

Vision: Electricity on Demand

2022

**Market
Competition
Report**

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



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The market competition report is prepared in compliance with Section 24(2) of the Electric Power Sector Reform Act (“EPSRA”) 2004 which mandates the Commission to prepare an annual report for the Minister as to the potential for competition in the Nigerian Electricity Supply Industry (“NESI”). This report provides a review of the level of competition in the NESI and assesses the progress for a transition to a more competitive market. The report further provides recommendations for transition to a more competitive market pursuant to Section 26 of ESPRA.

The report is directed at a wide spectrum of readers including government officials and institutions, private sector, energy economists, engineers, financial and market analysts, potential investors as well as 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
CAPEX	Capital Expenditure
DisCos	Distribution Companies
DSO	Distribution System Operator
ECR	Eligible Customer Regulations
EEDC	Enugu Electricity Distribution Plc
EKEDC	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
JEDC	Jos Electricity Distribution Plc
KDEDC	Kaduna Electricity Distribution Company Plc
KEDC	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
PHEDC	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 provides a review of the level of competition in the Nigerian Electricity Supply Industry ("NESI") and assesses the progress towards a transition to a more competitive market. The objective is to offer regulatory guidance to the Federal Government of Nigeria ("FGN") towards a possible declaration of a more competitive market.

Legal Authority: The report is prepared in compliance with Section 24 (2) of the Electric Power Sector Reform Act ("ESPRA" or the "Act") which provides that " ...the Commission shall prepare, each year, a report for the Minister as to the potential for competition in the Nigerian electricity supply industry and these reports shall present the Commission's analysis and recommendations as to whether the Nigerian electricity supply industry has developed to the point where a more competitive market ought to be established under section 26, having regard to;

- a. The degree of privatisation that has occurred;
- b. The existence of a sufficiently large number of potential competitive entities so as to avoid the likelihood of abusive market power; and
- c. The existence of other preconditions, including the necessary metering and information technology infrastructures, required for the operation of a more competitive electricity market."

2. Market Structure

Nigerian Electricity Market Structure: The power sector reform was set out to transform the NESI from a state-owned vertically integrated monopoly to a competitive electricity market. In order to ensure an orderly transition, the market was designed to pass through four (4) developmental stages as provided in the Market Rules namely:

- a. Pre-Transitional Electricity Market (Pre-TEM);
- b. Transitional Electricity Market ("TEM");
- c. Medium Term Market ("MTEM"); and
- d. Long-Term Electricity Market ("LTEM").

• Section 24(2) of the ESPRA mandates the Commission to prepare the Market Competition Report for the Honourable Minister of Power





The pre-TEM stage officially commenced with the sale of the successor generation and the divestment of 60% majority stake in distribution companies in 2013 and serves as the period for the fulfilment of some condition precedent (“CPs”) set out in the Market Rules for the declaration of TEM. The TEM, the second stage in market evolution, commenced on the 1st of February 2015 following the declaration by the Commission. While a few constraints such as the legacy cash flow and payment challenges prevalent at the time are yet to be fully addressed, the market has continued to evolve.

3. Competition in the Nigerian Electricity Market

- In order to ensure an orderly transition, NESI was designed to pass through four developmental stages – Pre-TEM, TEM, MTEM and LTEM
- NESI is currently at TEM and a significant level of privatisation has occurred across the value chain

Degree of Privatization Across the Value Chain: The electricity supply value chain was substantially privatized following the unbundling of the vertically integrated government-owned monopoly. The privatisation process led to the handing over of then six (6) successor generation companies and eleven (11) successor distribution companies to private investors in 2013. Fig A presents the summary of the level of privatisation across the value chain.

Fig. A: Level of Privatization Across the Value Chain in NESI

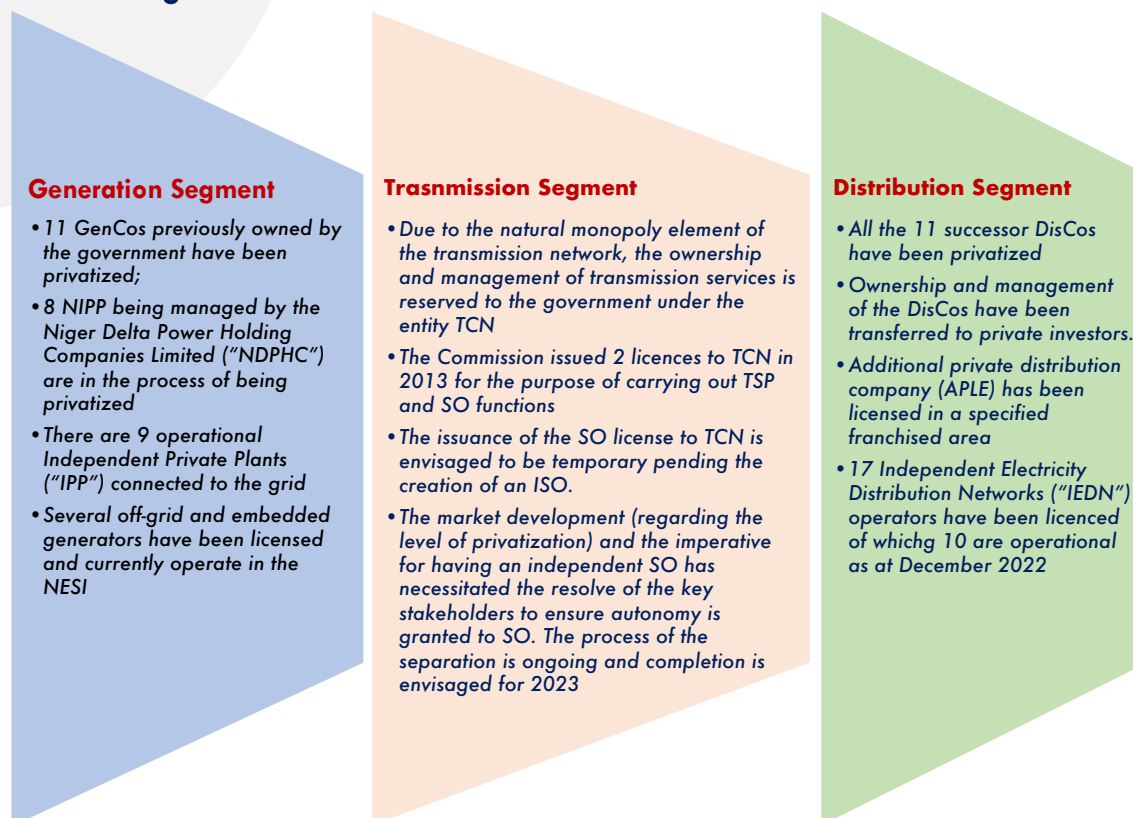




Fig. A shows that a significant level of privatisation has occurred in the generation and distribution segments of the value chain. It is equally noteworthy that an ongoing process to unbundle the transmission segment and to privatise a few generation companies currently owned and managed by the three (3) tiers of government 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. There are currently twenty-eight (28) operational generation companies and twelve (12) grid-connected distribution companies in NESI. There are also several licensed embedded generation and independent distributors that are currently in operation providing service to consumers. The level of competition is still progressing with the development and issuance of far-reaching regulations that incentivise more private participation. Specifically, power contracting has taken various forms including bilateral, vesting, eligible and cross-border transactions which have significantly improved competition in NESI. The under-listed facts are noted about the level of competition in the NESI:

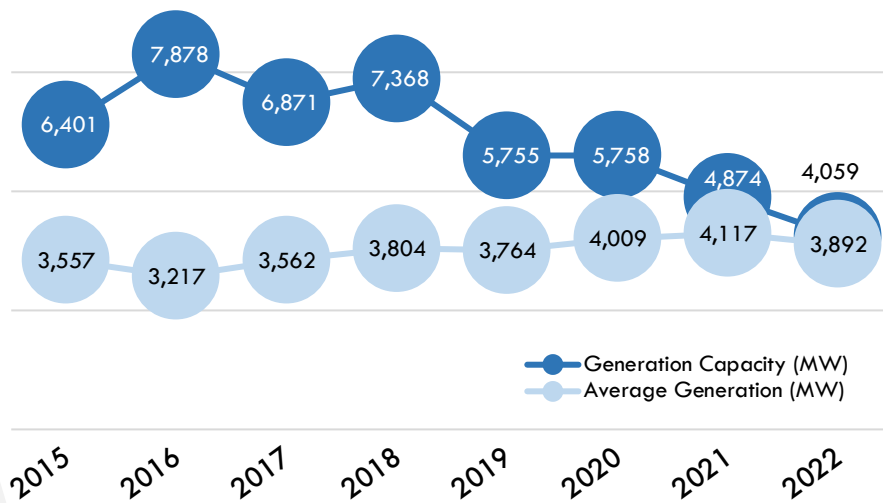
- The level of competition in NESI has substantially increased with the participation of many competitive entities.
- There are currently 28 operational GenCos and 12 grid connected DisCos in NESI
- The estimated HHI for the level of market concentration at the generation segment is <1,500 (i.e., a substantial level of competition).

- a. The **Herfindahl-Hirschman Index** ("HHI") for the level of market concentration in NESI using both the potential capacity (i.e., 80% of the total installed capacity), the available capacity and actual generation is estimated to be less than 1,500 points (i.e., low concentration) indicating a substantial level of competition at the generation segment of the value chain.
- b. As represented in Fig. B, the installed and operational generation capacities of the plants connected to the grid have continued to increase from 2015 when GenCos were handed over to private investors. As at December 2022, twenty-eight (28) power plants were operational in NESI. The higher number of existing generation plants has somewhat improved the level of competition in that segment of the value chain;
- c. The installed capacity in NESI grew by 7.95% from 12,132MW as at December 2015 to 13,097MW as at December 2022. The available capacity stood at 4,059MW as at December 2022;





Fig B: Available Capacity and Average Generation in NESI

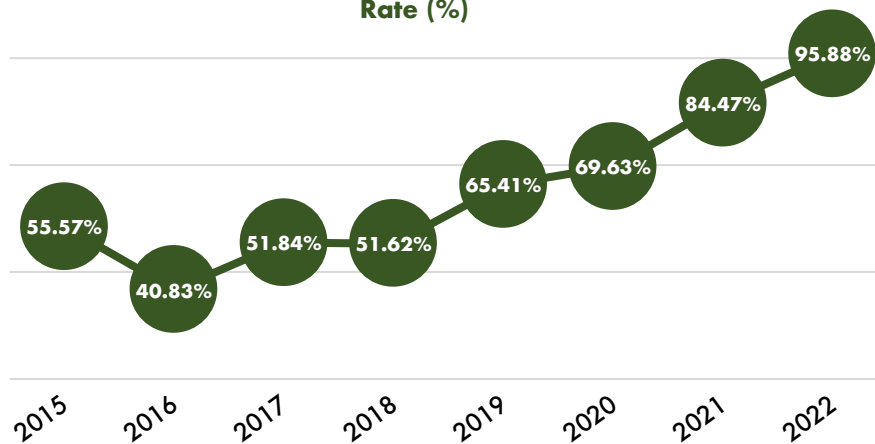


Since the commencement of TEM:

- Additional capacity of 965MW has been added to the grid.
- Average daily generation increased by 9.42%
- Capacity utilization rate rose by 40.31 percentage points.

