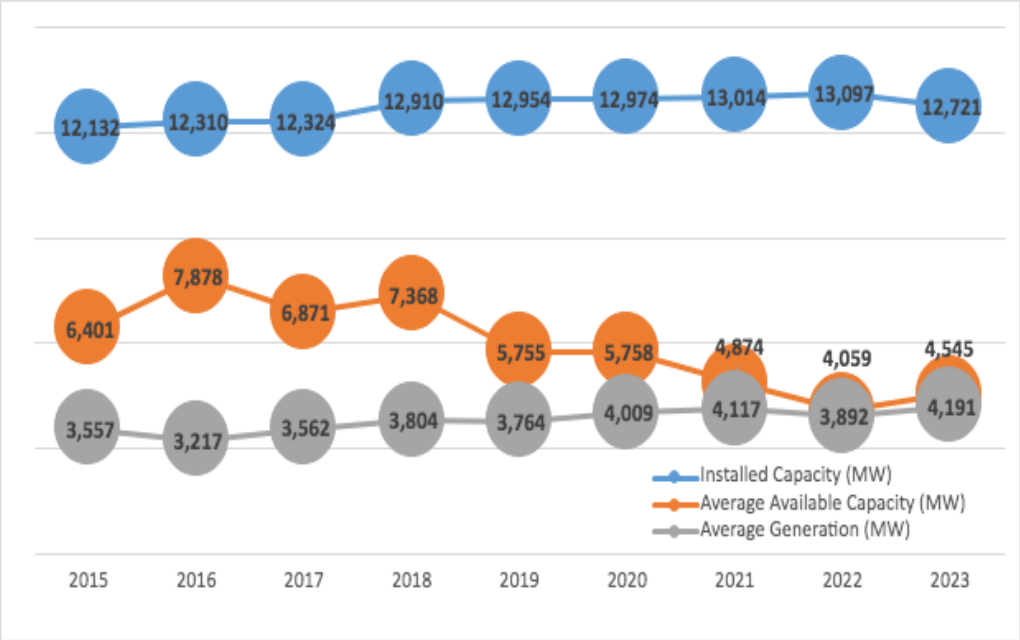
Degree of Privatization Across the Value Chain: Since the reforms that led to the unbundling of the then PHCN, a substantial level of privatisation has occurred in the distribution and generation segment of the value chain. All the distribution companies are now operated by private core investors with a 60% ownership share. The ongoing process to privatise the Eight (8) National Integrated Power Plants ("NIPPs") and to unbundle the Transmission Company of Nigeria Plc ("TCN") will further improve operational efficiency and market competition.

Existence of a Large Number of Potential Competitive Entities: The level of competition in the NESI has substantially increased with the participation of many competitive entities. As of the end of 2023, there were twenty-nine (29) operational On-grid GenCos (owned by fourteen (14) distinct entities), and twelve (12) grid-connected distribution companies in NESI. Further, the underlisted facts are noted about the level of competition in the NESI:

a. Herfindahl-Hirschman Index ("HHI"): The HHI which is a commonly accepted measure of market concentration and used for the determination of competitiveness of a market indicates that there is a substantial level of competition in the generation segment of the NESI value chain, with more competition expected as more generation plants are commissioned.

b. *Electricity Generation and Capacities:* The installed capacity in NESI grew by 12% from 12,132MW as at December 2015 to 13,588MW as at December 2023. The daily average generation of 4,191MWh/h recorded in 2023 was 17.82% more than the daily average generation of 3,557MWh/h recorded in 2015. From 2022 to 2023, the average daily generation rose by 7.7 percent.

Generation Capacity and Average Generation in NESI



While the average available capacity of 4,545MW recorded in 2023 was an increase from the 4,059MW recorded in 2022, it still represents a decline of about 1,856MW from 6,401MW. This apparent decrease in capacity is primarily attributed to changes in the procedure and approach used to assess availability declarations to ensure that only accurate and reliable declarations are accepted.

Existence of Robust Metering and Communication of Infrastructure: Metering and information technology infrastructure has improved substantially compared to 2015. There has been significant improvement in the deployment of grid meters including Internet of Things meters. Further deployment of necessary technology is still

ongoing and at different stages of implementation in the wholesale and retail markets.

a. At the Wholesale Market: Grid metering deployment has been largely achieved. As of December 2023, 99.5% of 11kV feeders and 84.3% of 33kV feeders have been metered. Relative to 2022, the metering rate of 11kV and 33kV feeders increased by 5 percentage points and 10 percentage points respectively.

b. At the Retail Market: As at December 2023, DisCos have metered 79% of their Maximum Demand ("MD") customers (i.e., 84,772 of the 113,856 MD). Relative to 2022, the number of metered MD customers increased by 25,131 from 59,641 in 2022 to 84,772 in 2023.

The improvement in metering rates in the NESI is as a result of the Commission's commitment to ensure transparency in billing and accountability of contracting parties. Specific Commission interventions such as the Credited Advanced Payment for Metering Implementation ("CAPMI"), Meter Assets Provider ("MAP"), and National Mass Metering Programme ("NMMP") accounted for more than 90% of the meters installed since 2013.

4. Engendering Further Competition in the NESI

To further drive the market from its current state to a more competitive state, the Commission initiated the following regulatory interventions in 2023 to engender competition in the market:

i. *Amendment to the Eligible Customer Regulations ("EC") and the Guidelines on Filing Competition Transition Charge ("CTC")* to align with the current market realities and address the concern of stakeholders on the implementation of the Regulations. Part of the changes made include limiting the timeline for DisCos' response to request for a letter of non-indebtedness, simplifying the process for filing and reviewing CTC applications, and clarity regarding investment in networks in the event of network constraint.

ii. *Development of Guidelines for Secondary Escrow Account Management for Bilateral Transactions by Electricity Distribution*

Licensees to improve competition, quality, and reliability of service, the liquidity position of the DisCos, and foster greater investment in the NESI.

Conclusion and Recommendation

- *The NESI has undergone significant changes that has advanced the competitive structure of the Electricity Market since Privatization, and the enactment of the Electricity Act in 2023. The NESI is transitioning towards a more sustainable competitive stage.*

Conclusion

- **On the basis of the highlights in Sections 2 – 4 of this report, it can be deduced that the Nigerian electricity market has achieved substantial progress towards transitioning to a more competitive market.**

Way Forward

- **To ensure seamless transition and further improvement in the market, the underlisted are recommended for the Minister's consideration:**

Policy Recommendations

- Prioritization of the development of the short and long-term National Integrated Energy Policy and Strategic Implementation Plan;
- Provision of a clear subsidy financing plan, prior to transition to cost reflective tariffs, to ensure full and timely settlement of invoices for energy generated by GenCos and gas supplied by GasCos thereby ensuring sustainable generation;
- A clear policy and path to cost-reflectivity to enhance bilateral transactions, improved quality of supply and improve the liquidity of NESI;
- Privatisation or improved management of the government-owned NDPHC plants and address obstacles associated with the gas supply and evacuation infrastructure to unlock stranded capacity;
- Accelerate the completion of the ongoing SCADA system project by TCN to enhance the reliability and stability of the grid, improve monitoring and control, and ensure optimal laod dispatch;
- Ensure full autonomy and operationalisation of the NISO to enhance industry transparency and drive confidence in the market;

1 General Background

1.1 Context and Aim of the Report

This report is prepared pursuant to Section 7(2)(c) of the Electricity Act to update the Minister of Power ("MOP") on the level of competitiveness in the Nigerian Electric Supply Industry ("NESI") as at the end of 2023. Further, this report is presented to guide the MOP towards the declaration of a more competitive market in consideration of the progress made towards implementing the features for operationalising the medium-long term market as prescribed in the Market Rules of the NESI.

The FGN embarked on the Power Sector Reform to create an efficient electricity market and regulatory framework designed to promote a private sector-driven competitive market to attract required investments in improving the supply and quality of electricity services in Nigeria. Since 1999, the reform programme has achieved significant milestones in the overall direction of progressing from a vertically integrated monopoly towards a liberalised private sector-driven industry and improved growth in the interplay of market forces. Some of the key initiatives implemented include the:

a. enactment of the Electric Power Sector Reform Act 2004
b. establishment of the Nigerian Electricity Regulatory Commission ("NERC")
c. unbundling of the state-owned electricity company into 18 successor companies comprising one (1) Transmission Company of Nigeria Plc ("TCN"), six (6) generation companies ("GenCos"), and eleven (11) distribution companies ("DisCos")
d. privatisation programme for the eleven (11) successor DisCos and the six (6) successor GenCos

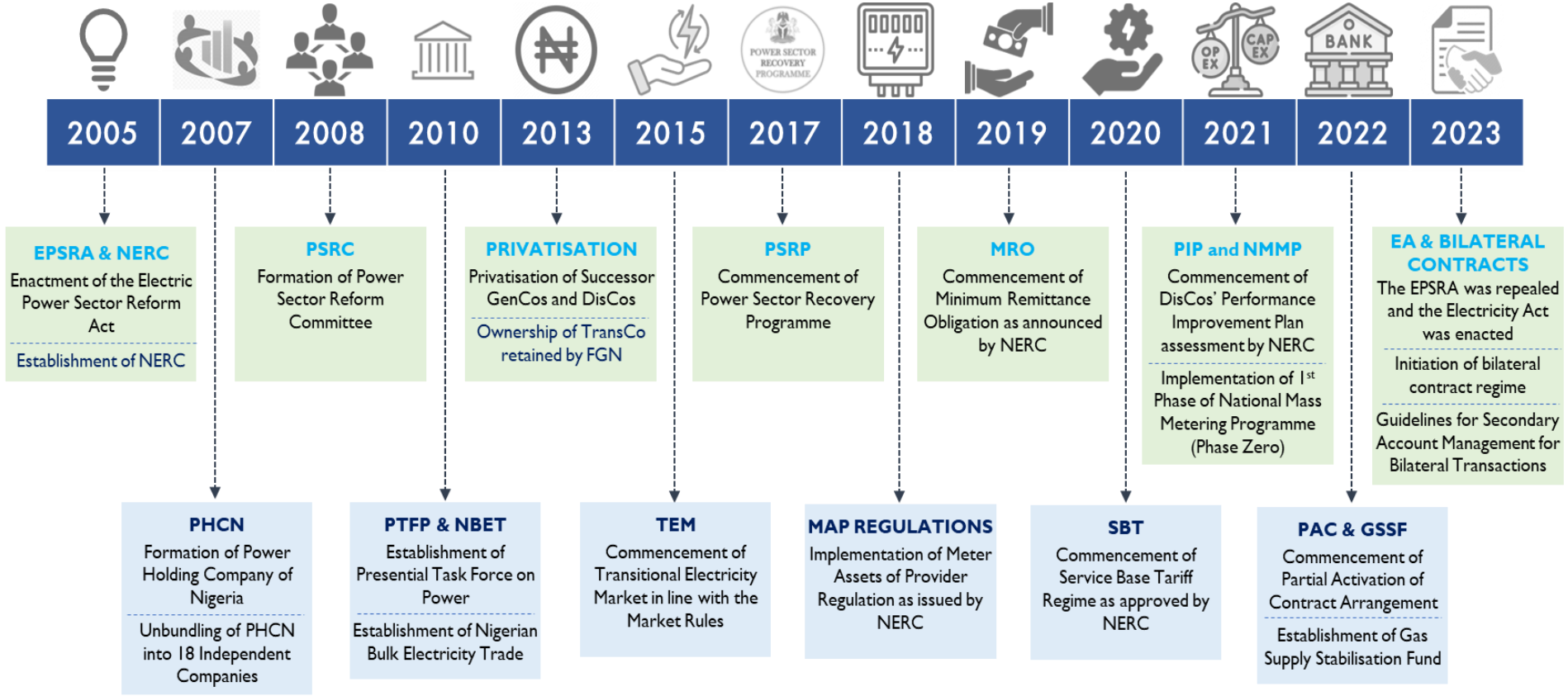
e. establishment of the Nigerian Bulk Electricity Trading Plc ("NBET") as an interim special purpose trader to midwife legacy and new power purchase contracts during the transition phase of the reform in the NESI
f. commencement of the Transitional Electricity Market ("TEM") phase in February 2015

Despite the progress recorded, the FGN approved the Power Sector Recovery Programme ("PSRP") in 2017 to reset the reform in response to emerging challenges inhibiting the attainment of the reform objectives of improving supply and transitioning to a competitive market. Specifically, these challenges include (i) the liquidity crisis threatening the financial viability of the sector; (ii) infrastructure deficits; (iii) the lack of end-user meters; (iv) contractual discipline and (v) sector governance issues.

In a move to further consolidate the gains in the power sector reform, the Electricity Act ("EA") was signed into law in 2023 with landmark provisions including decentralising regulatory powers and transitioning to a multi-tiered electricity market in Nigeria. The EA has no doubt introduced additional perspectives regarding the evolution of the national and state electricity markets with significant opportunities for new entrants given the requirements for unbundling/restructuring of existing entities in the NESI. The chart in Fig 1.1 provides a chronological timeline of the various activities of the power sector reform journey so far.

Accordingly, the imperatives of achieving a robust electricity market and improved competition and operational efficiency will continue to require constant monitoring and regular assessment of the evolving market developments. Hence, this annual report is prepared pursuant to Section 7(2)(c) of the Electricity Act to provide insights into the degree of competition in the NESI as at the end of 2023.

Figure 1: Timelines of Key Reform Activities in the NESI Toward Sustainability



1.2 The Commission and the Legal Authority

The Nigerian Electricity Regulatory Commission ("NERC" or the "Commission") was established by Section (31) of the EPSRA (now repealed) and was officially inaugurated on the 31st of October 2005. Pursuant to the provisions of EA 2023, the Commission serves as an independent regulatory body to drive the power sector reform by monitoring the operation and development of the market, promote transparency, and ensuring fair and balanced regulations for market participants and consumers.

Section 34(2)(a) of the EA 2023 mandates the Commission to "promote competition and private sector participation in the post-privatized power sector, when and where feasible;" The Commission is further mandated by section 7 2(c) of the Act to:

> *"Prepare and submit annual reports on the market conditions, including advice to the Minister on the end of the transitional electricity market and the establishment and operational dates for the medium and long-term markets respectively taking into consideration the satisfaction of the preconditions and features for operationalising the medium term and the long-term market as prescribed in the market rules"*

This report is therefore prepared pursuant to the above reference provision of the Act to provide overview of the current state of NESI and policy recommendations towards more competitive industry.

1.3 Regulatory Intervention

- Since its inception, the Commission has developed and issued several regulatory instruments consisting of various rules (market & business rules), operating codes, service standards, licensing frameworks and pricing

methodologies for the efficient development and operations of the Nigerian electricity market. The Commission performs its duties in accordance with the Act, other extant rules, and the policy framework of the FGN.

- Over the last two years, NERC has implemented several significant regulatory interventions to address emerging challenges in the sector. Notable among the initiatives are:

  a. Gas Supply Stabilization Fund 2022 ('GSSF'): About 60% of the total domestic gas supply in the country is associated with gas-to-power utilization. Despite the importance of gas to the NESI value chain, challenges such as- GENCOs: legacy debt- Inadequate market settlement for Gas-to-power contracts/invoices and Transmission: Infrastructure challenges- are still plaguing the industry. To mitigate some of these challenges, a revolving Gas Supply Stabilization Fund ("GSSF") [Sourced from Market Funds; Power Sector Recovery Loans; and FGN Power Intervention Funds] under the management of the Nigerian Bulk Electricity Trading PLC (NBET) and Gas Aggregation Company Nigeria ("GACN") was set up to mitigate payment risks in the gas-to-power value-chain thereby guaranteeing security of gas supply in the power sector

  b. Consumer Protection Regulations ("2023") which provides the regulatory framework for the protection of the rights of end-use customers of the distribution licensees by specifying the minimum standards of service delivery.

  c. Licenses Issued: Twenty-four (24) licenses were issued in 2023, with six (6) licenses for Bulk Purchase and Resale, five (5) IEDNs, two (2) Embedded Generation licenses, Nine (9) Off-grid licenses and two (2) on-grid Licenses).

d. Rate Case Hearing: Due to significant changes in the macro economic conditions in the country and their concomitant impact, DisCos filed for a rate case (i.e., tariff review) application to the Commission from 3 – 7 of July 2023. In line with the Commission's provisions on the Regulations on Procedure for Electricity Tariff Reviews in the Nigerian Electricity Supply Industry, the Commission published consultation paper on its website for stakeholders' input. This was followed by public hearings on the 24 – 27 July 2023, for DisCos to defend their rate case application before the NESI stakeholders. At the hearing, expert witnesses (Intervenors) were invited from all parts of the country to interrogate the submissions made by the DisCos.

- The above-stated efforts by the Commission are designed to stabilize the sector, promote investment, and improve service delivery to customers.

2. The Nigerian Electricity Industry

- Pursuant to the enactment of the erstwhile EPSRA, the FGN unbundled the then vertically integrated monopoly into 18 separate companies – consisting of six (6) GenCos, one (1) TransCo, and eleven (11) DisCos – and created a holding company known as the Power Holding Company of Nigeria ("PHCN"). The holding company was responsible for the overall management of the entities until 2013 when generation and distribution companies were privatised while the ownership and management of TCN remained with the federal government. Table 2.1 presents a brief description of the three (3) components of the Nigerian Power System.

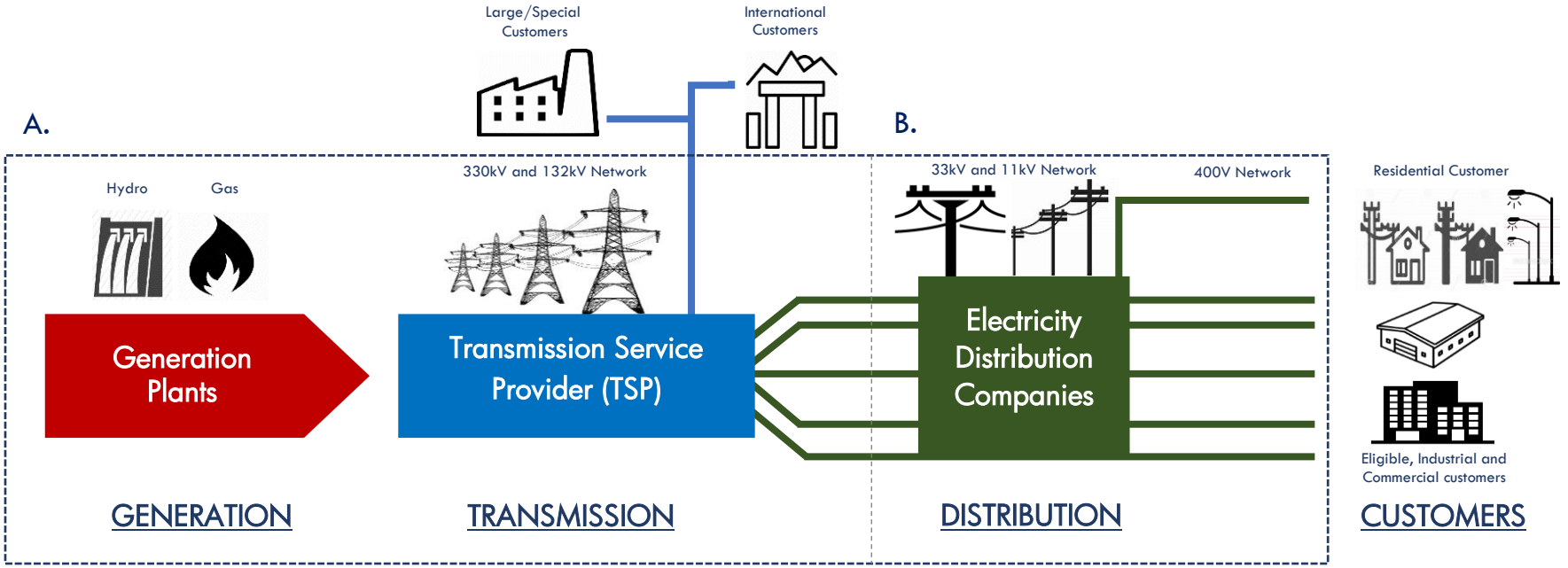
Table 2.1: The Three Main Components of the Nigerian Power System

Segments	*Description*
Generation:	Grid power generation in Nigeria mainly comes from gas and hydro. In 2023, there were twenty-nine (29) grid-connected generation companies ("GenCos") in Nigeria, Twenty-five(25) of them are gas-powered and four (4) hydro. In addition to the grid-connected plants, the Commission has licenced seventy-four (74) other off-grid generation companies.
Transmission Network:	TCN is responsible for the bulk transfer of electric energy from GenCos to DisCos and Eligible Customers through high-voltage transmission lines and substations that span across the country and form the national grid. The transmission network is owned and operated by the Transmission

Segments	*Description*
	Company of Nigeria Plc ("TCN"); the company currently also holds the independent system operator license.
Distribution Network:	This refers to medium and low-voltage (33kV, 11kV, and 400V) networks that are either connected directly to generating plants (embedded generation) or radiate from transmission substations and supply electricity to households, industrial, commercial, and streetlights. As at the end of 2023, there were twelve (12) grid-connected distribution companies and 22 independent electricity distribution network operators.

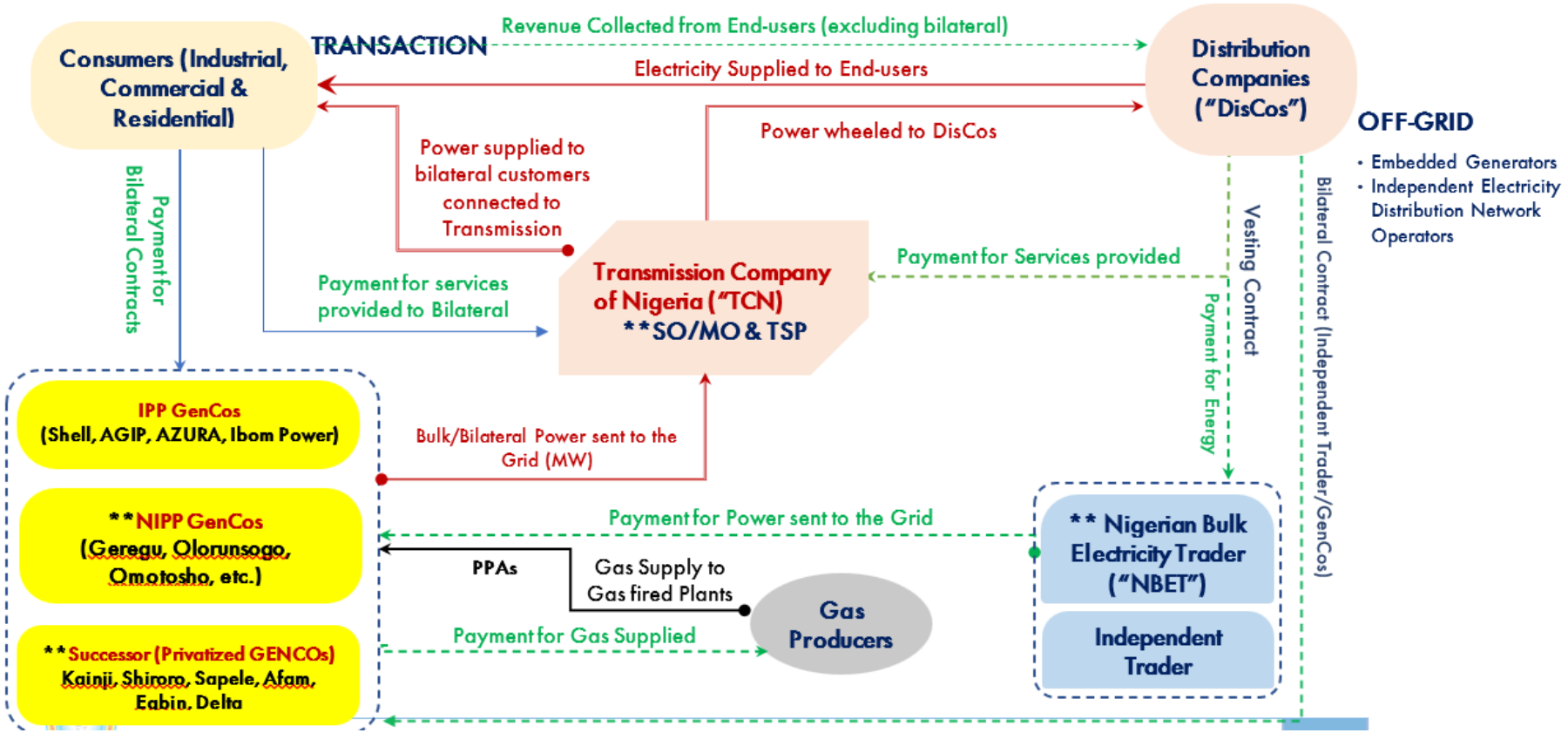
- The current operational structure of the Nigerian electricity grid managed by the System Operator ("SO") and Distribution System Operators ("DSO") is represented in Fig. 1. In Fig. 2, the Nigerian electricity market structure (i.e., load offtake, contract, and payment) managed by the Market Operator ("MO") and NBET is provided.

Figure 2: Operational Structure of the Nigerian Electricity Grid



Manager: Parts A and B are managed by the System Operator ("SO") and Distribution System Operators ("DSOs") respectively both under the regulatory supervision of the Nigerian Electricity Regulatory Commission ("NERC")

Figure 3: Nigerian Electricity Market Structure

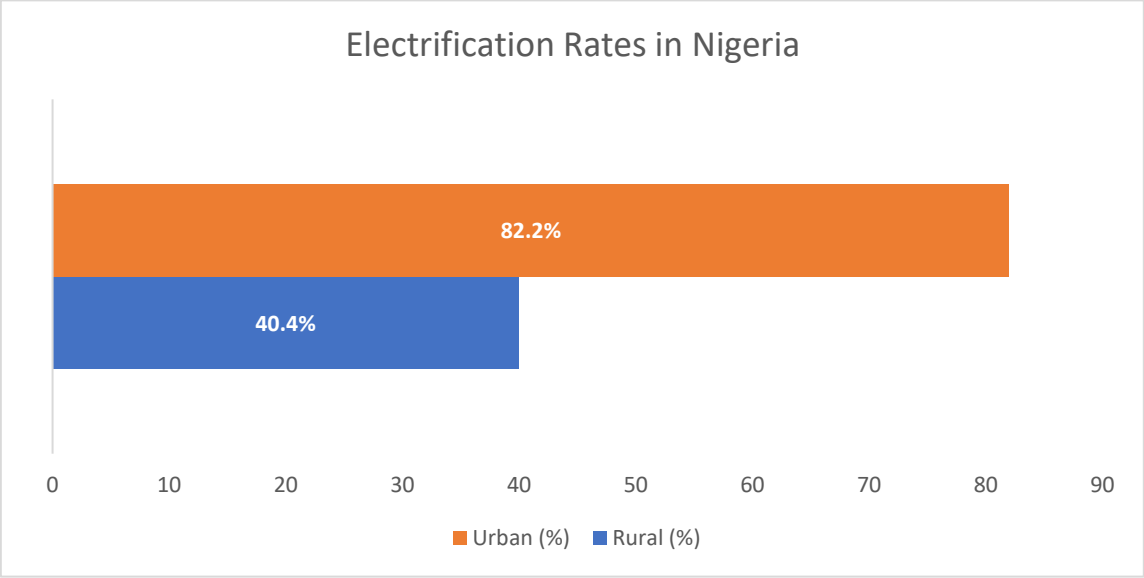


2.1 Household Access to Electricity in Nigeria

Urban city centres have greater access to electricity compared to rural areas

- There is a direct correlation between household income and distance to urban centres in Nigeria. As you move away from urban centres, household income declines due to the lack of infrastructure and access to markets. This is also the case with electricity access. According to recent Nigerian Bureau of Statistics and World Bank data, the average rate of electrification in the urban centres in Nigeria is around 82% while as seen in Figure 4, for rural households (which typically have lower incomes), the average electrification rate is around 40%.[1] Other studies also show that as you move away from large cities to peri-urban centres and small towns, the electrification rates continue to decline.[2]

Figure 4: Electrification Rates in Rural and Urban Areas (2023)



[1] See https://www.nigerianstat.gov.ng/pdfuploads/GHS-Panel%20Wave%205%20-%20Survey%20Report.pdf
Pelz, Setu & Chinichian, Narges & Juette, Clara & Blechinger, Philipp. (2023). Electricity supply and use among rural and peri-urban households and small firms in Nigeria.