- d. While the Commission continues to provide direction and guidance towards overcoming the multitude of NESI challenges, the daily average generation has continued to grow. The average generation of 3,892MWh/h recorded in 2022 was 9.42% more than the daily average generation of 3,557MWh/h recorded in 2015. It is noteworthy that margin between the available capacity and actual generation is accounted for by gas shortages, transmission and distribution networks constraints and sometimes commercial considerations.
- e. The capacity utilization rate, represented in Fig. C, rose by 40.31 percentage points from 55.57% in 2015 to 95.88% in 2022;

Fig C: Plant Average Available Capacity Utilization Rate (%)





- f. Additional generation capacity is expected to be available with the completion of the ongoing construction of power plants, contract activation and novation, improved policy direction by the government and regulatory oversights of the Commission.
- g. The ongoing efforts to improve generation and capacity utilisation include:
- Ongoing gradual activation of the industry contracts and transition to bilateral contracting to provide certainty to the minimum volume of energy expected of each GenCo and proper allocation of risks among the operators;
 - The introduction of the EC transactions and distribution franchising to promote open access to the transmission and distribution networks;
 - Approval and implementation of PIPs (5-year capital investment plan) filed by the DisCos to ensure the execution of projects critical to improving their operational and technical performances;
 - Introduction of “take or pay” obligation on the capacity equivalent of MYTO load allocation for each DisCo in line with the terms of the vesting contract signed with NBET;
 - Monitoring of the implementation of the provisions of SLAs between DisCos & TCN;
 - Franchising and approval of third-party investment in electricity networks.

There are robust metering and IT infrastructure in NESI:

- *Boundary meters have been fully installed*
- *94% of the 11kV feeders and 96% of the 33kV feeders in NESI have been metered.*
- *IOT/SMART meters at GenCo-TCN interface points have been fully installed.*

Existence of Robust Metering and Information Technology Infrastructure

Metering and information technology infrastructure in NESI have substantially improved with IoT metering and projects are ongoing both at the wholesale and retail markets;

Wholesale Market: Grid metering deployment has been largely achieved. The MO has completed the installation of boundary meters while the installation of smart meters on the 33kV and 11kV feeders by the DisCos is ongoing to enable real/near-real-time data collection.

- a. About 94% of the 11kV feeders and 96% of the 33kV feeders owned by the DisCos have been metered as at December 2022 while 26%





of the metered 11kV feeders and 48% of the metered 33kV feeders have functional APIs that are fully integrated to the Commission’s system for real or near-real time access to operational data by the Commission;

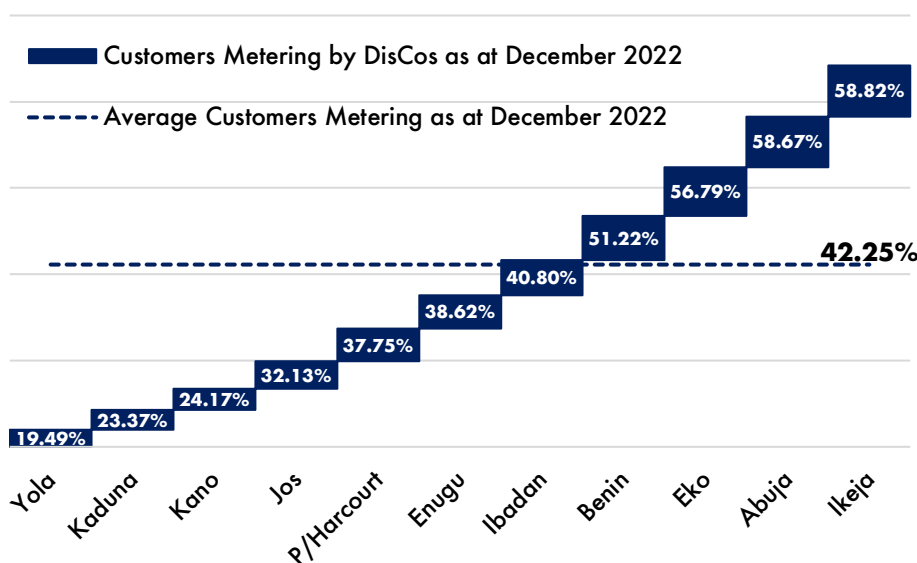
- b. In addition to the ongoing engineering, design and construction of the Supervisory Control & Data Acquisition (SCADA) system for full coverage of the transmission operation, TCN has deployed IoT/SMART meters at GenCo-TCN interface points, which allows for real-time reading of generation data.

Retail Market: Metering and IT infrastructure development have made substantial progress in the distribution and retail segment.

- c. Seven (7) DisCos have, as at December 2022, metered between 80–100% of their MD customers. The metering of non-MD customers has also progressed under different initiatives of the Commission and the Federal Government. A total of more than 2,588,617 additional non-MD meters have been installed post-privatisation while most of the registered MD customers have been fully metered.
- d. The ratio of metered to registered customers represented in Fig. D shows customers metering status of 42.25% in the NESI as at 31st December 2022. The Figure further indicates that Ikeja, Eko, Abuja and Benin DisCos had metered more than 50% of their registered as at the end of 2022.

- 77% of the MD customers have been metered while 42% of the non-MD customers have meters
- Not less 2.588M non-MD meters have been installed post-privatisation.
- There are three ongoing metering initiatives – MAP, NMMP and MAF to close the metering gap in NESI.

Fig. D: End-User Metering Status (%) as at 31 Dec. 2022





- e. The underlisted are parts of the efforts towards improving metering in NESI:
- The review of the MAP Regulations (2018) in 2021 to accommodate NMMP allows for the smooth and concurrent implementation of both MAP and NMMP schemes. This was done to fast-track the deployment of meters and closure of the metering gap in NESI;
 - Sequel to the completion of Phase 0 of the NMMP, the process for the commencement of Phase 1 of the NMMP is being finalised.
 - The Commission had, vide the December 2022 tariff order, created a Meter Acquisition Fund whereby a guaranteed revenue stream would be available to provide a leverage for long term financing for metering and possibly other capital expenditure;

4. Fulfilment of Conditions Precedent for a More Competitive Market

- The 5 CPs for moving the market to the next competitive stage have progressed significantly.
- All the Panels required as CPs for the operation of TEM and the evolution of a more competitive market in the NESI are currently operational.

As the electricity market evolves, the Commission has continued to supervise and steer initiatives towards fulfilling the Conditions Precedent ("CP") described in Part 2 (6.5.3) of the Market Rules for a transition to a more competitive market.

In view of the highlights in Section 3 above, it is safe to posit that the five (5) key CPs for moving the market to the next competitive stage have progressed significantly. Specifically:

- a. The two (2) CPs regarding the degree of privatization and sufficient generation participants have been sufficiently achieved;
- b. The two (2) CPs regarding satisfaction of infrastructure pre-conditions and market settlement software system are in progress and will be sufficiently achieved in 2023;
- c. One (1) CP regarding the creditworthiness of the distribution participants is still in progress. A recent evaluation of DisCos' financial standing confirms that three (3) of the distribution licensees demonstrate sufficient creditworthiness to fully engage in bilateral contracting while the remaining 8 DisCos can have part of their energy offtake (load) contracted bilaterally.

5. Existence of Operating Panels for a Functional Competitive Market

All the Panels/Committees required as CPs for the commencement and operation of TEM and the evolution of a more competitive





market in the NESI are currently operational. Specifically, the under-listed panels are functional:

- a. The 3rd Initial Stakeholder Advisory Panel ("ISAP") in the NESI was inaugurated by the Commission on the 24th May 2021;
- b. The 2nd Dispute Resolution Panel ("ISAP") in NESI was inaugurated by the Commission on the 7th May 2020;
- c. The 3rd Grid Code Review Panel ("GCRP") in NESI was inaugurated by the Commission on the 22nd & 23rd of November 2018.

Conclusion and Recommendation

Conclusion

• On the basis of the highlights in Sections 3 – 5 of this report, it is concluded that the Nigerian electricity market has evolved substantially and the NESI is ripe for transition 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:

Recommendations for the Consideration of Honourable Minister of Power

- Declaration for the creation of an ISO in line with Section 24(2&3) of EPSRA and provide the necessary support to the Commission for timely separation to enhance transparency in grid management in NESI;
- Clear policy on settlement of energy bills by host communities;
- Ensure the accelerated implementation of government intervention on infrastructure programs being run by the FGn including the NMMP, DISREP and Siemens/Presidential Power initiatives geared towards service improvement and enhance market liquidity;
- Engage with the relevant ministers and other stakeholders in prioritising Domestic Gas Supply Obligation to power in order to ensure improvement in availability of gas to power as the sector continues timely payment for gas;
- Prioritisation of development of Integrated Resource Plan ("IRP") for the sector;
- Ministry's compliance with the regulations - especially on their generation projects and adhoc interventions;
- In collaboration with BPE, fast-track the ongoing privatization of NIPPs to ensure improved efficient operation that results in overall improvement in market performance and avoidance of over concentration.

• The Nigerian electricity market has evolved substantially as defined in EPSRA and therefore ripe for transition to a more competitive market.





1. General Background

1.1. Context and Aim of the Report

The Nigerian Electricity Supply Industry (“NESI”) plays a critical role in Nigeria’s economic growth and development as it powers the real sector of the economy and the socioeconomic wellbeing of the nation. The NESI also exports electricity to three (3) neighbouring countries (Benin Republic, Niger and Togo) vide the interconnected transmission networks.

The electricity industry was, until the commencement of the sector reform, operated as a vertically integrated monopoly by a single government-owned utility company responsible for the generation, transmission and distribution of electricity. However, persistent challenges of poor power supply infrastructure, low energy access, poor reliability, and the need for improved efficiency informed the decision of the Federal Government of Nigeria (“FGN”) to embark on power sector reforms commencing with the formation of the power sector reform implementation committee in 1999. The chart in Fig 1.1 represents the chronological timeline and various activities of the power sector reform journey.

Specifically, the Nigerian Electric Power Policy (“NEPP”) developed by FGN through the National Council of Privatisation (“NCP”) in 2001 and subsequently adopted in 2002 kicked off the power sector reform journey. This was subsequently followed by unbundling of the electricity value chain into six (6) generation companies (“GenCos”), one (1) transmission company (“TransCo”) and eleven (11) distribution companies (“DisCos”) in 2003; the enactment of EPSRA in 2004, and the privatisation of the generation and distribution companies in 2013.





The power sector reform objectives include improvement in access and reliability of supply, increased operational efficiency, promotion of good governance, and improved competition and market liquidity. However, the attainment of robust market competition and improved operational efficiency requires constant monitoring and regular assessment of the market development.

This report is prepared pursuant to Section 24(2) of EPSRA which mandates the Commission to review the level of competition/degree of privatisation so far achieved in NESI and offer recommendations to the government on the next steps towards a transition to a more competitive market.