The disparity in access to electricity between urban and rural households also indicates that urban more affluent households account for a large portion of electricity subsidies currently administered in Nigeria. This assertion is supported by an analysis of the beneficiaries of subsidy conducted in 2021 where the richest 20% Nigerians accounted for approximately 60% of government subsidy while the poorest 20% benefited only 1.5%[3] .

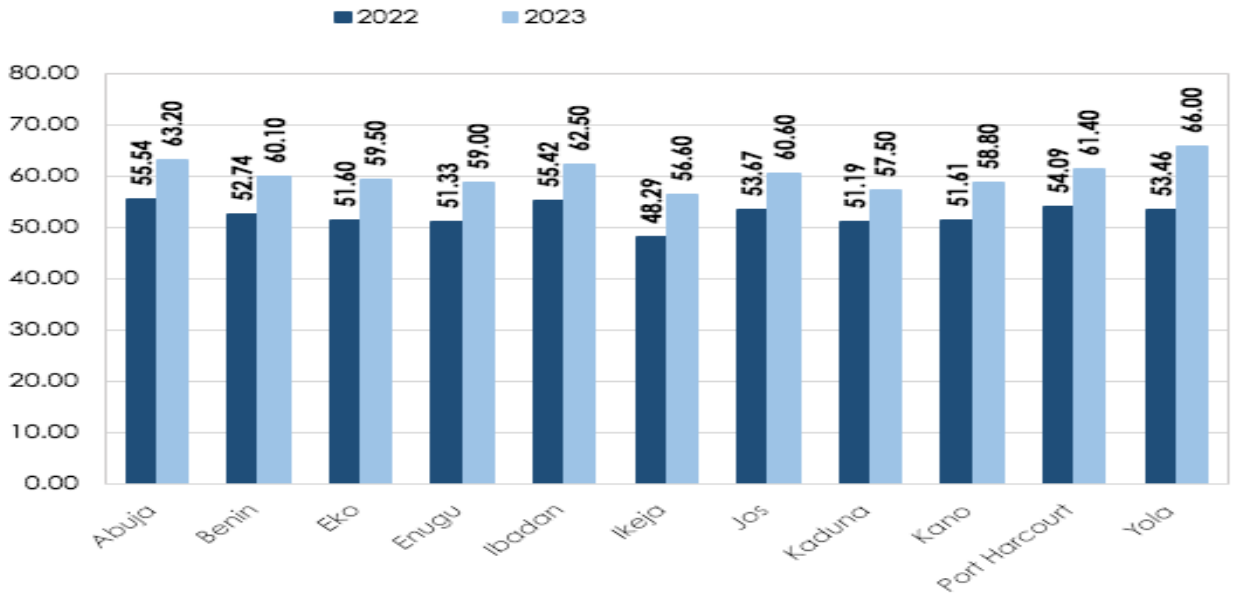
2.2 End-Use Tariffs Charged by DisCos

The average end-user tariff for domestic customers varies across DisCos:

- In 2023, the sector had non-uniform tariffs with end-use tariffs varying from one DisCo to the other and from one customer class to another. The variation in end-use tariffs across various DisCos is due to the different cost structures of the companies and associated operational efficiency.
- Fig 5 shows the weighted average tariffs chargeable by different DisCos in between 2022 and 2023. The Figure indicates that YEDC had the highest weighted average tariff (N66/kWh) in 2023 followed by AEDC. Yola DisCo was sold to a new investor in 2022 and during the sale there was a consideration of the Force Majeure situation in YEDC franchise areas which led to the revision of YEDC's allowed losses to be above the DisCos average and subsequent increase in the tariff. Across all the DisCos, end-user prices rose from 2022 to 2023 driven by input costs and changes in macroeconomic indices; including Foreign Exchange Rate, Inflation Rate in Nigeria and the US, Available Generation, and Gas-to Power price.

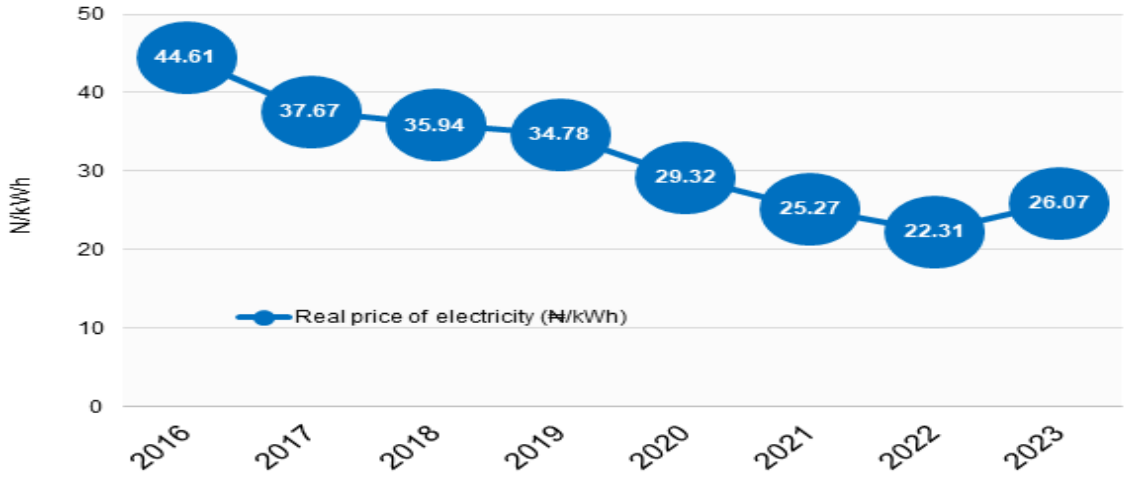
[3] World Bank and NERC (2021), The PSRP Financing Plan and Model, World Bank Training to PSRP Secretariat and Stakeholders, Abuja Nigeria

Figure 5: Average Weighted Electricity Tariffs by DisCos (N/kWh)



The real cost-reflective price of electricity (adjusted for inflation) continues to decline. This is represented in Fig. 6 which shows that as electricity delivery continues to increase, real prices continue decline due to increased investments in power generation and distribution infrastructure, leading to improved supply.

Figure 6: National Weighted Average Real Retail Price (N/kWh) in Nigeria



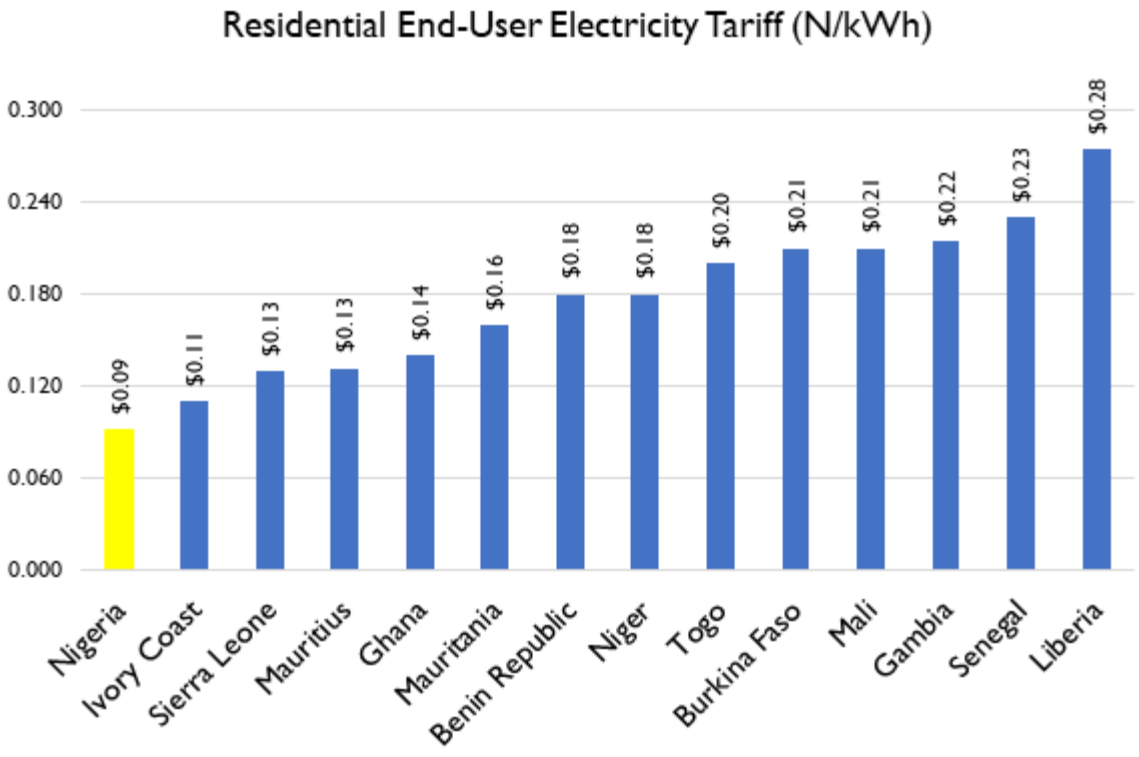
*Note- figures are cost-reflective tariffs chained to 2015

2.3 Comparison of End-user Electricity Tariffs in ECOWAS

End-user tariff in Nigeria is lower than electricity tariff in most of the ECOWAS countries:

- Available data on electricity tariffs in West Africa represented in Fig. 7 shows that the average electricity tariff in Nigeria in 2023 was US$0.09/kWh and was relatively lower than the average electricity tariff in most ECOWAS countries;

Figure 7: ECOWAS Average Electricity Tariff in 2023



The relatively low electricity tariff in Nigeria is partly due to the tariff subsidy provided by the Federal Government of Nigeria ("FGN") and the relatively cheaper gas-to-power price in Nigeria.

2.4 Components of Electricity Tariff/Bill in Nigeria

Generation costs constitute the major share of end-use electricity tariff/bills payable by consumers in Nigeria:

- As presented in Table 2.2, the operated end-use tariff in 2023 indicates that generation costs accounted for approximately 45% of the average end-user electricity tariff in Nigeria.

Table 2.2: Main Components of End-use Tariff in 2023

S/N	*Components*	*Definition*	Nominal ₦/kWh	Real ₦/kWh	*Share of Nominal Tariff*
1.	*Generation Cost*	The weighted average cost of supplying per kWh of electricity to the grid	38.54	11.67	44.76%
2.	*Transmission Cost (TSP, MO, SO)*	The unit cost (plus allowed margin) per kWh of building, maintaining, and operating the transmission networks that transport electricity to the distributor/eligible/bilateral customers; administrating the networks and enforcing market rules	5.15	1.56	5.98%
3.	*Distribution Cost*	The unit cost (plus allowed margin) per kWh of building, maintaining and operating the distribution line that transports electricity from the transmission sub-substation to the consumer	15.24	4.61	17.70%
4.	*Admins & Regulatory Charges*	The unit cost per kWh of administrating, coordinating invoices and settlement, and regulating all licensees	0.96	0.29	1.11%
5.	*NEMSF Repayment*	The unit cost per kWh of repayment of loans used to finance past tariff subsidy	1.85	0.56	2.15%
6.	*Efficiency Losses*	Allowable average technical, commercial and collection losses	24.36	7.38	28.29%
	End-use Tariff	The total cost of supplying a kWh of electricity to end-use customers	86.11	26.07	100.00%

	Tariff Shortfall (subsidy)	Subsidy cost per kWh of electricity supplied to end-use customers	26.09	7.90	
	Allowed Tariff	The total cost of supplying a kWh of electricity to the end-user minus tariff subsidy	60.01	18.17	
7.	*Value Added Tax ("VAT")**	The 7.5% rate of VAT that applies to the domestic end-user of electricity	4.5	1.36	
8.	*End-use Tariff + VAT*	The total cost of supplying a kWh of electricity to the end-user after VAT and subsidy	64.51	19.53	

Source: Computed based on MYTO 2023; the real price is adjusted for inflation with a baseline of 2015.
*VAT is calculated based on the allowed tariff of 60.01

- Ensuring least cost generation and improving technical and commercial performances in transmission and distribution (e.g., transmission loss, DisCos' technical, commercial and collection efficiencies) are critical to reduction in end-user tariffs.
- The ongoing phased contract activation and novation overseen by the Commission which, among other objectives, is designed to guarantee payments to suppliers for stable and reliable generation in NESI is expected to lower generation costs and thus, reduce end-use tariff and tariff shortfall.