1.2. Legal Authority

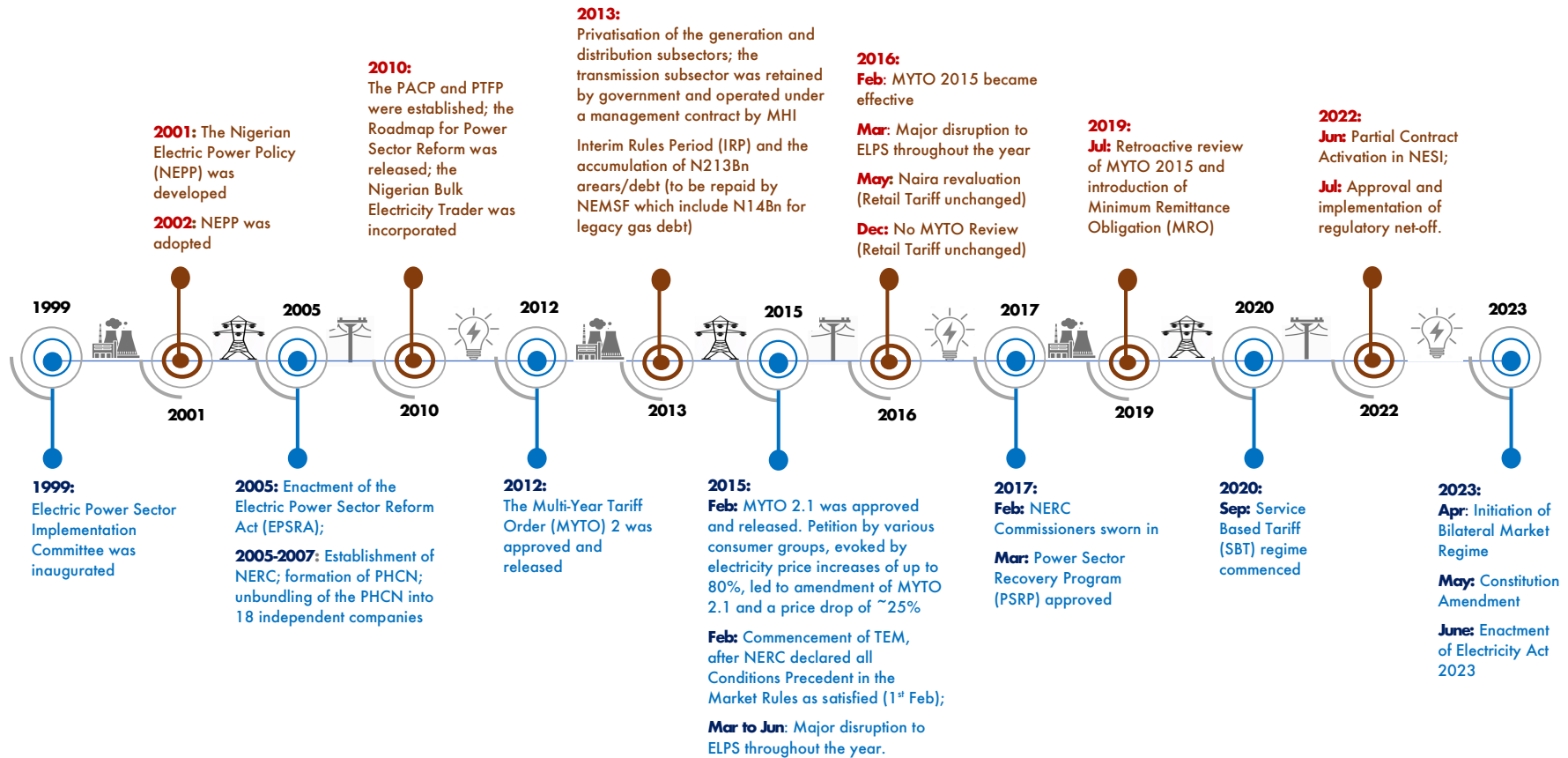
This report is prepared pursuant to Section 24(2) of the Electric Power Sector Reform Act ("ESPRA" or the "Act") which provides that:

"...the Commission shall prepare, each year, a report for the Minister as to the potential for competition in the Nigerian electricity supply industry and these reports shall present the Commission's analysis and recommendations as to whether the Nigerian electricity supply industry has developed to the point where a more competitive market ought to be established under section (26), having regard to:

- a) The degree of privatisation that has occurred;
- b) The existence of a sufficiently large number of potential competitive entities so as to avoid the likelihood of abusive market power; and
- c) The existence of other preconditions, including the necessary metering and information technology infrastructures, required for the operation of a more competitive electricity market.



Figure 1.1: Nigerian Electric Power Sector Reform Journey





1.3. The Commission

The Nigerian Electricity Regulatory Commission (“NERC” or the “Commission”) was established by Section (31) of the EPSRA and was officially inaugurated on the 31st of October 2005. The Commission serves as an independent watchdog and regulatory body to drive the power sector reform by monitoring the operation and development of the market, ensuring fairness, transparency and a level playing field for all market participants.

1.3.1. Principal Objects of the Commission

The principal objects of the Commission outlined under section 32(1) of the EPSRA are listed below:

- a) to create, promote, and preserve efficient industry and market structures, and ensure the optimal utilisation of resources for the provision of electricity services.
- b) to maximise access to electricity services, by promoting and facilitating consumer connections to distribution systems in both rural & urban areas.
- c) to ensure that an adequate supply of electricity is available to consumers.
- d) to ensure that the prices charged by licensees are fair to consumers and are sufficient to allow the licensees to finance their activities and to allow for reasonable earnings for efficient operation.
- e) to ensure the safety, security, reliability, and quality of service in the production and delivery of electricity to consumers.
- f) to ensure that regulation is fair and balanced for licensees, consumers, investors, and other stakeholders and;





- g) to present quarterly reports to the President and National Assembly on its activities.

Furtherance to the objects highlighted above, the Commission is mandated to perform the underlisted functions as provided in Section 32(2) of the EPSRA:

- a) promote competition and private sector participation, when and where feasible;
- b) establish or, as the case may be, approve appropriate operating codes and safety, security, reliability, and quality standards;
- c) establish appropriate consumer rights and obligations regarding the provision and use of electricity services;
- d) license and regulate persons engaged in the generation, transmission, system operation, distribution, and trading of electricity;
- e) approve amendments to the market rules;
- f) monitor the operation of the electricity market; and
- g) undertake such other activities, which are necessary or convenient for the better carrying out of or giving effect to the objects of the Commission.

Lastly, in the discharge of its functions, the Commission ensures compliance with Section 32(3), which states that:

“...the Commission shall consult, from time to time, and to the extent, the Commission considers appropriate, such persons or groups of persons who may or are likely to be affected by the decision or orders of the Commission including, but not limited to its licensees, consumers, potential investors, and other interested parties”.



1.3.2. Regulatory Intervention

- Since its inception, the Commission has continued to position itself and act independently to provide robust regulatory intervention as the sector transitions from a state-owned monopoly to a more competitive market structure. The Commission performs its duties in accordance with the Act, other extant rules and the policy framework of the FGN/Ministry of Power by ensuring that its regulatory interventions, orders, and guidelines are fit-for-purpose and fair to all stakeholders including consumers.





2. The Nigerian Electricity Industry

Pursuant to the enactment of EPSRA, the FGN unbundled the then vertically integrated electricity industry 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 1.1 presents a brief description of the three components of the Nigerian Power System.

Table 1.1: The Three Main Components of the Nigerian Power System

<i>Segments</i>	<i>Description</i>
<i>Generation:</i>	Grid power generation in Nigeria is mainly from gas and hydro. There are currently twenty-eight (28) grid-connected gas and hydroelectric power generating companies (“GenCos”) in Nigeria. The generating companies sell energy to the Nigerian Bulk Electricity Trading Plc (“NBET”) and large businesses (typically highly energy-intensive industries) in the wholesale markets. In addition to the grid-connected plants, many other off-grid generation companies have been licenced by the Commission.
<i>Transmission Network:</i>	Mainly transports electric energy at high-voltage (330kV and 132kV) electricity through cables from power plants to trading points with distribution



Distribution Network:

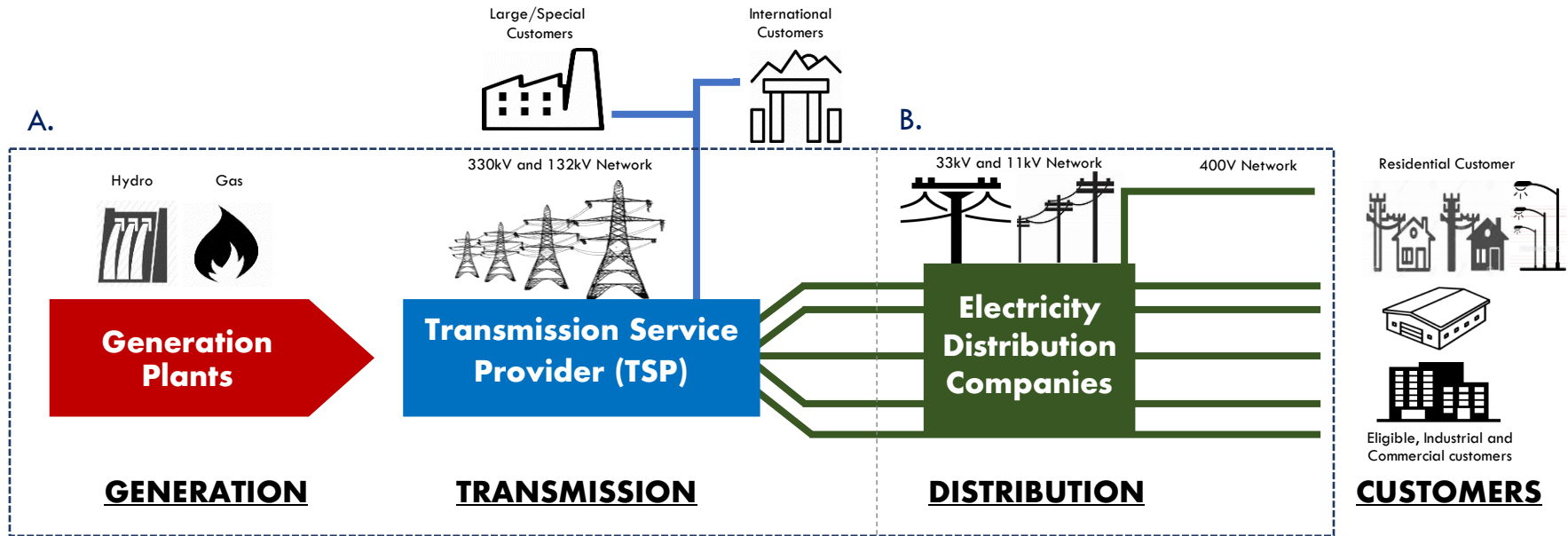
licensees. The transmission network is owned and operated by the Transmission Company of Nigeria Plc ("TCN"), the company currently also holding the independent system operator license.

Mainly low-voltage (33kV, 11kV and 400V) network grid that carries electricity from the high-voltage transmission grid to households, industrial, commercial and streetlights. It also carries electricity from power stations directly connected to the distribution grid (e.g., embedded generators). Currently, there are twelve (12) licensed grid-connected electricity distribution companies ("DisCos") in Nigeria. In addition to the grid-connected distribution network operators, the Commission has licenced seventeen (17) independent distribution network operators ("IEDN") of which eleven (11) are independently operating within an approved franchise area.

- The current operational framework of the Nigerian electricity grid managed by the System Operator ("SO") and Distribution System Operators ("DSO") is represented in Fig. 2.1 while Fig. 2.2 provides the overview of the Nigerian electricity market structure (i.e., offtake, contract and payment) managed by the Market Operator ("MO") and NBET under the regulatory oversight and approval of the Commission.