In this section, it is established that:

a. End user tariff subsidy in Nigeria is more favourable to the higher income group.

b. The real end-user price of electricity (adjusted for inflation) continues to decline in Nigeria decline due to increased investments in power generation and distribution infrastructure, leading to improved supply.

c. End-use tariff in Nigeria is lower than end-use tariff in other ECOWAS countries partly due to the tariff subsidy provided by the FGN and the relatively cheaper gas-to-power price in Nigeria

d. Generation costs constitute the major components of end-user tariffs/bills in Nigeria – approximately 45% of end-use tariffs in 2023.
e. Implementing least cost generation and improving technical and commercial performances in transmission and distribution (e.g., transmission loss, DisCos' technical, commercial and collection efficiencies) are critical to reduction in end-user tariffs in NESI.
f. The ongoing phased contract activation and novation overseen by the Commission will engender further competition in the generation segment and ultimately reduce generation costs.

3. Competition in the Nigerian Electricity Market

This section presents an analysis of the current stage of the Nigerian electricity market, the degree of privatization and competition that has occurred as well as opportunities for further competition.

3.1 Statutory Provision on Transition to a More Competitive Market

- Pursuant to the relevant Sections of the Act, this subsection reviews the state of the industry relative to the envisaged market development stages provided in the Market Rules, and whether the Condition Precedent ("CPs") for a transition to a more competitive market have been met.
- The statutory provision on transition to a more competitive market are as highlighted below:
    - Section 8(1) of the Act which provides that "…*Commission in consultation with the minister is satisfied that the electricity market in Nigeria has developed to a point where a more competitive stage than the preceding market ought to be established, having regards to the satisfaction of the pre-conditions and such features as may be prescribed under the market rules, the Commission shall issue a declaration that such a market stage be commenced".*
    - *Section 8(2) of the Act which provides that "The Market stage declared by the Commission, under the provisions of subsection (1) shall retain the features and conditions as contained under the market rules and shall remain operational until such a time as the Commission shall determine*".

3.2 The Degree of Privatisation Across the Value Chain

Privatization in the NESI has had significant positive implications. It has led to more optimal investment in the sector aimed at upgrading infrastructure,

boosting generation capacity, metering and increasing efficiency. Privatization has also fostered competition among the newly created generation and distribution companies, driving them to be more responsive to consumer needs and innovative in their operations. While challenges around tariff reviews remain, the general trend, since privatization, indicates that privatization has laid a solid foundation for a more stable, reliable, and efficient electricity supply in Nigeria, ultimately benefiting the economy and enhancing the quality of life for its citizens.

Since the commencement of the power sector reform in Nigeria, substantial privatisation has occurred with respect to generation and distribution while transmission remains with the Federal Government. Privatisation in NESI has laid a solid foundation for a more stable, reliable, and efficient electricity supply, ultimately benefiting the economy and enhancing the quality of life for its citizens. Table 3.1 provides privatization status of the firms in the generation, distribution and transmission segments of the NESI.

3.2.1 Generation Segment

- There were twenty-nine (29) private and government-owned grid operational plants as at December 2023. This does not include several off-grid and embedded generators licensed by the Commission and currently operating in NESI.
- Eight (8) of the grid-connected generation plants are owned by government and operated by the Niger Delta Power Holding Companies ("NDPHC") Limited. The NDPHC is a special-purpose vehicle owned by the 3 tiers of government and created for the implementation of the National Integrated Power Projects ("NIPP").
- Table 3.1 presents the list of the 29 grid connected generation companies in Nigeria as at 2023.

Table 3.1: Degree of Privatization across the Value-chain in NESI

S/N	Generating Company ("GenCos")	Status	Ownership/Concessionaire
1.	Shiroro	*Concessioned*	*North-South Power Company Ltd*
2.	Jebba	*Concessioned*	*Mainstream Energy Solutions Ltd*
3.	Kainji	*Concessioned*	*Mainstream Energy Solutions Ltd*
4.	Dadin-Kowa	*Concessioned*	*Mabon Energy Ltd*
5.	Afam IV-V	*Privatised*	*Trans Afam Power Ltd*
6.	Delta (Ughelli)	*Privatised*	*Transcorp Power Ltd*
7.	Geregu	*Privatised*	*Amperion Power Distribution Co. Ltd*
8.	Sapele	*Privatised*	*Eurafric Power Plc*
9.	Egbin	*Privatised*	*Sahara Power Group*
10.	Omotosho I	*Privatised*	*Omotosho Electric Energy Co. Ltd*
11.	Olorunsogo I	*Privatised*	*Sepco Pacific Energy Partners Ltd*
12.	Alaoji NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
13.	Calabar (Odukpani) NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
14.	Gbarain NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
15.	Geregu NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
16.	Ihovbor NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
17.	Olorunsogo NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
18.	Omotosho NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
19.	Sapele NIPP	*Govt - NDPHC*	*Federal, States & LGAs*
20.	Afam VI IOC	*Private*	*Shell Development Nigeria Co. Ltd*
21.	Azura-Edo IPP	*Private*	*Azura Power West Africa Ltd*
22.	Ibom Power IPP	*Private*	*Ibom Power Company Ltd*
23.	Okpai IPP	*Private*	*Nigeria Agip Oil Ltd*
24.	Omoku IPP	*Private*	*Sahara Power Group/Rivers State Govt*
25.	Paras Energy IOC	*Private*	*Paras Energy Dev & Resource Ltd*
26.	Rivers IPP	*Private*	*Sahara Power Group/Rivers State Govt*
27.	Trans-Amadi IPP	*Private*	*Sahara Power Group/Rivers State Govt*
28.	TAOPEX Gas IPP	*Private*	*TAOPEX Energy Services Ltd*
29.	Maiduguri Emergency Power Project	*Govt - NGPIS*	*NNPC Ltd*

3.2.2 Transmission Segment

- Due to its critical role in national security and level of funding requirements, the ownership and management of transmission services remains with the Federal Government under the entity – Transmission Company of Nigeria Plc ("TCN"). However, private investors can partner with TCN and invest in transmission assets in accordance with the regulations of the Commission.

- Pursuant to Section 15(1) of the EA 2023, TCN currently holds two separate licences and performs the functions of both the System Operator ("SO") and the Transmission Service Provider ("TSP"). In accordance with the Sections 15 (1) 7 (2) of the EA 2023, the issuance of the SO license to TCN was envisaged to be temporary pending the establishment of an independent system operator ("ISO") within such stage or period of the market as the Commission may specify in a written directive or an Order put in place on a clear plan and timeline for the transition process to avoid disruption of industry operations.

- In accordance with Part IV of the new Act, the mandate of the ISO shall be to foster transparency and competition through:
  - Scheduling, Commitment and Dispatch;
  - Congestion Management;
  - System Planning; and
  - Administration of the wholesale electricity market, including the activity of administration of settlement payments in accordance with the market rules
- The Commission in 2023 developed the framework towards the establishment of an ISO to provide greater transparency and foster competition in NESI.

3.2.3 Distribution Segment

- Pursuant to the electricity reform agenda of the FGN, the eleven (11) successor distribution companies ("DisCos") were privatised through a divestment of 60% equity shareholding to private core investors. All the successor DisCos are connected to the national transmission network;
- Other distribution company connected to the transmission network is Aba Power Limited Electric ("APLE") which was excised out of EEDC and licenced by the Commission with the responsibility of distribution of

electricity to commercial and residential consumers within a ring-fenced network in Abia state;

- In addition, several Independent Electricity Distribution Networks Operators ("IEDNO") have been licenced by the Commission and currently distribute power from their respective embedded generation plants.

Table 3.1a below presents the list of the licenced electricity distributors as at the end of 2023.

Table 4.1a: Degree of Privatization across the DisCo Value-chain

	Distribution Companies ("DisCos")	Status	Ownership*
1.	Abuja Electricity Distribution Plc	*Privatised*	*Transcorp Power Limited*
2.	Benin Electricity Distribution Plc	*Privatised*	*Receiver Manager – Fidelity Bank Plc*
3.	Eko Electricity Distribution Plc	*Privatised*	*West Power and Gas Ltd*
4.	Enugu Electricity Distribution Plc	*Privatised*	*Inter-State Electric Ltd*
5.	Ibadan Electricity Distribution Plc	*Privatised*	*Receiver Manager – AMCON*
6.	Ikeja Electric Plc	*Privatised*	*Sahara Power Group*
7.	Jos Electricity Distribution Plc	*Privatised*	*Aura Energy Ltd*
8.	Kaduna Electricity Distribution Plc	*Privatised*	*Receiver Manager – Fidelity/AFREXIM*
9.	Kano Electricity Distribution Plc	*Privatised*	*Future Energies Africa*
10.	Port Harcourt Electricity Distribution Plc	*Privatised*	*4Power Consortium Ltd*
11.	Yola Electricity Distribution Plc	*Privatised*	*Quest Electricity Nigeria Ltd*
12.	APLE Electricity Distribution Plc	*Private*	*Aba Power Ltd Electric*

Notes of the Table: *Indicating ownership of 60% majority stake, NGPIS denotes NNPC Gas and Power Investment services

3.3 The Existence of a Large Number of Potential Competitive Entities

- *Competitive entities in NESI have substantially increased and still progressing with the advent of far-reaching regulations to incentivise private participation. Specifically, several contracting frameworks currently exist among the market participants. Energy and capacity may be contracted through vesting, bilateral, cross-border agreements while eligible customers may procure electricity directly from GenCos and trading*

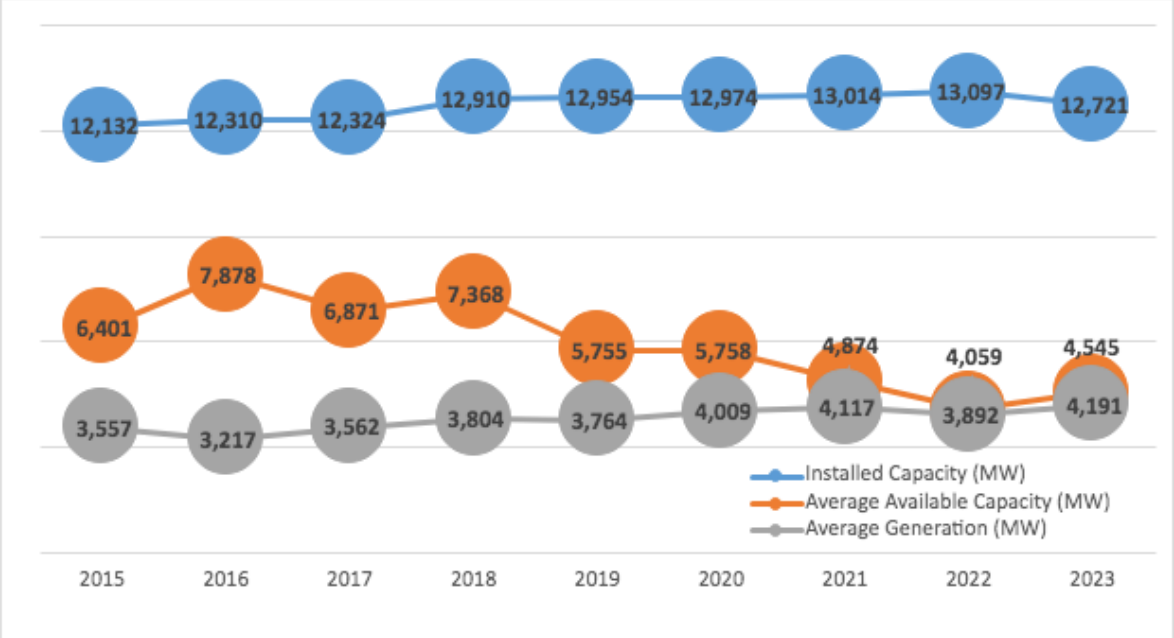
licensees, thus significantly improving the level of competition in the industry.

- As represented in Figure 8, the installed and generation capacities of the power plants connected to the grid have continued to increase from 2015 when GenCos were handed over to private investors. As at December 2023, 29 on-grid power plants were operational in NESI. The high number of generation plants and the opportunities created by various regulations allowing DisCos and large consumers to contract bilaterally has improved the level of competition in NESI.
- The installed capacity in NESI grew by 12.00% from 12,132MW as at December 2015 to 13,588 MW as of December 2023. Both generation capacity and average generation have seen improvement in 2023 on account of interventions by the Commission in addressing gas supply shortage and in resolving transmission bottlenecks.
- During the same period, the average available capacity declined by 1,856 MW, dropping from 6,401 MW in 2015 to 4,545 MW in 2023. This apparent decrease in capacity is primarily attributed to changes in the procedure and approach used to assess availability declarations to ensure that only accurate and reliable declarations are accepted. Additionally, other factors influencing availability include:
    - *Gas supply constraints*
    - *Poor maintenance due to unavailability of funds arising from liquidity challenges*
    - *Limited investment in capacity recovery*
    - *Ineffective contracts and delay in payment*
    - *Deteriorating plants/units' capacities*
- The daily average generation has continued to grow. The daily average generation of 4,191MW recorded in 2023 was 17.82% more than the

daily average generation of 3,557MW recorded in 2015. From 2022 to 2023, the average daily generation rose by 7.7%.

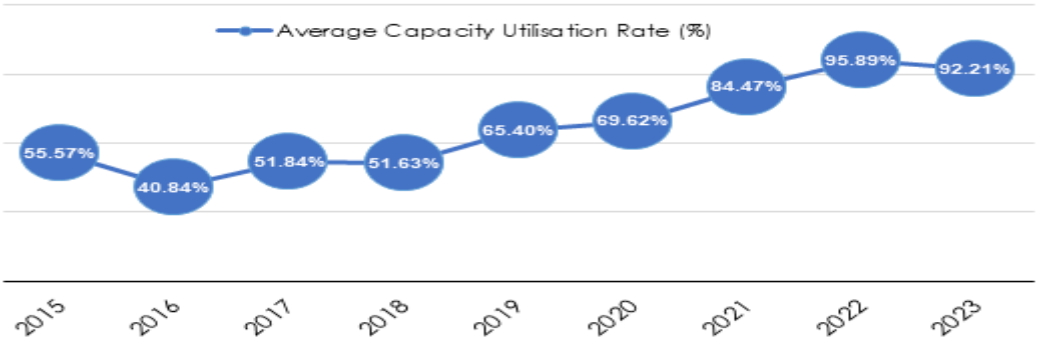
- It is noteworthy to mention that in 2023, the 50MW NNPCL-owned MEPP commenced operations. Similarly, the 40MW Kashimbila Hydropower plant ("KSHPP") and the 700MW capacity Zungeru Hydropower projects ("ZHPP") were commissioned and concessioned in 2023. Commencement of commercial operation by the two plants in 2024 will further increase the injection of energy from hydro/renewable sources into the grid.

Figure 8: Generation Capacity and Average Generation in NESI



- The capacity utilization rate represented in Fig 9 has been on the increase and rose by 36.64 percentage points from 55.57% recorded in 2015. Despite the 7.7% increase in daily generation between 2022 and 2023, capacity utilization rate declined by 3.68 percentage points.

Figure 9: GenCo Available Capacity Utilization Rate (%)



- Notwithstanding the progress in power generation, the industry constraints relating to inadequate gas supply, transmission limitation, limited distribution network, and commercial viability of DisCos' operation still pose major technical and operational challenges which makes it difficult to fully utilize the industry capacity.
- To further increase the available power generation and the capacity utilisation, the Commission had, since 2022, commenced the process for the phased activation of additional generation capacities in executed Power Purchase Agreements ("PPAs") thereby providing certainty to the projected volume of energy expected of each GenCo. The activation of contracts provide for proper allocation of risks among the parties to the PPA and Service Level Agreements ("SLA"). The initiative is expected to provide leverage for the incremental growth in power availability and capacity utilisation. As presented in Table 3.2, seven (7) thermal and two (2) Hydro GenCos executed the PPA for the Partial activation in 2022.
- As presented in Table 3.3, only two of the thermal GenCos – (Azura and Odukpani – have active Gas Supply Agreements ("GSA") as the end of 2023, due to the uncertainty about the viability of the market to guarantee the fulfilment of the commercial terms of the GSA.

Table 3.2: Power Trading Arrangement and PPA Activation in NESI as at the end of 2023

S/N	GenCos	Plant Type	Ownership	On-grid Operations	Trading Type	Existing Contracts Type	Newly Partially Activated PPAs *
1	Olorunsogo NIPP	Gas Thermal	NIPP	Active	NBET	Best Endeavor	
2	Omoku IPP	Gas Thermal	Legacy IPP	Active	NBET	Best Endeavor	Activated (59MW Peak)
3	Omotosho	Gas Thermal	Privatised Successor	Active	NBET	Sovereign-backed Active PPA/Contract	
4	Omotosho NIPP	Gas Thermal	NIPP	Active	NBET	Best Endeavor	
5	Paras	Gas Thermal	New-IPP	Active	Bilateral	Bilateral Active Contract	
6	Rivers IPP	Gas Thermal	Legacy IPP	Active	NBET	Best Endeavor	Activated (160MW Peak)
7	Sapele Gt NIPP	Gas Thermal	NIPP	Active	NBET	Best Endeavor	
8	Trans Amadi IPP	Gas Thermal	Legacy IPP	Active	NBET	Best Endeavor	Activated (59MW Peak)
9	Okpai	Gas/Steam	Legacy IPP	Active	NBET	Sovereign-backed Active PPA/Contract	
10	Olorunsogo	Gas/Steam	Privatised Successor	Active	NBET	Sovereign-backed Active PPA/Contract	
11	Afam IV - V	Gas-Thermal	Privatised Successor	Active	NBET	Best Endeavor	Activated (50MW Peak)
12	Afam VI	Gas-Thermal	Legacy IPP	Active	NBET	Sovereign-backed Active PPA/Contract	
13	Alaoji NIPP	Gas-Thermal	NIPP	Active	NBET	Best Endeavor	
14	Azura IPP	Gas-Thermal	New-IPP	Active	NBET	Sovereign-backed Active PPA/Contract	
15	Delta (Ughelli)	Gas-Thermal	Privatised Successor	Active	NBET/Bilateral	Best Endeavor/Bilateral Active Contract	Activated (480MW Peak)
16	Gbarain NIPP	Gas-Thermal	NIPP	Inactive	-	-	
17	Geregu	Gas-Thermal	Privatised Successor	Active	NBET	Best Endeavor	Activated (270MW Peak)
18	Geregu NIPP	Gas-Thermal	NIPP	Active	NBET	Best Endeavor	
19	Ibom Power	Gas-Thermal	Legacy IPP	Active	NBET	Best Endeavor	
20	Ihovbor NIPP	Gas-Thermal	NIPP	Active	NBET	Best Endeavor	
21	Odukpani	Gas-Thermal	NIPP	Active	NBET/Bilateral	Sovereign-backed Active Gas Contract	
22	Dadin Kowa Hydro	Hydro	Privatised Successor	Active	NBET	Best Endeavor	
23	Jebba	Hydro	Privatised Successor	Active	NBET	Best Endeavor	Activated (300MW Peak)
24	Shiroro	Hydro	Privatised Successor	Active	NBET	Best Endeavor	
25	Kainji	Hydro	Privatised Successor	Active	NBET/Bilateral	Best Endeavor/Bilateral Active Contract	Activated (350MW Peak)
26	Egbin ST (GAS)	Steam	Privatised Successor	Active	NBET/Bilateral	Best Endeavor/Bilateral Active Contract	Activated (500MW Peak)
27	Sapele ST	Steam	Privatised Successor	Active	NBET	Best Endeavor	
28	TAOPEX	Gas-Thermal	New-IPP	Active	Bilateral	Bilateral Active Contract	
29	Maiduguri Emergency Power Plant	Gas- Thermal	NNPC	Active	NBET	Best Endeavour	

* The newly partially activated contracts were effective from July 2022

Table 3.3: GenCos with Active Gas Supply Agreements (GSA) in the NESI as at the end of 2023

S/N	GenCos	Gas Supplier	GSA Status
1	Olorunsogo NIPP	Chevron Nigeria Limited	Not Active
2	Omoku IPP	Agip	Not Active (Direct Supply)
3	Omotosho	Nigerian Petroleum Development Company Limited	Not Active
4	Omotosho NIPP	Nigerian Gas Marketing Company Limited	Not Active
5	Paras	N/A	N/A
6	Rivers IPP	Shell Petroleum Development Company Nigeria Limited*	Not Active (Direct Supply)
7	Sapele Gt NIPP	Nigerian Gas Marketing Company Limited	Not Active
8	Trans Amadi IPP	Shell Petroleum Development Company Nigeria Limited*	Not Active (Direct Supply)
9	Okpai	Agip**	Own Gas
10	Olorunsogo	Nigerian Petroleum Development Company Limited/ Nigerian Gas Marketing Company Limited	Not Active
11	Afam IV - V	Shell Petroleum Development Company Nigeria Limited	Not Active
12	Afam VI	Shell Petroleum Development Company Nigeria Limited**	Own Gas
13	Alaoji NIPP	Total E & P Nigeria Limited	Not Active
14	Azura IPP	Seplat Petroleum Development Company Ltd	Active
15	Delta (Ughelli)	Nigerian Petroleum Development Company Limited/ Nigerian Gas Marketing Company Limited	Not Active
16	Gbarain NIPP	Shell Petroleum Development Company Nigeria Limited*	Not Active (Direct Supply)
17	Geregu	Seplat Petroleum Development Company Ltd	Not Active
18	Geregu NIPP	Nigerian Gas Marketing Company Limited	Not Active
19	Ibom Power	Accugas Limited	Unclear
20	Ihovbor NIPP	Nigerian Gas Marketing Company Limited	Not Active
21	Odukpani	Accugas Limited	Active
22	Egbin ST (GAS)	Chevron Nigeria Limited/Nigerian Petroleum Development Company Limited	Not Active
23	Sapele ST	Nigerian Gas Marketing Company Limited/Seplat Petroleum Development Company Ltd	Not Active
24	TAOPEX	N/A	N/A
25	Maiduguri Emergency Power Plant	N/A	N/A

*Direct Supply refers to the GenCo that receives gas directly from the gas plants without going through the NGC pipeline

** Own Gas are the GenCos that owned the gas and supply to themselves

- To ensure improvement in energy off-take by DisCos, the Commission has provided in the MYTO Order, a provision for a "take or pay" obligation on the expected minimum load offtake for each DisCo as envisaged in the vesting contracts executed with NBET. This implies a slight modification to the retrospective minor tariff review approach and ensures that DisCos are punished for lower energy offtake.
- The Commission continues to monitor the implementation of the Service Level Agreements ("SLAs") between DisCos & TCN. The SLAs provide for the allocation of risks arising from deviation from the dispatch merit order and low load offtake/dispatch to locations nominated by DisCos.

The Assessment of the Current Level of Market Concentration in NESI – Generation

The Herfindahl-Hirschman Index (*"HHI") used to measure the level of competition in generation is estimated to be low, indicating a sufficient number of diverse firms competing in the industry, without barriers to entry and limited potential for market abuse.*

One of the most widely accepted tools for measuring Market Concentration is the HHI. Inherent in the HHI is the incorporation of the relative size of the firms in a market. A high disparity in the size and the number of entities in the market increases the HHI score. Based on US Department of Justice Benchmarks, an HHI score between 1 and 1,500 is considered "low market concentration" while moderate concentration corresponds to an HHI score between 1,500 and 2,500. HHI scores greater than 2,500 are indicative of a highly concentrated industry.

- In analysing the concentration of the generation industry in the NESI, HHI scores were computed based on installed capacity, available capacity, and energy generated by the GenCos. These are reported in Table 3.4. The results indicate that the HHI scores (for the three metrics employed) are less

than 1,500 (i.e., low market concentration). In 2022, the HHI for the generation sub-sector of the NESI was recorded at 1,429 for installed capacity, 1,103 for available capacity, and 1,144 for actual energy generated. By 2023, the HHI for these parameters shifted to 1,471 for installed capacity, 1,062 for available capacity, and 1,086 for actual energy generated. Although market concentration increased slightly for installed capacity from 2022 to 2023, there was a decline in market concentration for available capacity and actual energy generated. This decline is attributed to recovered capacities in the portfolios of Sahara Group and Mainstream Energy Solution Limited ("MESL"), signalling a deepening of competition in the generation sub-sector, thereby reducing the potential for market abuse. As the market evolves and more reforms are implemented by the Commission, it is envisaged that a number of the inactive on-grid generation licensees will become operational, thus, the wholesale generation market will be more competitive.

- As at December 2023, the NDPHC power plants constituted the single largest market share of the installed capacity while MESL has the largest market share of available capacity. Sahara Power Group constituted the single largest market share of actual energy generated in 2023. The variety of firms controlling market shares for installed capacity, available capacity, and actual generation highlights the robust competition within the wholesale generation market.
- To further reduce the level of concentration in the Nigerian electricity industry, the FGN through the Bureau of Public Enterprises ("BPE") is undertaking a process for the privatisation of the eight (8) NDPHC power plants. This will further increase the number of private ownerships in the power sector, and improve efficiency and competition.
- The Commission, pursuant to Section 121(3) of the Act, continues to prevent market power abuse by scrutinizing proposed mergers, acquisitions, or

affiliations, as well as setting standards and guidelines to avoid market overconcentration and other uncompetitive market practices.