Figure 2.1: Overview of the Nigerian Electricity Grid

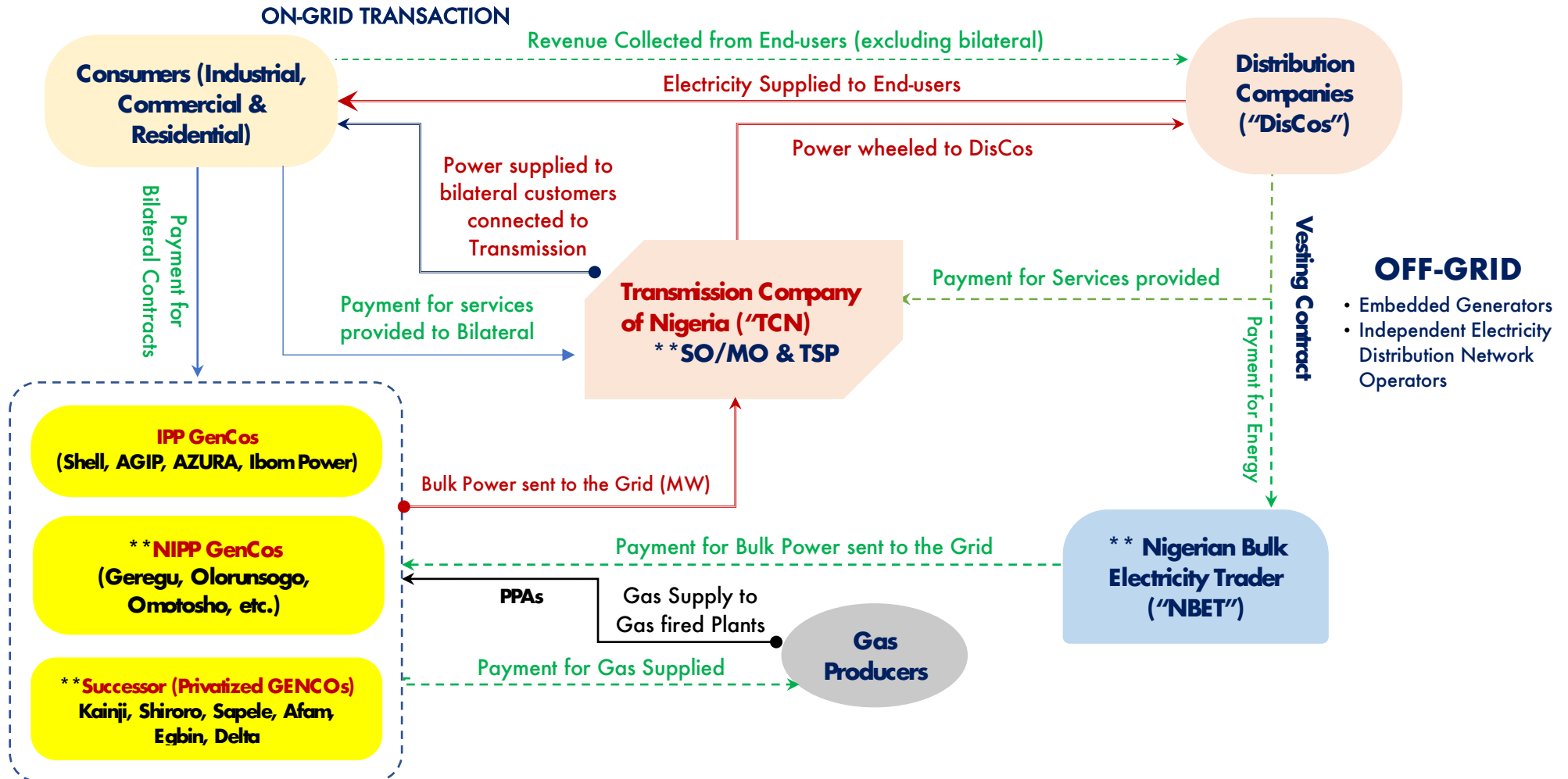


Manager: Parts A and B are managed by System Operator (“SO”) and Distribution System Operators (“DSOs”) respectively both under the regulatory supervision of the Nigerian Electricity Regulatory Commission (“NERC”)





Figure 2.2: Nigerian Electricity Market Structure





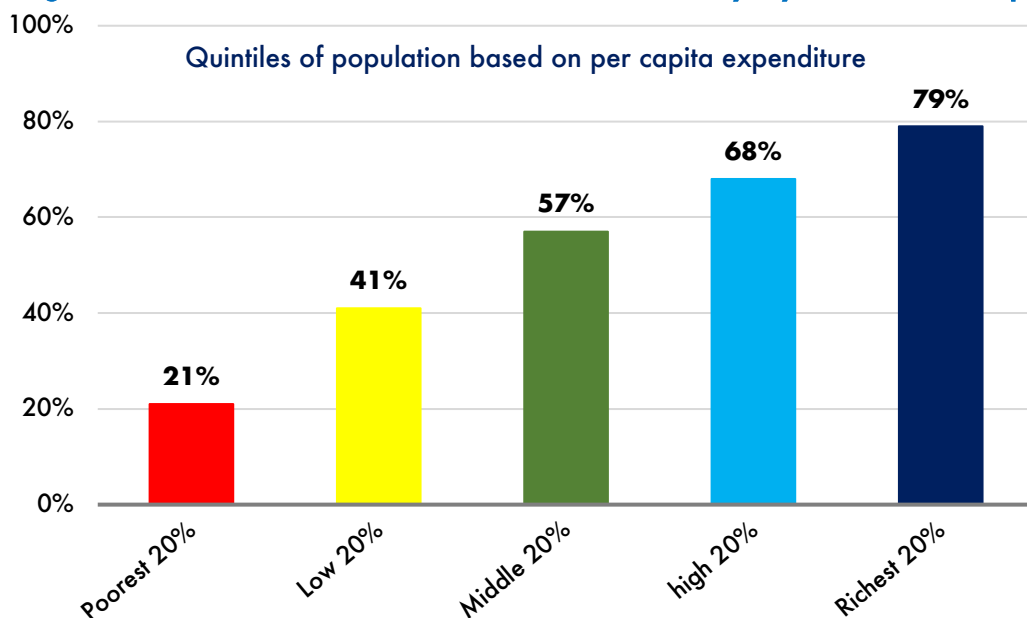
2.3. Selected Facts of the Nigerian Electricity Supply Industry

2.3.1. Households Connection to the Grid

More top-income groups are connected than low-income groups:

- The graph of households' connection represented in Figure 2.3 indicates that 79% of the richest group and 68% of the high-income group are connected as compared to the poorest and low-income groups with 21% and 41% connection rates respectively;
- Thus, the current state of the Nigerian power sector characterised by tariff subsidy mostly benefit the (relatively) rich as more rich people are connected and consume more electricity;
- It was estimated by the World Bank (2021)¹ 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%.

Figure 2.3: Households Connection to Electricity by Income Group



Source: Extracted from the World Bank (2021) PSRP Financing Plan and Model

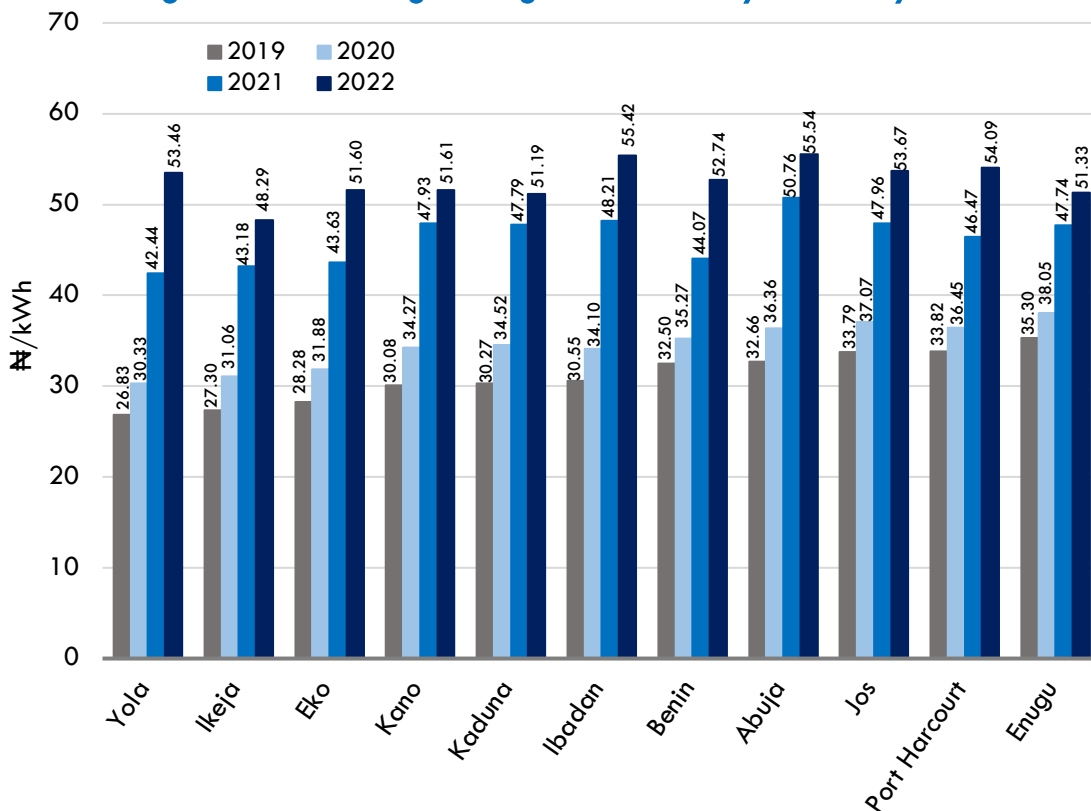
¹ World Bank (2021), The PSRP Financing Plan and Model, World Bank Training to PSRP Secretariat and Stakeholders, Abuja Nigeria

2.3.2. Variation in End-Use Tariffs Charged by DisCos

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

- The sector currently operates 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 different cost structure of the companies and associated operational efficiency;
- Fig 2.4 shows that for the year 2019, the weighted average end-user tariff was the highest under Enugu DisCo. However, the tariff structure in 2022 indicates that customers under Abuja DisCo had the highest weighted average tariff for electricity reflecting changes in the company's cost structure and operational efficiency relative to 2019;

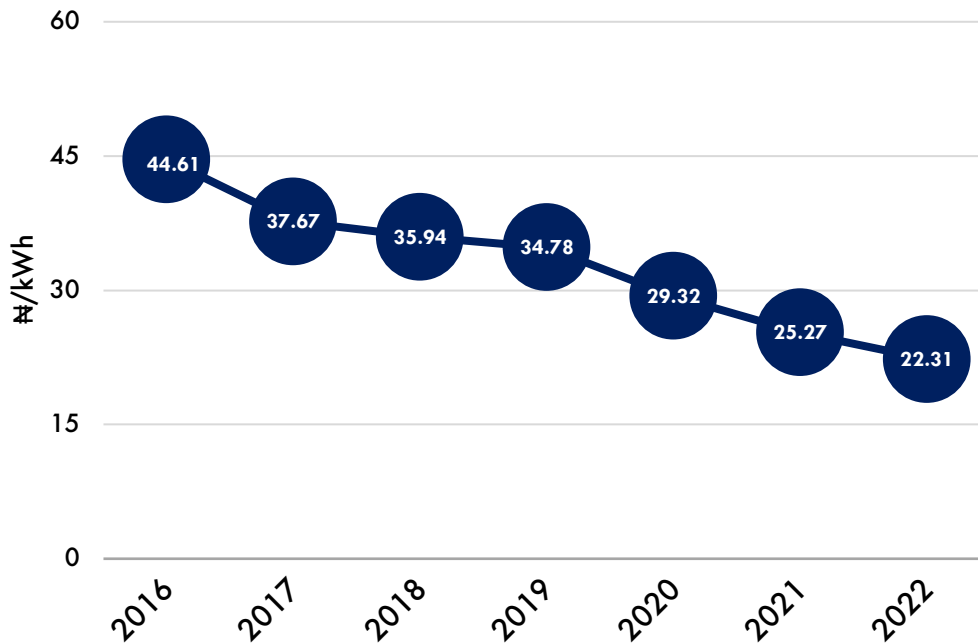
Figure 2.4: Average Weighted Electricity Tariffs by DisCos