Table 3.4: The Level of Market Concentration in the NESI (Generation Sub sector) as at 2023

No of Plants	*Plants*	*Ownership*	*HHI – Installed Capacity*			*HHI – Available Capacity*			*HHI – Energy Generated*		
			Installed Capacity (MW)	Market Share (%)	Squared Market Share	Available Capacity (MW)	Market Share (%)	Squared Market Share	Energy Generated (MWh)	Market Share (%)	Squared Market Share
1	Afam IV-V	Afam Power Plc	726	5.34	28.55	42	0.92	0.84	39	0.93	0.87
1	Geregu	Amperion Power Distribution Ltd	414	3.05	9.28	210	4.63	21.47	198	4.73	22.41
1	Azura-Edo IPP	Azura Power West Africa Ltd	461	3.39	11.51	410	9.02	81.33	370	8.83	78.03
8	NDPHC NIPPs	Federal, States & LGAs	4257	31.33	981.51	537	11.82	139.76	479	11.44	130.78
1	Ibom Power IPP	Ibom Power Ltd	190	1.40	1.96	73	1.61	2.58	40	0.95	0.9
1	Dadin-Kowa	Mabon Energy Ltd	40	0.29	0.09	24	0.54	0.29	23	0.56	0.31
2	Kanji & Jebba	Mainstream Energy Sol. Ltd	1336	9.83	96.67	769	16.93	286.66	726	17.34	300.55
1	Okpai IPP	Nigeria AGIP Ltd	480	3.53	12.48	314	6.91	47.77	266	6.35	40.31
1	Shiroro	North-South Power Company Ltd	600	4.42	19.50	335	7.38	54.4	287	6.84	46.81
2	Omotosho & Olorunsogo	Pacific Energy Group	608	4.47	20.02	213	4.7	22.05	210	5.02	25.16
1	Paras Energy IOC	Paras Energy Dev & Res Ltd	96	0.71	0.50	67	1.47	2.18	59	1.4	1.95
4	Egbin, Trans-Amadi IPP Omoku IPP & Rivers IPP	Sahara Power Group - FIPL	1750	12.88	165.87	767	16.89	285.19	732	17.48	305.57
1	Sapele	Sapele Power Plc	1020	7.51	56.35	90	1.98	3.91	81	1.94	3.76
1	Afam VI IOC	Shell Nigeria Ltd	650	4.78	22.88	311	6.84	46.75	312	7.44	55.4
1	TAOPEX Gas IPP	TAOPEX Energy Services Ltd	60	0.44	0.19	10	0.21	0.04	9	0.21	0.05
1	Delta (Ughelli)	Transcorp Power Ltd	900	6.62	43.87	371	8.16	66.65	358	8.54	72.86
28			13,588	100	1,471	4,542	100	1062	4,189	100	1086
			HHI = 1,471			HHI = 1,062			HHI = 1,086		

a. HHI denotes the Herfindahl-Hirschman Index calculated as HHI = $s_1^2 + s_2^2 + s_3^2 + \ldots + s_n^2$ where s_n^2 represents the squared term of the market share (%) of each active plant on the grid and n indicates the number of plants on the grid;

b. US Department of Justice Benchmark considers an HHI between 1 and 1,500 as a "low concentrated" industry; between 1,500 and 2,500 a "moderately concentrated" industry; and an HHI >2,500 indicates a high market concentration

The Assessment of the Current Level of Market Concentration in NESI – Distribution

- Given that the NESI is in the Transitional Electricity Market stage, grid-connected DisCos are currently regional monopolies operating in uniquely delineated franchise areas.
- As the market evolves, retail competition will gradually be introduced to the DisCo segment of the NESI value chain. Retail competition is expected to increase consumer choice and improve reliability, and customer services.
- In preparation for MTEM where retail competition will be prominent, the Commission has commenced a gradual introduction of competition in the retail segment of the value chain for large customers. This is being done through the Eligible Customer declaration where retail large customers that meet a pre-defined consumption threshold can procure energy directly from the GenCos.
- As at Q4 2023, thirteen (13) Eligible Customers contracted 83.1MW directly from GenCos. This translates to circa 2% of the available capacity of 4,545MW in the NESI during the period.
- The Commission issued Trading Licensing Guidelines to complement Eligible Customer Regulations and further deepen competition in the retail segment of the NESI. In addition to contracting capacity and energy directly from the GenCos, ECs can also procure capacity and energy through trading licensees.
- As at Q4 2023, eight (8) traders had been licensed by the Commission (Table 3.5). It is envisioned that, when operational, these trading licensees will foster greater competition in the wholesale electricity market thus paving the way for a more competitive electricity market in Nigeria.

Table 3.5: List of Trading Licensees in the NESI

S/N	Trading Licensee
1	Comercio Limited
2	ECOF Kaduna Limited
3	Ember Power Limited
4	Electric Utilities Nigeria Limited
5	Onction Services Limited
6	Adefolorosho Energy Network Limited
7	Midbelt Energy Company Limited
8	Centum Dopemu Energy Services Limited

- Notwithstanding the natural monopoly nature of the distribution operation, the introduction of the IEDN regulations, Trading Licenses Guidelines and Eligible Customer Transactions have raised the consciousness of DisCos on the need to improve their operations for better service given the imminent competition.

3.4 Reforms to Engender Competition in the NESI

Section 7(1) of the Act empowers the Commission to "...ensure the development of the Nigerian electricity market from its current transitional electricity market to the medium-term and the long-term electricity market stages or such stages of the market in accordance with such terms, preconditions or features as may be prescribed in the Market Rules or amendment to such Rules as may be approved by the Commission".

To drive the Nigerian electricity market from its current state to a more competitive state, the Commission has carried out several regulatory interventions as outlined below:

3.4.1 Ongoing Amendment to the Market Rules

- Rule 44 of the Market Rules for Transitional and Medium-term Stages of the NESI 2014, vests the initial Stakeholder Advisory Panel (iSAP) with the

power to amend the Market Rules. iSAP in its Q12023 meeting, created a Market Rules Review Working Committee ("RWC") comprising representatives of the TSP, SO, MO, GenCos, and DisCos to amend the Market Rules.

- The RWC was created to carry out an in-depth review of the Rules taking into consideration the challenges encountered in implementing the Rules, and align them with the current market realities. The RWC, as mandated by iSAP, has held four (4) review sessions and proposed 137 amendments to the current Rules. These amendments are meant to improve competition, liquidity and sustainability of the NESI by easing entry, improving standards, strengthening prudential requirements, and compliance with the Grid Codes & the Market Rules. The proposed amendments include the following:
    - Mandating Access to Registered Participants (Rule 22.3.1)
    - Trading in the NEM must be contract-based (Rule 20.1.2)
    - Adequacy of Payment Security Cover (Rule 15.1.8 (d))
    - Combating Energy Theft (Rule 27.6.10 (g))

3.4.2 Amendment of the Eligible Customer Regulations (2017) and the Guidelines on Filing Competition Transition Charge (2020)

- In 2023, the Commission commenced the process for the review and codification of the Eligible Customer Regulations 2017 and the Guidelines on Filing Competition Transition Charge 2020. The key objectives of the Eligible Customer Regulation are to facilitate competition in the supply of electricity and to encourage third-party access to transmission and distribution infrastructure as a precursor to full retail competition in the Nigerian electricity market.
- To align the EC regulations with the current market realities and to address the concern of stakeholders on the implementation of the Regulations, the

Commission in 2023 began a thorough review of the Regulations and conducted stakeholders consultation on the review.

- The review focused on fostering competition in the NESI by seeking to streamline the EC application process with regard to the following:
  - Execution of market participation Agreement with the MO;
  - Supplier of last resort requirements;
  - Confirmation of non-indebtedness by host DisCo;
  - Simplifying the process for filing and reviewing CTC applications;
  - Codification of the ECR and CTC guidelines as a single document;
  - Investment in Network as a condition for EC transaction.

3.4.3 Guidelines for Secondary Escrow Account Management for Bilateral Transactions by Electricity Distribution Licensees (2023)

This Guideline was issued to facilitate bilateral electricity supply contracts between DisCos and GenCos or trading licensees being dedicated to serve improvement in a customer cluster. The Guideline was particularly tailored to derisk the concerned related to the central escrow account administration and the payment waterfall regime in order to provide comfort or securitisation framework to the parties to the bilateral contracts.

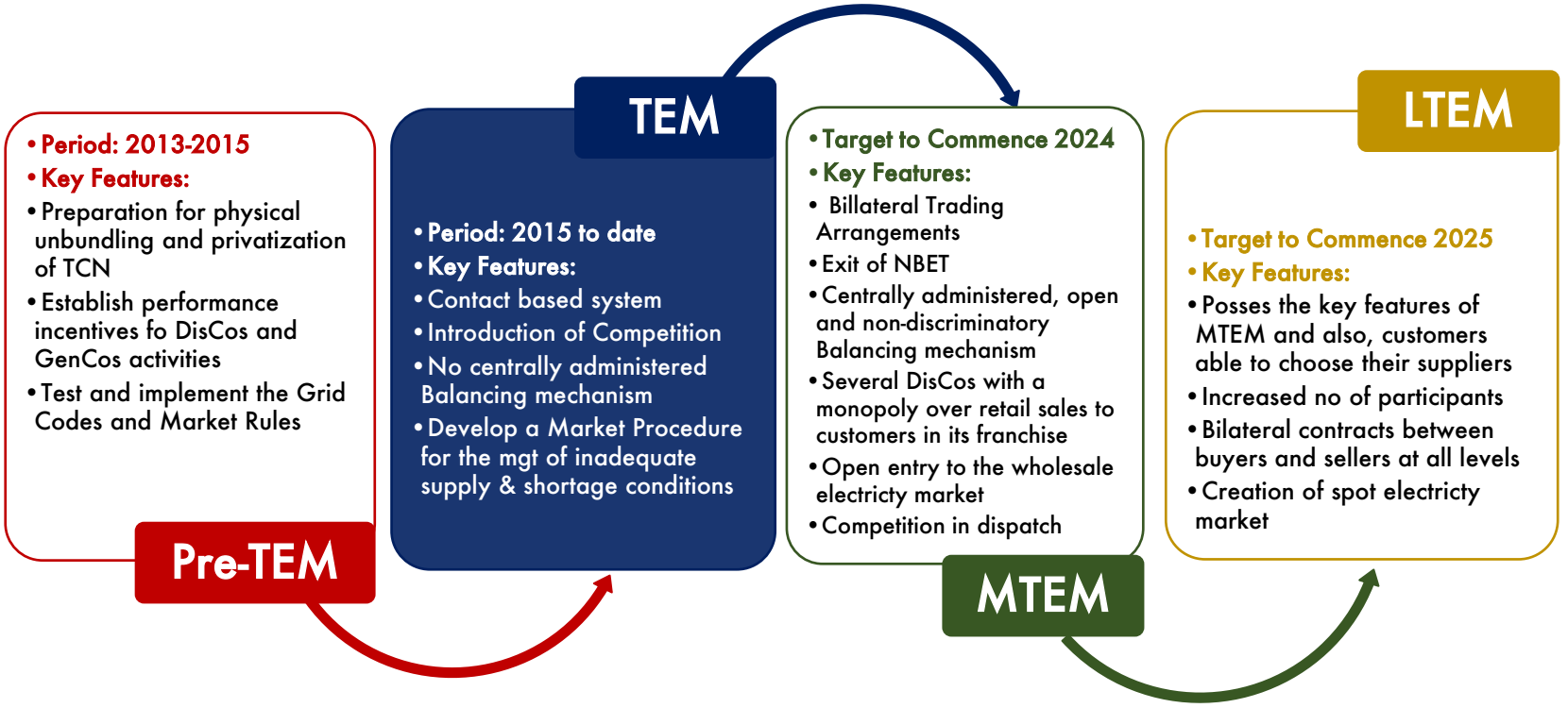
- To foster greater investment in the market and increase market liquidity, the Commission developed the guideline that governs secondary escrow account arrangements to support specific bilateral transactions that would facilitate improved energy offtake and investments in DisCos. The Commission notes that bulk power procurement and third-party investment contracts present an excellent opportunity to improve competition, quality, and reliability of service, and the liquidity position of many of the DisCos in the NESI.

3.5 The Market Design

In pursuit of an orderly market development, Section 7(1) and the Market Rules provide for market transformation to evolve through four (4) developmental stages highlighted in Fig.10 namely:

- Pre-Transitional Electricity Market ("Pre-TEM") stage – during which preparation is made for the corporate unbundling and future privatisation of the Power Holding Company of Nigeria ("PHCN");
- The Transitional Electricity Market ("TEM") stage – is regarded as contract-based arrangements for electricity trading and the introduction of competition for entry into the electricity market;
- Medium-Term Market ("MTEM") Stage – characterised by the introduction of generation competition within the wholesale electricity market and centrally administered balancing mechanism for the wholesale electricity market; and
- Long-Term Market ("LTEM") stage – this is similar to the MTEM stage with an increase in the number of participants, characterised by buyers choosing their suppliers and bilateral contracts between buyers and sellers at all levels.

Figure 10: Stages for Development of the Nigerian Electricity Market



Pre-TEM: Pre-transitional Electricity Market
TEM: Transitional Electricity Market
MTEM: Medium-Term Electricity Market
LTEM: Long-Term Electricity Market

- The pre-TEM stage officially commenced with the sale of the successor companies. During this stage, distribution and generation activities were based on performance incentives while the Grid Code and Market Rules were test-run and necessary amendments identified. Having completed the privatisation process, it was envisaged that upon the handover of the privatised power assets on 1 November 2013, the privatisation agreements would become effective and TEM would be declared by the Minister of Power. This, however, did not happen as a number of the conditions precedent (CPs) set out or referred to in Appendix 1 of the Market Rules were not met at that time.

- The Commission in collaboration with all other critical stakeholders [4] constituted a Transition Steering Group on 24 February 2011 to monitor and ensure the execution of actions necessary for the attainment of the outstanding CPs at the time. Thus, relying on Section (32) of the EPSRA and having satisfied that the CPs set out in the Market Rules have been sufficiently fulfilled to justify the declaration of TEM, the Commission ordered the commencement of TEM from 1 February 2015.

- Further to this, the Commission recognises that while stakeholders expect that the entire market would operate by contracts during TEM, some market participants had not concluded the formalities required to make their contracts effective. The Commission issued a TEM supplementary Order ("TEMSO") on the commencement of TEM providing; the framework for addressing the administration and operational aspects of the TEM; and the trading arrangement terms for the market participants who do not have

[4] These particularly include Ministry of Power, TCN, NBET, DisCos, the Generation Companies/Independent Power Producers/IPPs, the Presidential Task Force on Power and the Bureau of Public Enterprises.

effective contracts or that are yet to fulfil the requirements for participation in TEM. TEMSO provides a framework that addresses amongst others:

i. Interim power sale arrangements for NIPP plants whose privatization transactions are yet to be concluded;
ii. Certain DisCos' inability to provide payment guarantees as required under their TEM contracts; and
iii. Unfulfilled obligations of the MO and SO (now referred to as Conditions Subsequent to TEM).
iv. Energy and capacity charge rates applicable to GenCo that has imported more energy than exported for a given month.