- Notwithstanding the relative increase in tariff between 2019-2022, the real price of electricity (adjusted for inflation) represented in Fig. 2.5 continues to decline as electricity delivery increases;

Figure 2.5: Trend of Average Real Retail Price N/kWh in Nigeria



2.3.3. Comparison of End-user Electricity Tariffs in ECOWAS

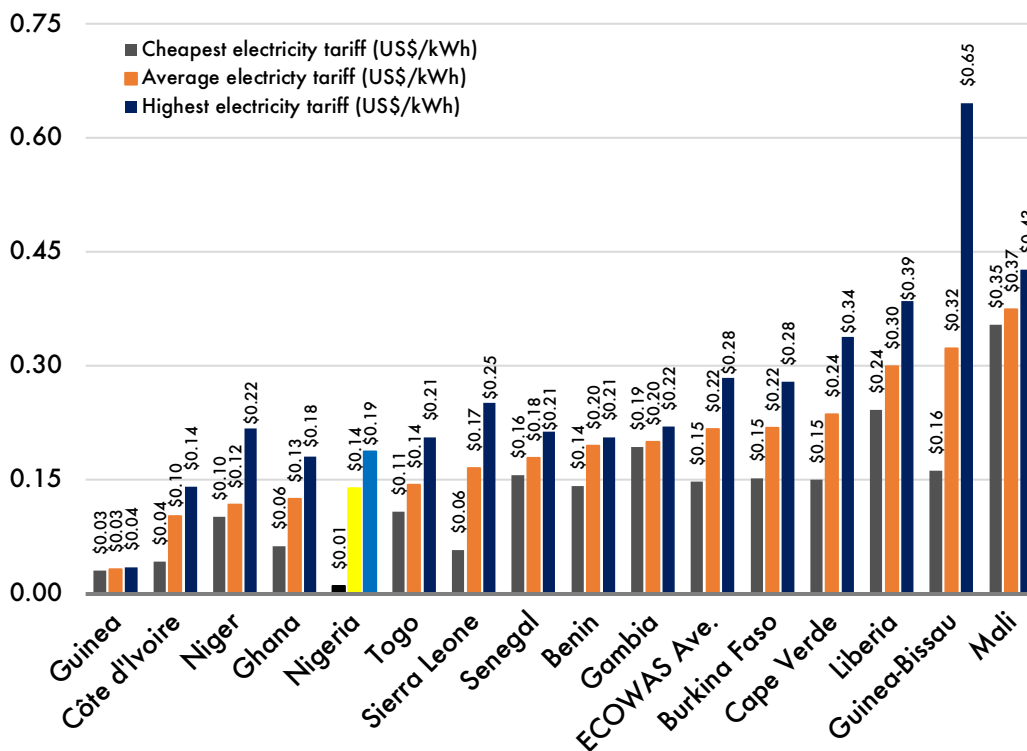
End-user tariff in Nigeria is lower than electricity tariff in most of the ECOWAS countries:

- Available data on electricity tariffs in West Africa represented in Fig. 2.6 shows that the average electricity tariff in Nigeria in 2021 was US\$0.14/kWh and was relatively lower than the average electricity tariff in most ECOWAS countries;²

² Cable.co.uk (2022). The price of electricity per kWh in 230 countries. Available at [Worldwide Electricity Pricing | Energy Cost Per kWh in 230 Countries \(cable.co.uk\)](https://www.cable.co.uk/Worldwide-Electricity-Pricing-Energy-Cost-Per-kWh-in-230-Countries)



Figure 2.6: ECOWAS Average Electricity Tariff in 2021



- 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 price to the power sector in Nigeria;

2.3.5. Components of Electricity Tariff/Bill in Nigerian

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

- The components of the end-use electricity tariff in Nigeria presented in Table 2.1 indicate that during July - December 2022 MYTO tariff regime, generation costs accounted for about 49.02% of the average end-user electricity tariff. This is followed by distribution costs which accounted for 24.24% of the average end-user electricity tariff;



Table 2.1: Main Components of End-use Tariff in 2022

S/N	Components	Definition	Nominal ₦/kWh	Real ₦/kWh	Share
1.	Generation Cost	The weighted average cost of supplying per kWh of electricity to the grid	27.64	10.43	49.02%
2.	Transmission Cost	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	5.24	1.98	9.30%
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-station to the consumer	13.66	5.16	24.24%
4.	Admins & Regulatory Charges	The unit cost per kWh of administrating the networks, coordinating invoices and settlement, enforcing market rules, and regulating all licensees	0.85	0.32	1.50%
5.	NEMSF Repayment	The unit cost per kWh of repayment of loans used to finance past tariff subsidy	1.32	0.50	2.35%
6.	Efficiency Losses	Allowable average technical, commercial and collection losses	9.97	3.76	17.68%
	End-use Tariff	The total cost of supplying a kWh of electricity to end-use customers	58.68	22.15	
	Tariff Shortfall (subsidy)	Subsidy cost per kWh of electricity supplied to end-use customers	6.24	2.35	
	Allowed Tariff	The total cost of supplying a kWh of electricity to the end-user minus tariff subsidy	52.44	19.80	
7.	Value Added Tax ("VAT")	The 7.5% rate of VAT that applies to the domestic end-user of electricity	3.93	1.48	6.98%
8.	End-use Tariff + VAT	The total cost of supplying a kWh of electricity to the end-user after VAT and subsidy	56.38	21.28	100.00%

Source: Computed based on MYTO 2022; the real price is adjusted for inflation with a baseline of 2015.

- In view of the highlight of section 2.3.5, it is safe to conclude that reducing generation costs through least-cost dispatch and contract activation (thus bringing certainty in generation) and aggressive loss reduction may be an effective way to end tariff subsidies without a major increase in tariff.





In this section, it is established that:

- a. End user tariff subsidy in Nigeria is pro-rich as top-income group consume more electricity than low-income group, thereby benefiting more from subsidy than the lower income earners;
 - b. The end-user tariffs vary by each DisCo and depicted a general increase between 2019-2022.
 - c. The real end-user price of electricity (adjusted for inflation) continues to decline in Nigeria;
 - d. End-use tariff in Nigeria is lower than end-use tariff in eleven (11) of the sixteen (16) ECOWAS countries partly due to the tariff subsidy provided by the FGN and the relatively cheaper gas price in Nigeria.; and
 - e. Generation costs constitute the major components of end-user tariffs/bills in Nigeria – about 49% of end-use tariff in 2022.
- **Section two (2)**, therefore, concludes that the ongoing phased contract activation and novation overseen by the Commission which, among other objectives, designed to guarantee payments to suppliers for stability and growth of generation in NESI has been effective. The initiative shall incite further competition and participation in the generation segment and ultimately reduce generation costs which constitute the largest component of electricity tariffs. A reduction of generation costs may also be an effective way to end tariff subsidies without a significant increase in tariffs.
 - *In light of the above, **section three (3)** present an analysis of the level of competition in the Nigerian electricity supply industry in relation to the provisions of Section 24(2) of the ESPRA and part 2 of the Market Rule.*



3. Competition in the Nigerian Electricity Market

The power sector reform sets to transform the Nigerian Electricity Supply Industry (“NESI”) from a state-owned vertically integrated monopoly to a competitive electricity market. The privatisation process leading to handing over of successor generation and distribution segments of the value chain to the private investors in 2013 kicked started a new ownership and management structure in the country’s electricity market.

Since privatization, NESI has witnessed the introduction of many regulations, orders and other regulatory instruments with far-reaching impact on improving competition in the electricity market and improved consumer protection. Despite the current challenges facing the industry, there have been numerous positive outcomes that reaffirm the opportunities and potentials for many competitive entities. This section presents an analysis of the current stage of the 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

- Section 24(2) of EPSRA provides the underlisted criteria for assessing the level of competition in NESI and for determination of whether or not a declaration for a more competitive market is required.
 - a. The degree of privatization that has occurred;
 - b. The existence of a sufficiently large number of potential competitive entities, to avoid the likelihood of abusive market power; and
 - c. The existence of other preconditions, including the necessary (grid/trading) metering and information technology infrastructures required for the operation of a more competitive electricity market.
- Thus, this section presents an analysis of competition in the NESI with due consideration for the provisions of section 24(2) of EPSRA. The section





further reviews the state of the industry relative to the envisaged market development stages provided in the Market Rules, and whether the CPs for a transition to a more competitive market have been met.

3.2. The Degree of Privatisation Across the Value Chain

Since the commencement of the power sector reform in Nigeria, substantial privatisation has occurred with respect to generation and distribution sub-sector while transmission remains with the Federal Government. Table 3.1 presents a summary of the current grid-connected market participants, with a focus on generation and distribution operators.

3.2.1. Generation Segment:

- A total of twenty-eight (28) private and government-owned plants were operational and on-grid as at December 2022. This does not include several embedded generators licensed by the Commission and currently operating in NESI.
- Only eight (8) of the grid-connected generation plants owned by the Niger Delta Power Holding Companies (“NDPHC”) Limited are yet to be privatized. 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.

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 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.





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	Transnational Corporation of Nig. Plc
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.	Omosho I	Privatised	Omosho 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.	Omosho 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 – FIPL
25.	Paras Energy IOC	Private	Paras Energy Dev & Resource Ltd
26.	River 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
	Distribution Companies ("DisCos")	Status	Ownership*
31.	Abuja Electricity Distribution Plc	Privatised	Receiver Manager – UBA
32.	Benin Electricity Distribution Plc	Privatised	Receiver Manager – Fidelity
33.	Eko Electricity Distribution Plc	Privatised	West Power and Gas Ltd
34.	Enugu Electricity Distribution Plc	Privatised	Inter-State Electric Ltd
35.	Ibadan Electricity Distribution Plc	Privatised	Receiver Manager – AMCON
36.	Ikeja Electric Plc	Privatised	Sahara Power Group
37.	Jos Electricity Distribution Plc	Privatised	Aura Energy Ltd
38.	Kaduna Electricity Distribution Plc	Privatised	Receiver Manager – Fidelity/AFREXIM
39.	Kano Electricity Distribution Plc	Privatised	Receiver Manager – Fidelity
40.	Port Harcourt Electricity Distribution Plc	Privatised	4Power Consortium Ltd
41.	Yola Electricity Distribution Plc	Privatised	Quest Electricity Nigeria Ltd
42.	APLE Electricity Distribution Plc	Private-DisCo	Aba Power Ltd Electric
	Transmission Company ("TransCo")	Status	Ownership
43.	TSP and SO/MO	Govt - TCN	Federal Government of Nigeria

Notes of the Table:

*Indicating ownership of 60% majority stake





- Pursuant to Sections 32(2)(d), 65 & 66 of the EPSRA, the Commission issued two (2) licences to TCN in 2013 for the purpose of carrying out Transmission Service Providers (TSP) and System Operation (SO) functions.
- However, in line with Sections 25(d) & 26(1) (i-ii), the issuance of the SO license to TCN is envisaged to be temporary pending the establishment of an independent system operator (“ISO”) upon a declaration by the Minister of Power (“MoP”) that a more competitive market be established or initiated in line with Section 24 (2&3).
- The existence of potentially competitive entities and increased participation of market players, and the myriad of activities across the value chain in the NESI have led to calls for the unbundling of TCN into its functional lines of SO/MO and TSP. This is further supported by the imperative for more transparent management of the grid.

3.2.3. Distribution Segment:

- Pursuant to the electricity reform agenda of the FGN, the eleven 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;
- Aba Power Limited Electric (“APLE”) has been excised out of EEDC and licenced by the Commission with responsibility of distribution of electricity to commercial and residential consumers within a ring-fenced network in Abia state;
- In addition, several Independent (private) Electricity Distribution Networks (“IEDN”) operators have been licenced by the Commission and currently distribute power from their respective embedded generation plants.



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:

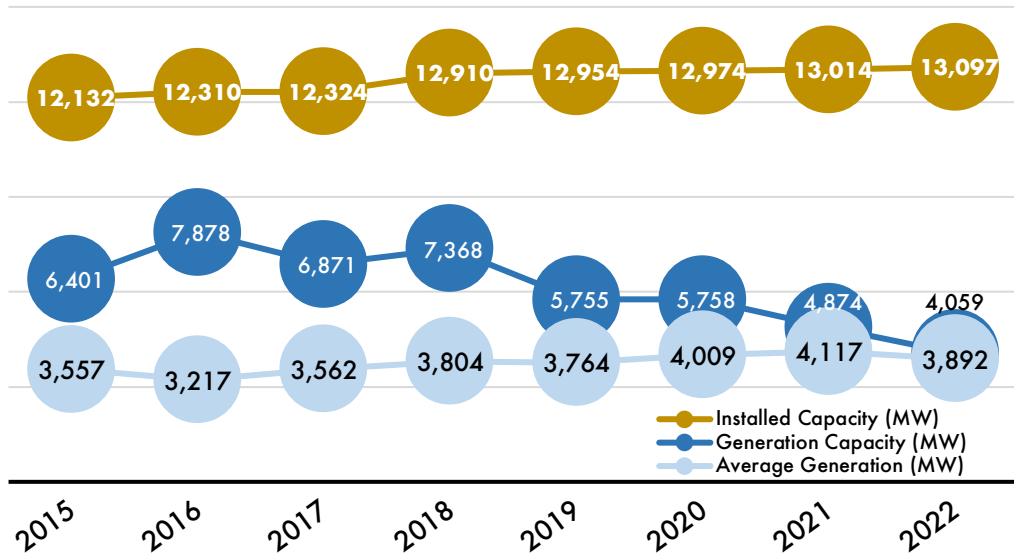
- Energy and capacity may be contracted through vesting, bilateral, cross border relationships while eligible customers may procure electricity directly from GenCos and trading licensees thus significantly improving the level of competition in the industry;
- As represented in Figure 3.1, the installed 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 2022, 28 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 and supported by the proposed exit of NBET from the market, have somewhat improved the level of competition in that segment of the value chain;
- The installed capacity in NESI grew by 7.95% from 12,132MW as at December 2015 to 13,097MW as at December 2022. During the same period, however, the average available capacity decreased by 2,324MW from 6,401MW recorded in 2015 to 4,059MW in 2022 due to:
 - Deteriorating plants/units' capacities;
 - Poor maintenance due to liquidity challenge and access to FOREX;
 - Non-binding contracts and delay payment; and
 - Introduction of stringent regulatory measure against wrong declaration.
- It is also noteworthy to mention that during the period Gbarain NIPP was out of operation till date. The non-availability of this plant may have also overstated the reduction in available capacity linked to the old plants.





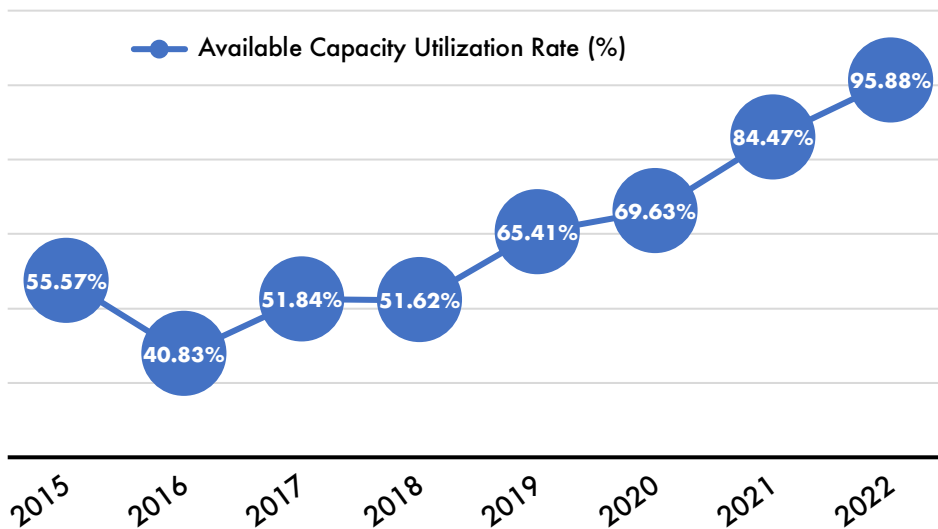
- While the Commission continues to provide direction and regulatory guidance to address the challenges in NESI, the daily average generation has continued to grow. The daily average generation of 3,892MWh/h recorded in 2022 was 9.42% more than the daily average generation of 3,557MWh/h recorded in 2015.

Figure 3.1: Generation Capacity and Average Generation in NESI



- The capacity utilization rate represented in Fig 3.2 has been on the increase and rose by 40.31 percentage points from 55.57% recorded in 2015;

Figure 3.2: GenCo Available Capacity Utilization Rate (%)





- Notwithstanding the progress in power generation, the industry constraints relating to inadequate gas supply, transmission constraints, limited distribution network and commercial viability of DisCos' operation still pose major technical and operational challenges to the industry;
- The current generation capacity is lower than what is required to meet the estimated load demand of 17,556MWh/h in 2020. The demand is expected to grow to 45,662MW by 2030.³ It is noteworthy however that the reported power generation statistics do not include the off-grid and captive generation capacity.
- Thus, to further increase the available power generation and the capacity utilisation, the Commission had, in 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 further allocates risks among the industry operators under the PPA and service level agreements signed between market participants. The initiative is expected to provide a leverage for the incremental growth in power availability and capacity utilisation;
- As presented in Table 3.2, additional capacity in nine (9) PPAs were partially activated in 2022 and supported with a securitised gas payment. Thus, the number of active on-grid contracts in NESI increased from six (6) to fifteen (15).

³ World Bank, 2019: Electric Power Consumption (kWh per capita). Retrieved from: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=NG>





Table 3.2: Power Trading Arrangement and PPA Activation in NESI as at the end of 2022

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	Securitized gas payment-backed PPA
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	Securitized gas payment-backed PPA
7	Sapele Gt NIPP	Gas Thermal	NIPP	Active	NBET	Best Endeavor	-
8	Trans Amadi IPP	Gas Thermal	Legacy IPP	Active	NBET	Best Endeavor	Securitized gas payment-backed PPA
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	Securitized gas payment-backed PPA
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	Securitized gas payment-backed PPA
16	Gbarain NIPP	Gas-Thermal	NIPP	Inactive	-	-	-
17	Geregu	Gas-Thermal	Privatised Successor	Active	NBET	Best Endeavor	Securitized gas payment-backed PPA
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	Securitized gas payment-backed PPA
24	Shiroro	Hydro	Privatised Successor	Active	NBET	Best Endeavor	-
25	Kainji	Hydro	Privatised Successor	Active	NBET/Bilateral	Best Endeavor/Bilateral Active Contract	Securitized gas payment-backed PPA
26	Egbin ST (GAS)	Steam	Privatised Successor	Active	NBET/Bilateral	Best Endeavor/Bilateral Active Contract	Securitized gas payment-backed PPA
27	Sapele ST	Steam	Privatised Successor	Active	NBET	Best Endeavor	-
28	TAOPEX	Gas-Thermal	New-IPP	Active	Bilateral	Bilateral Active Contract	-

* The newly partially activated contracts were effective from July 2022





- Further to the privatisation of eleven (11) successor DisCos in 2013, the number of grid-connected DisCos operating in the country has increased to twelve (12). The Commission has also licenced seventeen (17) independent electricity distribution network (IEDN) operators of which eleven (11) are operational. Table 3.3 presents the details of the IEDNs that were operational as of December 2022;

Table 3.3: Operational IEDN in NESI as at Dec. 2022

S/N	Licence ID	IEDN	Location	Status
1.	NERC/LC/056	Gateway Electricity Limited	Lagos	Active
2.	NERC/LC/074	Energy Company of Nigeria Plc	Lagos	Active
3.	NERC/LC/145	PIPP LVI Disco Limited	Lagos	Active
4.	NERC/LC/146	Bodituv Nigeria Limited	Abuja	Active
5.	NERC/LC/156	Uruga Power Distribution Company Limited	Lagos	Active
6.	NERC/LC/174	Ariaria Independent Energy Distribution Network Ltd	Lagos	Active
7.	NERC/LC/179	Ladol Integrated Logistics Free Zone Enterprise	Lagos	Active
8.	NERC/LC/192	Babcock Consulting Limited	Ogun	Active
9.	NERC/LC/200	Constant Independent Electric Power Distribution Company Ltd	Ogun	Active
10.	NERC/LC/203	Alausa Distribution Limited	Lagos	Active
11.	NERC/LC/216	Notore Industrial City Limited	Rivers	Active

- The introduction of the Eligible Customer Regulations and guidelines on distribution franchising created open access to both the transmission and distribution networks thereby increasing bilateral contracting opportunities, prospect for competition in the retail market and several opportunities for participation in NESI;
- To ensure improvement in energy off-take by DisCos, the Commission has provided in the MYTO Order, effective January 1 2020, a provision for a “take or pay” obligation on the capacity equivalent of MYTO load allocation for each DisCo in accordance with the terms of the vesting contract executed with NBET. This implies a slight modification to the retrospective minor tariff review approach such that the retroactive tariff review maintained the MYTO allocation share of capacity instead of the capacity equivalent of actual energy offtake by the specific DisCo;





- 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”) of the level of market concentration in the NESI is estimated to be low indicating increasing competition with more firms being able to compete in the market. Specifically:

- The HHI scores using both the installed capacity (limited to 80% capacity factor), available capacity and actual generation in determining the market shares of capacity and generation are reported in Table 3.4. The results indicate HHI scores that are less than 1,500 (i.e., low concentration), indicating that following the privatization and the entry of more potentially competitive entities, the Nigerian electricity market has become relatively competitive.
- The yet-to-be-privatised NDPHC’s power plants constituted the single largest percentage of the market share of the installed capacity while Mainstream energy solution limited (“MESL”) constituted the single largest percentage of the market share of available and actual generation. It is noteworthy, however, that the largest share controlled by MESL is due to the capacities of the two hydro plants (Jebba & Kainji) concessioned to MESL in 2013;
- To further reduce the level of concentration of the Nigerian electricity industry, the Commission is working with FGN/HMoP/BPE on the ongoing process for the privatisation of the eight (8) NDPHC power plants. This will further increase the number of private ownerships in the power sector, improve efficiency and competition;