- Although a few constraints such as the legacy cash flow and payment challenges that characterised the pre-TEM persist and hinder the full operationalisation of TEM, the market has continued to evolve since the declaration of TEM.

3.6 Assessment of Conditions Precedent for a More Competitive Market

The underlisted are the Conditions Precedent ("CP") for a transition to a more competitive medium-term market (MTEM) as provided in Part 2 (6.5.3) of the Market Rules. The current status of the CPs is presented in Table 3.8.

a. Several Distributors, each with a monopoly over retail sales to customers within its franchise region;
b. Each Distributor may enter into bilateral contracts for the purchase and sale of energy;
c. Open entry to the Wholesale Electricity Market and, subject to technical and environmental obligations, and within the energy policy defined by the Government, investors can decide the timing, location and type of new generation capacity to construct;
d. Competition in dispatch; and
e. Flexibility in electricity trading arrangements through the implementation of a Balancing Market.

Table 3.6: Status of Conditions Precedent for the Operation of MTEM in NESI

S/N	*Condition Precedents*	*Current Status*	*Commission's Efforts*
1.	Attainment of a sufficient degree of privatisation of Participants	• All DisCos are privately owned • Only 9 out of the 29 on-grid GenCos are yet to be privatised. Eight (8) NDPHC plants are on course to be privatized in 2024. • All government-owned hydro plants have been concessioned This CP is substantially achieved	* The Commission is facilitating the NDPHC privatization process * The Commission supported the operationalizing of Geometric Power, Aba Power Limited, and carving out Aba Power IEDN from EEDC
2.	Presence of the Power System of sufficient generation Participants to achieve an adequate balance between installed generation capacity, reserve requirements, and projected load demand and sufficient numbers of such generators to avoid the likelihood of abuse of market power by a generation Participant;	• There is sufficient installed capacity to meet the nation's electricity demand, However, Available Capacity falls short of demand due to Gas constraints and TCN bottlenecks • Ownership of Generating plants is diverse mitigating the probability of market abuse Parts of this CP is substantially achieved	* The Commission has intervened to ensure Gas constraints and other obstacles preventing GenCos from operating optimally are resolved through: * Gas Supply Stabilization Fund * Service Level Agreement * Economic Merit Order Dispatch * Grid Code Review
3.	Presence in the Wholesale Electricity Market of a sufficient number of competitor creditworthy distribution Participants no longer holding Vesting Contracts to avoid the likelihood of abuse of market power in any such Participant;	• The Creditworthiness of DisCos has improved through the escrow account arrangement. • NBET vesting contracts to be novated before the expiration of NBET's license in Q4, 2024 • Transition to bilateral contracts will replace vesting contracts upon NBET's exit from the market as a government bulk trader	* The 2023 Order on "Transitional Accounting Treatment of Tariff Related Liabilities in the Financial Records of Market Participants" is expected to remove encumbrances relating to tariff shortfall liabilities in the books of DisCos to improve their creditworthiness.

		Progress being made towards the attainment of this objective	* Partial Activation of Contracts *Novation of NBET Contracts
4.	Satisfaction of infrastructure preconditions, including the necessary metering and information technology required to implement the metering, balancing mechanism, and settlement systems in accordance with these Rules;	• In response to the Commission's orders and directives, 99% of Maximum Demand (MD) customers are metered while around 46% of non-MD customers are metered. • Deployment of SCADA is ongoing with around 22% visibility of the entire network Progress being made towards the attainment of this objective	* The Commission's Meter Acquisition Fund continues to accumulate and will rapidly accelerate meter deployment to non-MD Customers * The Commission has approved DisCos and TCN's PIPs to fast-track the full deployment of IoT and DT meters and SCADA.
5.	Audit of the Settlement Software for the Medium-Term Market by independent auditors competent to perform audits of such software, to determine its consistency with these Rules and the Grid Code;	• The Market Operator is in the process of finalising and deploying a settlement software that meets the current needs of the market and is scalable to take various add-ons required for market settlement in MTEM. Progress being made towards the attainment of this objective	*The Commission has conducted the first Technical & Operational audit of the MO/SO. The Commission directives drawing from the recommendations of the audit have been forwarded to said parties for compliance and further requests the MO/SO to commence subsequent audits.
6.	The satisfaction of such other conditions, if any, as are specified by the Commission in relation to the commencement of the Medium-Term Market.	None at the moment	

The summary presented in Table 3.6 indicates the following regarding the progress made towards fulfilling the CPs for moving the market to the next competitive stage – MTEM:

i. Two (2) CPs regarding the degree of privatization and sufficient generation participants have been largely achieved.

ii. Significant progress has been achieved with regard to Three (3) CPs on the satisfaction of infrastructure preconditions; market settlement software systems; and the large number of competitive/creditworthy DisCos and it is projected that the 3 CPs will be sufficiently achieved in 2024.

In this section, it is established that:

a. Significant privatisation has occurred across the value chain of NESI – all the distribution companies have been privatised and only Eight (8) NIPP companies remain to be privatised and the process is ongoing;
b. Competitive entities in NESI have substantially increased over time and still progressing with far-reaching regulations that incentivise private participation;
c. The Herfindahl-Hirschman Index ("HHI") score for the level of market concentration in the NESI is estimated to be less than 1,500 (i.e., low concentration), indicating existence of competition in the market;
d. In preparation for MTEM stage some level of retail competition is taking place through Eligible Customer transactions;
e. The Market Operator is in the process of finalising and deploying a settlement software that meets the current needs of the market and is scalable to take various add-ons required for market settlement in MTEM.

f. More contracts have been activated and the process of transitioning to direct contracting between DisCos and GenCos is ongoing. The implementation shall be done in a way that there will not be disruption to generation and supply

g. The review of CPs for transition to a more competitive market as provided in the Market Rules indicates that some of the CPs have been substantially met.

4 Driving Improvement in Infrastructure, Network Reliability and Coverage

This section analyses the two major issues (i.e., reliability and access to networks) identified as part of the constraints to the development of a competitive electricity market as well as efforts and progress being made to address these challenges. Complete resolution of both the operational and technical challenges in electricity transmission and distribution remains one of the top priorities of the Commission. The Commission, in addition to regulations such as the investment in network regulations, engages in the coordination of special interventions toward resolving the operational and technical challenges in electricity transmission and distribution.

4.1 Existence of Robust Metering and Information Technology Infrastructure

Metering and information technology infrastructure have improved substantially compared to 2013. Further deployment of necessary technology is still ongoing and is at different stages of implementation in the wholesale and retail markets.

Wholesale Market:

- Grid metering deployment has been largely achieved. Grid meters exist as MO has completed the installation of boundary meters and DisCos have substantially installed smart meters with remote readability on 33kV and 11kV feeders;
- As presented in Table 4.1, 99.5% of 11kV feeders and 84.3% of 33kV DisCo feeders have been metered as at December 2023. Relative to 2022, the metering rate on 11KV feeders increased by 5 percentage points to 99.5% while the number of 33KV Feeders metered increased by 10, from 834 to 844.

Table 4.1: 11kV & 33kV Metering Status in the NESI as at Dec. 2023

DisCo	*No. of 11kV Feeders*	*No. of 11kV Feeders Metered*	*Metering Rate*	*No. of 33kV Feeders*	*No. of 33kV Feeders Metered*	*Metering Rate*
Abuja	335	324	97%	107	107	100%
Benin	235	235	100%	74	74	100%
Eko	316	316	100%	98	96	98%
Enugu	171	171	100%	74	73	99%
Ibadan	264	264	100%	127	3	2%
Ikeja	294	294	100%	73	73	100%
Jos	140	140	100%	45	45	100%
Kaduna	116	116	100%	64	64	100%
Kano	123	123	100%	69	69	100%
Port-Harcourt	142	142	100%	71	71	100%
Yola	97	97	100%	42	37	88%
All Discos	2,233	2,222	99.5	844	712	84.3

- Source: Computed based on data sourced from the DisCos

- While the deployment of the Supervisory Control & Data Acquisition ("SCADA") system is yet to be completed, SMART meters have been installed at GenCo-TCN interfaces for real-time reading of energy outputs. This has substantially improved the visibility of energy readings in the NESI.
- Notwithstanding the progress made, there is an ongoing process for the finalisation and deployment of SCADA systems for end-to-end visibility and control;
- The proposed separation of SO from TSP/TCN will further ensure prioritisation of infrastructure critical to System and Market Operation, e.g., SCADA, EMS and smart grid meters, System Telecoms, and control room maintenance and upgrade.

Retail Market

IT infrastructure development has made substantial progress in the retail segment of the NESI value chain with improved visibility.

- The data in Table 4.2 indicates that most of the DisCos in the NESI have, as at December 2023, metered most of their Maximum Demand ("MD")

customers with an average of 79% of MD customers being metered. In total, 84,772-out of 113,856 MD customers in NESI had been metered as at December 2023. Significant improvements were made between 2022 and 2023 with the number of registered MD customers increasing by 46.4% while the number of metered MD customers rose by 2.3 percentage points.

Table 4.2: MD Customers Metering Status as at December 2023

DisCos	*Registered MD Customers as at Dec. 2023*	*Metered MD Customers as at Dec. 2023*	*Metering Rate as at Dec 2023*
All DisCos	113,856	84,772	79%

Source: Computed based on data sourced from the DisCos

- The data presented in Table 4.3 indicates that 2,558,617 additional end-use non-MD meters were installed post-privatisation from 2013 to December 2023 including the replacement of faulty meters. The majority of the meters were deployed under different schemes – Credited Advanced Payment for Metering Implementation ("CAPMI"), Meter Assets Provider ("MAP"), and National Mass Metering Programme ("NMMP") – which jointly accounted for 91.79% of the meters installed during the period. Thus, 8.21% of the meters were installed through direct financing by the DisCos.
- The ratio of metered customers to registered customers' population in the last column of Table 4.3 and represented in Fig. 11 indicates an average end-use customers' metering status of 44.39%. Only Ikeja, Eko and Abuja DisCos had metered more than 50% of their registered customers as at 31st December 2023.

Table 4.3: Summary of Non-MD Customer Metering Status Since Privatization

DisCos	Meters Inherited During Privatization (2013)	DisCos/BPE pledge on Metering per Annum	Breakdown of the Total Metered Installed by Different Programmes/Interventions					Total Meters Installed Since Privatization	Total Metered Customer as at 31 Dec. 2023	Total Meters Replacement Since privatization	Total Registered Customer as at 31 Dec. 2023	Customer Metering Status (%) as at 31 Dec 2023
			Disco Finance (2013 – 2023)	CAPMI (2013 – 2016)	MAP as at 31 Dec 2022	NMMP as at 31 Dec 2023	Vendor Finance as at 31 Dec.2022					
	A.	B.	C.	D.	E.	F.	G.	H=C+D+E+F+G	I.	J.= I – B – H	K.	L.
Abuja	392,488	150,000	2,506	49,775	342,496	100,475	3,211	498,463	856,435	31,950	1,414,356	60.55%
Aple					8,475		1,442	9,917	54,462	35	191,405	28.45%
Benin	422,308	264,000	11,987	101,640	42,931	41,301	3,090	197,859	659,511	-19,212	1,324,373	49.80%
Eko	189,542	204,000	9,494	61,527	104,820	84,166	0	260,007	431,336	21,624	736,146	58.59%
Enugu	218,718	48,000	973	1,396	207,997	91,512	0	301,878	616,210	-88,446	1,396,440	44.13%
Ibadan	413,170	217,611	36,000	150,766	291,907	117,379	0	596,052	1,046,873	-22,224	2,401,864	43.59%
Ikeja	391,724	120,000	60,305	-	490,630	111,703	2,109	664,747	898,202	143,264	1,238,295	72.54%
Jos	165,046	100,000	13,068	63	19,118	103,403	0	135,652	243,049	53,534	730,402	33.28%
Kaduna	175,275	187,200	32,606	17,016	22,245	47,615	0	119,482	206,076	87,928	864,128	23.85%
Kano	146,329	100,000	2,182	-	6,357	83,480	0	92,019	210,338	31,056	872656	24.10%
PH	199,501	252,000	40,868	24,888	136,682	82,720	0	285,158	494,246	-6,698	1,179,194	41.91%
Yola	61,599	51,600	1,360	3,725	2,681	53,001	0	60,767	125,988	7,667	813313	15.49%
Total	2,775,700	1,694,411	211,296	410,796	1,676,339	916,755	6,762	3,222,001	5,842,726	240,478	13,162,572	44.39%

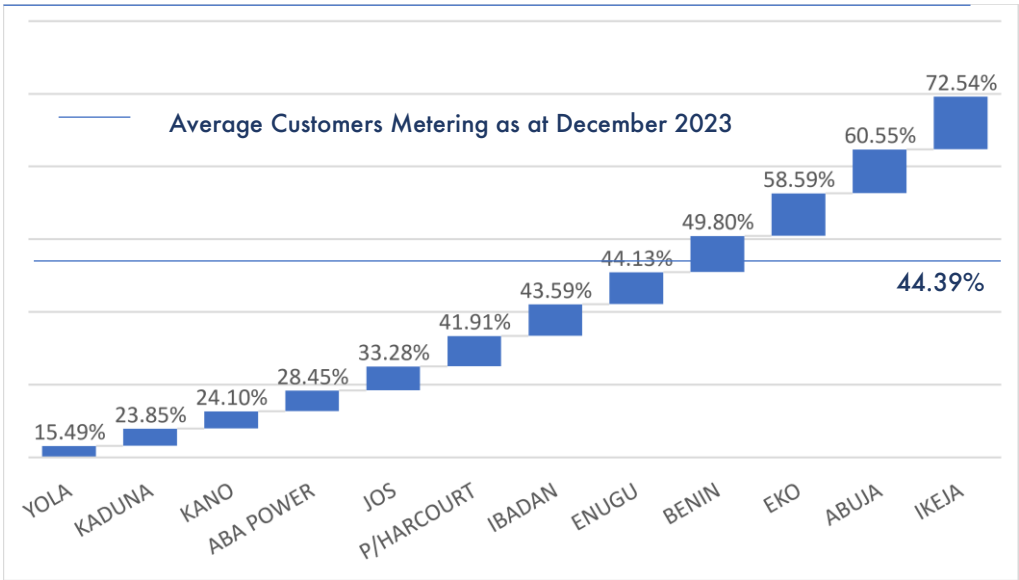
Source: Nigerian Electricity Regulatory Commission and Electricity Distribution Companies

Notes of the table:

1. DisCos are Electricity Distribution Companies
2. Total represents the eleven (11) electricity distribution companies altogether
3. BPE, CAPMI, MAP, and NMMP denote Bureau of Public Enterprise; CAPMI is Credited Advanced Payment for Metering Implementation, Meter Assets Provider, and National Mass Metering Programme respectively

- Customer enumeration and metering remain a priority for the NESI, given their impacts on improving customers' satisfaction, energy accounting, revenue assurance, and overall improvement in the financial viability of NESI.