Table 3.4: The Level of Market Concentration in the NESI as at 2022

No of Plants	Plants	Ownership	HHI – 80% 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	581	5.54	30.73	46	1.13	1.27	49	1.25	1.56
1	Geregu	Amperion Power Distribution Ltd	348	3.32	11.03	171	4.21	17.74	181	4.64	21.57
1	Azura-Edo IPP	Azura Power West Africa Ltd	369	3.52	12.39	429	10.57	111.64	388	9.98	99.60
8	NDPHC NIPPs	Federal, States & LGAs	3190	30.45	927.19	588	14.49	209.89	588	15.11	228.32
1	Ibom Power IPP	Ibom Power Ltd	152	1.45	2.10	35	0.85	0.73	35	0.89	0.79
1	Dadin-Kowa	Mabon Energy Ltd	31	0.30	0.09	26	0.65	0.42	26	0.68	0.46
2	Kanji & Jebba	Mainstream Energy Sol. Ltd	1064	10.15	103.12	664	16.35	267.28	676	17.38	301.91
1	Okpai IPP	Nigeria AGIP Ltd	384	3.66	13.43	250	6.17	38.01	228	5.87	34.45
1	Shiroro	North-South Power Company Ltd	480	4.58	20.99	347	8.56	73.25	347	8.93	79.68
2	Omotosho & Olorunsogo	Pacific Energy Group	536	5.12	26.17	373	9.18	84.25	206	5.29	27.98
1	Paras Energy IOC	Paras Energy Dev & Res Ltd	54	0.52	0.27	53	1.29	1.68	53	1.35	1.82
4	Egbin, Trans-Amadi IPP Omoku IPP & Rivers IPP	Sahara Power Group - FIPL	1400	13.36	178.54	594	14.62	213.87	609	15.66	245.15
1	Sapele	Sapele Power Plc	576	5.50	30.22	33	0.80	0.65	33	0.84	0.70
1	Afam VI IOC	Shell Nigeria Ltd	520	4.96	24.63	96	2.37	5.64	94	2.43	5.89
1	TAOPEX Gas IPP	TAOPEX Energy Services Ltd	72	0.69	0.47	0	0.01	0.00	0	0.01	0.00
1	Delta (Ughelli)	Transcorp Power Ltd	720	6.87	47.22	355	8.75	76.53	378	1.25	1.56
28			10,478	100	1,429	4,059	100	1,103	3,892	100	1,144
					HHI = 1,429			HHI = 1,103			HHI = 1,144

- HHI denotes the Herfindahl-Hirschman Index calculated as $HHI = s_1^2 + s_2^2 + s_3^2 + \dots + s_n^2$ 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;
- The general rule of thumb is that an HHI <100, between 100 and 1,500; between 1,500 and 2,500 and >2,500 indicates a highly competitive industry, an unconcentrated industry, moderate market concentration and high market concentration respectively.





- Pursuant to Section 82(5) of the Act, the Commission continues to ensure that any proposed merger and acquisition of the public utilities is well scrutinised to avoid market overconcentration and abuse of market power;

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

- Unlike generation, the grid-connected DisCos are currently a regional monopoly operating in distinct franchise areas. The structure of the public utilities, as in other network industries, provide monopoly power in their respective franchise market.
- It is envisaged that as the market evolves, the fourth segment of the value chain with many suppliers responsible for energy retailing to customers shall be introduced in the future. This is envisaged to provide customers with the opportunity of switching suppliers thereby creating competition at retail end and enhancing value for money for customers. It is noteworthy however that the market is not yet ripe for the unbundling of the DisCo business model until the infrastructure and commercial sustainability improves significantly to deliver contracted energy and capacity.
- Notwithstanding the natural monopoly nature of the distribution operation, the introduction of the IEDN regulations and eligible customer transactions have raised the consciousness of DisCos on the need to improve their operations for better services.

3.4. 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 stage 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 metered on 33kV and 11kV feeders;
- As presented in Table 3.5, 94% of 11kV feeders and 96% of 33kV DisCo feeders have been metered as at December 2022 while 26% of the metered 11kV feeders and 48% of the metered 33kV feeders have functional APIs that are fully integrated and currently providing real or near real-time information to both the utilities and the Commission;

Table 3.5: 11kV & 33kV Metering Status in the NESI as at Dec. 2022

DisCo	No. of 11kV Feeders	No. of 11kV Feeders Metered	Metering Rate	No. of 33kV Feeders	No. of 33kV Feeders Metered	Metering Rate
Abuja	334	263	79%	92	92	100%
Benin	229	229	100%	72	55	76%
Eko	319	319	100%	92	92	100%
Enugu	192	192	100%	75	75	100%
Ibadan	259	259	100%	121	121	100%
Ikeja	296	296	100%	88	88	100%
Jos	145	143	99%	45	45	100%
Kaduna	117	117	100%	64	64	100%
Kano	122	122	100%	66	65	98%
Port-Harcourt	134	134	100%	73	73	100%
Yola	79	18	23%	46	29	63%
All Discos	2,226	2,092	94%	834	799	96%

Source: Computed based on statutory data sourced from DisCos

- Although the deployment of the Supervisory Control & Data Acquisition (“SCADA”) system for full coverage of the transmission system is not yet completed, TCN has deployed IoT/SMART meters at GenCo-TCN interfaces for real-time reading of generation output;





- This development has to some extent addressed the visibility challenges related to low SCADA deployment (just 20% coverage at the time) highlighted in the 2019 Grid Operations Annual Technical Report on the inability of NCC to effectively carry out the grid operations;
- Notwithstanding the progress made, there is an ongoing process for the procurement and deployment of SCADA systems for end-to-end visibility and control;
- The proposed separation of SO from TSP/TCN will 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:

Metering and IT infrastructure development have made substantial progress in the distribution segment of the NESI value chain.

- With the progress in the metering of 11kV feeders reported in Table 3.5 above, DisCos have continued the metering of distribution transformers for energy accounting. As at December 2022, Ikeja DisCo has fully metered the company's distribution transformers while other DisCos, especially Eko and Abuja, have made substantial progress in DT metering.
- The data in Table 3.6, indicates that most of the DisCos have, as at December 2022, metered more than 82% of their Maximum Demand ("MD") customers. The exceptions are Yola, Eko and Jos DisCo, which have only metered 64.51%, 60.65% and 31.84% of their MD Customers respectively. In total, 76.67% of the MD customers in NESI have been metered, as at December 2022.



Table 3.6: MD Customers Metering Status as at December 2022

DisCos	Registered MD Customers as at Dec. 2022	Metered MD Customers as at Dec. 2022	Metering Rate as at Dec 2022
Abuja	5,955	5,932	99.61%
APLE	794	730	91.94%
Benin	5,792	4,872	84.12%
Eko	12,217	7,410	60.65%
Enugu	9,978	8,858	88.78%
Ibadan	13,061	9,496	72.70%
Ikeja	5,384	5,247	97.46%
Jos	3,216	1,024	31.84%
Kaduna	2,692	2,556	94.95%
Kano	2,289	2,289	100.00%
Port Harcourt	3,486	2,889	82.87%
Yola	12,926	8,338	64.51%
All DisCos	77,790	59,641	76.67%

Source: Computed based on statutory data sourced from DisCos

The data presented in Table 3.7 indicates that about 2,558,617 additional end-use non-MD meters had been installed, post-privatisation in 2013 to December 2022, including the replacement of faulty meters. The majority of the meters were deployed under the 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.

- The ratio of metered customers to registered customers population in the last column of Table 3.7 and represented in Fig. 3.3 indicates an average end-use customers’ metering status of 42.25%. Only Ikeja, Eko, Abuja and Benin DisCos had metered more than 50% of their registered customers as at 31st December 2022;





Table 3.7: Summary of Non-MD Customer Metering Status Since Privatization

DisCos	Meters Inherited During Privatization (2013)	DisCos/BPE pledge on Metering per Annum	Break Down of the Total Metered Installed by Different Programmes/Interventions					Total Meters Installed Since Privatization	Total Metered Customer as at 31 Dec. 2022	Total Meters Replacement Since privatization	Total Registered Customer as at 31 Dec. 2022	Customer Metering Status (%) as at 31 Dec 2022
			Disco Finance (2013 – 2022)	CAPMI (2013 – 2016)	MAP as at 31 Dec 2022	NMMP as at 31 Dec 2022	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	239,296	100,475	1,257	393,309	757,458	28,339	1,575,421	58.67%
Benin	422,308	264,000	11,987	101,640	13,750	38,987	0	166,364	607,902	-19,230	1,626,697	51.22%
Eko	189,542	204,000	9,494	61,527	74,306	77,842	0	223,169	391,398	21,313	611,941	56.79%
Enugu	218,718	48,000	973	1,396	134,741	91,512	0	228,622	537,408	-90,068	1,660,084	38.62%
Ibadan	413,170	217,611	36,000	150,766	166,155	117,372	0	470,293	905,824	-22,361	2,051,727	40.80%
Ikeja	391,724	120,000	60,305	-	343,026	111,703	0	515,034	763,680	143,078	1,298,323	58.82%
Jos	165,046	100,000	13,068	63	6,967	94,641	0	114,739	226,611	53,174	671,180	32.13%
Kaduna	175,275	187,200	32,553	17,016	12,358	47,516	0	109,443	197,442	87,276	780,793	23.37%
Kano	146,329	100,000	2,182	-	4,301	83,480	0	89,963	205,280	31,012	766,590	24.17%
PH	199,501	252,000	40,868	24,888	87,693	82,720	0	236,169	445,174	-9,504	1,288,197	37.75%
Yola	61,599	51,600	1,360	3,725	0	36,427	0	41,512	96,694	6,417	453,732	19.49%
Total	2,775,700	1,694,411	211,296	410,796	1,082,593	882,675	1,257	2,588,617	5,134,871	229,446	12,784,685	42.25%

Source: Nigerian Electricity Regulatory Commission and Electricity Distribution Companies

Notes of the table:

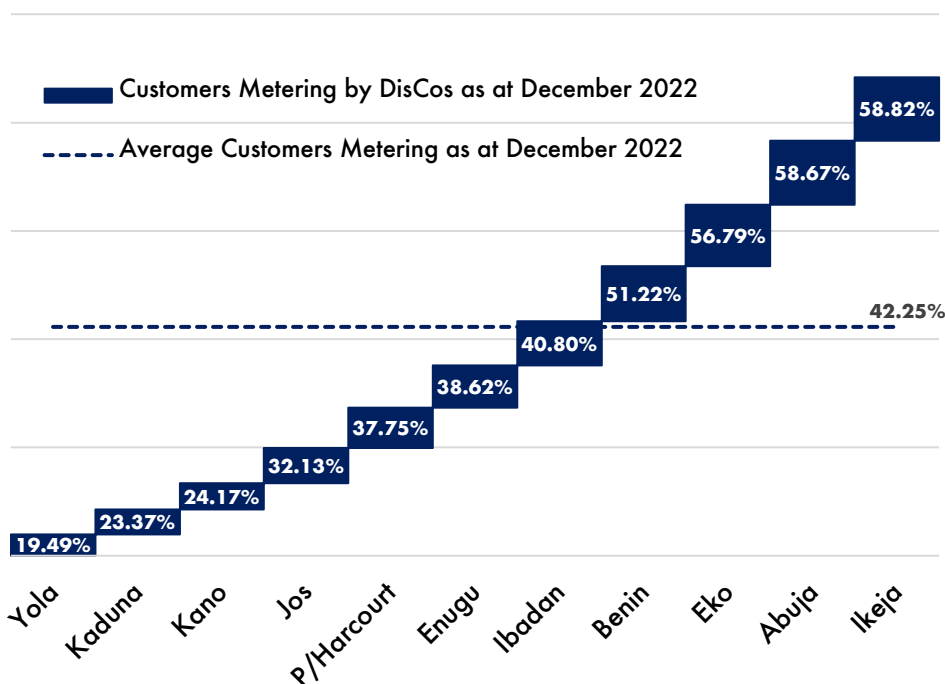
1. DisCos are Electricity Distribution Companies
2. Total represents the eleven (11) electricity distribution companies altogether
3. BPE, CAPMI, MAP and NMMP denote Bureau of Public Enterprise; CAPMI is Credited Advanced Payment for Metering Implementation, Meter Assets Provider, and National Mass Metering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





- Metering of customers remains a priority for NESI especially given its impacts on improving customers’ satisfaction, energy accounting, revenue assurance and overall improvement in the financial viability of NESI.