Figure 11: Customer's Metering Status (%) by DisCos as at 2023



- With only 44.39% of the end-use customers currently metered, collection losses due to customer apathy pose a serious challenge to NESI sustainability.
- In continuation of the efforts to intensify the roll-out of meters, the Commission continued to monitor the implementation of the MAP and NMMP Regulations 2021 which provides a framework that allows for a smooth and concurrent implementation of both MAP and NMMP schemes to fast-track meters deployments.
- The Commission is working with the critical government stakeholders to fast-track the implementation of mass metering through Presidential Metering Initiatives ("PMI") and the DisReP World Bank programme.

- The Commission has granted approval for the utilisation of the Meter Acquisition Fund ("MAF") being administered centrally by a Fund Manager – NESI Stabilization Strategy Limited ("NESI-SSL") – for the deployment of IoT feeder meters and end-user meters to fast-track the closure of the end-user metering gap.

4.2 Ensuring Improved and Efficient Networks Through Innovation

Underlisted below are some of the key activities of the Commission towards ensuring improvement in networks in the NESI :

- The commission approved the 5-year Performance Improvement Plan ("PIP") of TCN vide the Order on PIP and transmission Multi-Year Tariff Order ("MYTO") issued in December 2023 to ensure the prioritisation of projects critical to improving operational and technical performance. The PIPs include TCN proposed investments required to address transmission network bottlenecks, free up part of the stranded generation capacity, and address other related issues inhibiting the flow of energy and grid stability. It is noteworthy to state that the Commission had earlier approved the PIPs of the DisCos.
- The Commission continued the monitoring implementation of DisCos' PIPs as approved by the Commission while the implementation of TCN's PIP commenced in 2024.
- Continued the monitoring of the implementation of the Service Level Agreements ("SLA") executed by TCN and DisCos, outlining the performance commitments of each party for the provision of services and energy offtake. While DisCos commit to investment in reinforcing its feeders, transformers, and protection equipment, TCN is expected to align and prioritise its investments towards resolving transmission and distribution interface bottlenecks and reduction in the incidence of trippings. The SLA

has been executed and is being implemented.

- Issued and continue to implement the MTYO Order reaffirming the obligation of the Transmission System Provider ("TSP") under TCN for the payment of "generation capacity charge" and "loss of revenue" to DisCos attributable to TCN's inability to deliver power to the affected DisCo and vice-versa;

- Directed TCN vide the TCN MYTO Order 2024 issued in December 2023 to escrow share of the tariff revenues meant for CAPEX in a dedicated PIP implementation account and use the fund strictly for the implementation of the approved PIPs. The Commission further directs TCN to provide monthly reports of the schedule of remittance to and utilisation from the PIP implementation account.

5 Panels and Committees in the Industry

In preparation for the transition of the NESI to a more competitive market, the Commission has empanelled, constituted, and empowered the Panels, Committees, and Counsellors required in Part 10, Rule 42 of the Market Rules as Conditions Precedent ("CP") for the operation of a competitive electricity market in Nigeria.

- Considering that NESI is a regulated industry, there are legal and regulatory instruments (including Grid Code, Market Rules, Metering Code, and Distribution Code) developed to guide the operations of the industry. To ensure that these instruments are regularly reviewed and amended to align with changing and emerging circumstances in the industry, Rule 42 of the Market Rules mandates the Commission to constitute specific Panels and Committees to drive the review process.

5.1 Stakeholder Advisory Panel

The 4th Initial Stakeholder Advisory Panel ("ISAP") was inaugurated by the Commission on the 24th May 2021. Table 5.1 presented the composition of ISAP membership as provided in the Market Rules.

- In 2023, ISAP met twice (2) in February and November, where issues related to Bank Guarantees, Spinning Reserves, Domestic Gas Pricing, and Liquidated Damages were extensively deliberated ISAP empanelled a Rules Working Committee ("RWC") to review the Market Rules.
- The RWC constituted by ISAP held four (4) sessions to review the Market Rules and proposed several amendments for the Transitional Electricity Market. The proposed amendments aim to align the Market Rules with the current realities and ease the administration of the market.

5.2 Dispute Resolution Panel

There is currently a functional Dispute Resolution Panel ("DRP") in the NESI inaugurated by the Commission on the 7th May 2020

- As indicated in Table 5.1, the current DRP consisting of three (3) members is the 2nd to be inaugurated by the Commission.
- Members of the panel as recommended by the Dispute Resolution Counsellor ("DRC") and appointed by the Commission are selected professionals who have both the competence and experience (as specified in Rule 42.3.10) to adjudicate disputes that may arise between the market participants; and

5.3 Grid Code Review Panel

There is currently a functional Grid Code Review Panel ("GCRP") in the NESI inaugurated by the Commission on the 22nd & 23rd of November 2018.

- As indicated in Table 5.1, the current GCRP consisting of fifteen (15) members is the 3rd to be inaugurated by the Commission.
- Since its inauguration, GCRP has been meeting regularly to carry out its functions as spelled out in Paragraph (9.2) of the Grid Codes. More importantly, the GCRP is currently reviewing the Grid Code to reflect the current level of development in the industry.

Table 5.1: Industry Panels and Committees

Panel/Committee/Counsellor	*Functions*	*Members*	*Status*
1. Initial Stakeholder Advisory Panel ("SAP")	a. Reviewing the Market Rules and the Grid Code and proposing and or approving amendments thereto on an ongoing basis; and b. Advising the Commission on such specific technical issues relating to the operation of the Market Operator Administered market, as may be referred to the Stakeholder Advisory Panel by the Commission	I. Initial SAP: 12 Members • *3 Representatives of GenCos (2 for Thermal & 1 for Hydro* • *1 Representative of the TSP* • *3 Representatives of DisCos* • *1 Representative of the special trader provided that the term of his representation will end on the initiation of MTEM* • *1 Representative of SO with no saving right* • *1 Representative of MO with no saving right* • *2 Independent representatives* II. Final SAP: 11 Members ▪ *2 Representatives of GenCos* ▪ *1 Representative of the TSP* ▪ *2 Representatives of DisCos* ▪ *1 Representative of Eligible customers* ▪ *1 Representative of the traders* ▪ *1 Representative of SO with no voting right* ▪ *1 Representative of MO with no voting right* ▪ *2 Independent representatives appointed by the Commission*	Active • *The current ISAP is the 4th to be constituted and inaugurated by the Commission on 24 May 2021 in accordance with Section 42.1.1(a) & (b)*

2. Dispute Resolution Counsellor ("DRC")	a. Administering and ensuring the effective operation of the Dispute resolution provisions of the Market Rules and the Grid Code; b. Specifying the format for Notices of Dispute and the Response thereto; c. Nomination of members of the Dispute Resolution Panel; d. Assigning members of the Dispute Resolution Panel to mediate, conciliate, arbitrate, or otherwise resolve Disputes in accordance with Rule 43 of the Market Rule; and e. Facilitating the resolution of Disputes governed by the dispute resolution provisions of the Market Rules and the Grid Code	• *1 person appointed by the Commission for an initial fixed term of up to 5 years and eligible for re-appointment for one additional fixed term of up to 5 years*	Active • *The current DRC appointed by the Commission on 1 October 2022 in accordance with Section 42.1.2 of the Market Rules is the 2nd to be appointed*
3. Dispute Resolution Panel ("DRP")	a. Arbitrating or otherwise resolving disputes between: b. The System Operator or the Market Operator or a transmission licensee and any Participant; c. The Market Operator and any person who has been denied certification by the Market Operator as a Participant; and d. Participants; to the extent that such Disputes are, in accordance with the provision of the Market Rules of the Grid Code, governed by Rules 43 of the Market Rules	I. Initial Composition • *At least 3 qualified persons appointed by the Commission from the nomination of the DRC for a term of 5 years and eligible for re-appointment for a further term of 5 years* II. Full Composition at the Initiation of MTEM • *At least 10 qualified persons appointed by the Commission from the nomination of the DRC for a term of 5 years and eligible for re-appointment for a further term of 5 years*	Active • *The current DRP appointed and inaugurated for a second term by the Commission on 7 May 2020 in accordance with Section 42.3.8(a), (b)& (c) is the 2nd to be constituted.*

4. Grid Code Review Panel ("GCRP")	Section 9.2 of Appendix 9 of the Grid Code provides that GCRP shall be responsible for developing and improving the Grid Code through regular review, consultation research, and the consideration of amendment submission by users from time to time. Derived from this provision the functions of the GCRP include the following: a. Keep the Grid Code and its working under review; b. Review all amendments to the Grid Cod, which NERC or any user or TCN may wish to submit for consideration by the panel from time to time c. Publish recommendations as to amendments to the Grid Code that TCN or the Panel deems necessary for desirable and the reasons for the recommendations d. Issue guidance in relation to the Grid Code and its implementation, performance, and interpretation when asked to do so by the user; e. Consider what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by TCN; and f. Consider and identify changes to the Grid Code to Remove unnecessary sections of clauses that are relevant to the effective operation of the Nigerian Power System	I. Initial Composition • *15 qualified members for a term of 5 years and eligible for re-appointment for a further term of 5 years* • *Head of System Operations as Chairman* • *4 Representatives of TCN each for Network, System, Market, and Safety Operations* • *1 Representative of NERC* • *3 Representatives of GenCos (2 for Thermal/Gas & 1 for Hydro)* • *3 Representatives of DisCos* • *1 Representative of REA* • *1 Representative of NBET* • *1 Representative of directly connected customers and MD customers with ≥ 1MW* *Each of the Panel members shall be appointed by their respective industry sector pursuant to the rules issued by the Panel in Appendix 9.4*	Active • *The current GCRP was constituted and inaugurated by the Commission on 22-23 November 2018 in accordance with Appendix 9 of the Grid Code*
5. *Other Panels and Committees*	a. As may be specified by the Commission, provided that the powers and responsibilities of such panels/committees shall not conflict with the functions, powers, and responsibilities of the Panels and Committees constituted pursuant to Rule 42 of the Market Rules	• *The composition and tenure of the members are as may be determined by the Commission*	• *None at the Moment*

6 Conclusion and Recommendation

Since Privatization, the Nigerian Electricity Market has undergone significant changes that have advanced the competitive structure of the Market.

Pursuant to Section 7(2)(c) of the EA 2023, the under-listed are recommended for the Honourable Minister's consideration to ensure a seamless transition and/or improvement in market performance.

i. Prioritization of the development of the short and long-term National Integrated Energy Policy and Strategic Implementation Plan;

ii. Provision of a clear subsidy financing plan to ensure full and timely settlement of invoices for energy generated by GenCos and gas supplied by GasCos thereby ensuring sustainable generation;

iii. Provision of clear policy on gradual subsidy phase-out and path to cost-reflectivity to enhance bilateral transactions and improve the liquidity of the NESI;

iv. Prioritise the completion of the ongoing Federal MDAs verification platform to ensure accurate billing and timely payment of Federal MDA bills.

v. There is an urgent need to fast-track the privatisation or improved management of the FGN-owned NDPHC plants and address the obstacle associated with gas supply and evacuation infrastructure to unlock stranded capacity;

vi. There is an urgent need to prioritize and finalise the ongoing procurement of the SCADA system by TCN to enhance the reliability

and stability of the grid, improve monitoring and control, and ensure optimal load dispatch;

vii. While the necessary regulatory framework for the establishment of the Nigerian Independent System Operator ("NISO") has been provided by the Commission, the leadership and support of the Minister are required to ensure full operationalization of the NISO to enhance industry transparency and drive confidence in the market;

viii. Fast-track the implementation of government interventions in metering, particularly the Presidential Metering Initiative ("PMI") and World Bank's Distribution Sector Recovery Programme ("DisRep") amongst others.

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