Figure 3.3: Customers Metering Status (%) by DisCos



- With 57.25% of the end-use customers on estimated billing, 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 has revised the MAP Regulations (2018) into the MAP and NMMP Regulations (2021) which provides a framework that allows for a smooth and concurrent implementation of both MAP and NMMP schemes in order to fast track meters deployments.
- Following the completion of Phase 0 of the NMMP (scope is the rollout of about one million meters), the Commission has commenced engagement with relevant stakeholders to kick off Phase 1 of the NMMP. Phase 1 is





designed to provide FGN-CBN financing to DisCos to procure 4 million meters from Local Meter Manufacturers and Assemblers.

- The Commission, in pursuit of mitigating the risk of financing outside the electricity market, made provision for the establishment of a Meter Acquisition Fund in the December 2022 Tariff Order to support the deployment of end-user' meters. The fund, which is to be administered centrally by a Fund Manager approved by the Commission, shall be used as securitisation for long-term financing for meter deployments to fast-track the closure of the end-users metering gap in the NESI.

3.5. The Market Design

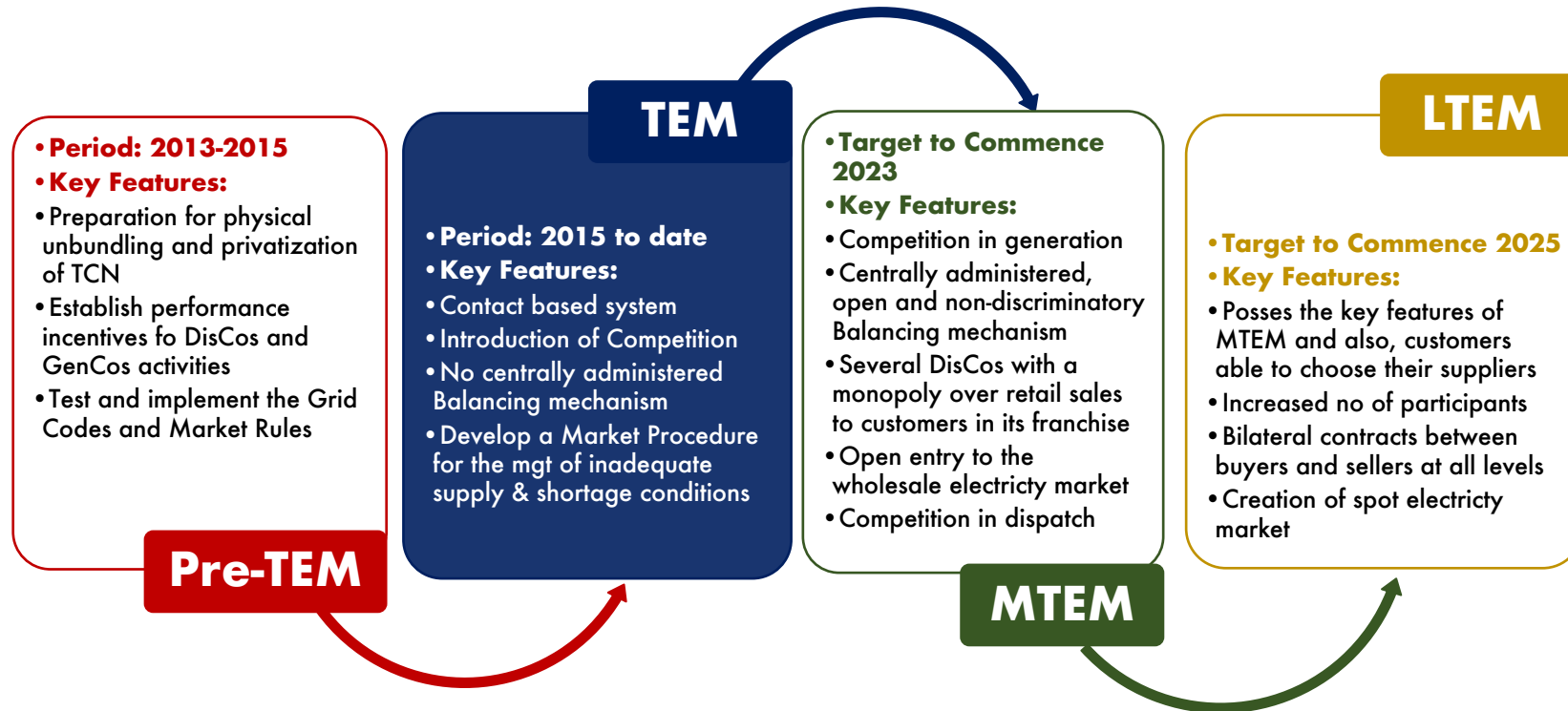
In pursuit of an orderly market development, the Market Rules provide for market transformation to evolve through four (4) developmental stages highlighted in Fig. 3.4 namely:

- i. 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");
- ii. 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;
- iii. 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
- iv. 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 3.4: 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 will 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 stakeholders⁴ 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 effective contracts or that are yet to fulfil the requirements for participation in TEM. TEMSO provides a framework that addresses amongst others:

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





- 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 3.8: Status of Conditions Precedent for the Operation of MTEM in NESI

S/N	Condition Precedents for entry into MTEM	Current Status
1.	Attainment of a sufficient degree of privatisation of Participants	<ul style="list-style-type: none"> The eleven (11) DisCos have been privatised and additional DisCo has been licenced. More than 58% of the Government owned GenCos have been privatised and the process to privatise the remaining currently under NDPHC is ongoing. <p>Thus, this CP is substantially achieved</p>
2.	Presence on 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;	<ul style="list-style-type: none"> The number of licensed generation participants has increased significantly. There are currently 28 grid-connected plants operating in NESI; The number of GenCos ensures that there is no abuse of market power. Furthermore, all transactions including mergers and acquisitions are subject to the Commission’s approval. This provides a safeguard against potential abuse of market power; The market operator has indicated readiness for effective management of the balancing mechanism; The activation and novation of contracts being overseen by the Commission will unlock more capacities and attract new investment <p>Thus, this CP is substantially achieved</p>
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;	<ul style="list-style-type: none"> The creditworthiness of some of the distribution participants currently in the Wholesale Electricity Market has improved based on the series of performance mechanisms introduced by the Commission. The recent review indicates that at least three of the DisCos are creditworthy to contract directly with GenCos. Thus, the need to make a declaration for the three DisCos to transition to direct contracting instead of being slowed down by other DisCos; Thus, this CP is in progress





Table 3.8 Cont'd: Conditions Precedent for the Operation of Medium-Term Market in NESI

S/N	Condition Precedents	Current Status
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;	<ul style="list-style-type: none"> • There has been substantial improvement in infrastructure relating to metering and information technology in NESI, however, some aspects of settlements are still done manually. • About 95% of the 11kV and 33kV feeders have been metered to ensure transparent settlement • About 99% of the Maximum Demand (“MD”) customers which constituted 70% of the load demand have been metered while 42% of non-MD customers metering has been achieved • The mechanism/methodology to ensure that unmetered customers are not over-(or under-) billed is in place and updated regularly by the Commission. • The acquisition of SCADA/EMS system for a complete visibility and real-time balancing mechanism is ongoing and envisaged to be completed in 2023 <p>This CP is in progress and will be substantially achieved in 2023</p>
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;	<ul style="list-style-type: none"> • The Market Operator is in the process of finalising and deploying a settlement software that meets the current need of the market and is scalable to take various add-ons required for market settlement in MTEM. • The development process and efficacy of the software are continuously subjected to experts’ review. <p>This CP is in progress and will be substantially achieved in 2023</p>
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 3.8 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 sufficiently achieved;
- ii. Two (2) CPs regarding the satisfaction of infrastructure preconditions and market settlement software systems have been substantially achieved;
- iii. One (1) CP regarding the creditworthy distribution participants is still progressing. The recent review of the performance of the DisCos indicates that at least three (3) of the DisCos can directly enter into power purchase transactions/agreements with GenCos

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 and still progressing with the advent of far-reaching regulations to 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 increasing competition with more firms being able to compete in the market.
- d. Metering and IT set-up have substantially progressed and at different stages of development at the wholesale and retail markets with relatively more progress at the distribution and retail segments than the wholesale segment;





- 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 in phases starting with DisCos that are creditworthy;
- g. The review of CPs for transition to a more competitive market as provided in the Market Rules also indicates that CPs have been substantially met.

Section four (4) 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.



4. Driving Improvement in Network Reliability and Coverage

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 the regulations such as the investment in networks regulations, engages in the coordination of special interventions towards resolving the operational and technical challenges in electricity transmission and distribution.

4.1. Ensuring Improved and Efficient Networks Through Innovation

In this regard, the Commission has:

- directed DisCos and TCN to prepare 5-year capital investment plans - Performance Improvement Plans ("PIPs") - in line with the Commission's guidelines that will ensure the prioritisation of projects critical to improving operational and technical performance. The PIPs include TCN and DisCos' proposed investments required to address transmission and distribution network bottlenecks and free up part of the stranded generation capacity and address other related issues inhibiting the flow of energy and grid stability. The PIPs by DisCos have been approved by the Commission while the development of TCN's PIP is ongoing following and the submission would be subjected to a review by the Commission;
- directed TCN and the DisCos to execute Service Level Agreements ("SLA") outlining the performance commitments of each party with respect to 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 reducing the incidence of tripping at 132/33kV substations;



- Issued 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;
- While the implementation of DisCos PIP and SLA is ongoing, the Commission would issue an Order mandating TCN to subject all its capital projects above a defined threshold to the regulatory approval of the Commission.

4.2. Strengthening Coverage, Competition and Access to Networks

In this regard, the Commission, pursuant to section 96 (1), has issued:

- Regulations on Independent Electricity Distribution Network (2012) that provides for the issuance of distribution licences to qualified operators with a minimum distribution capacity of 5MW and to engage in electricity distribution, independent of the distribution system operated by the DisCos. This is intended to maximise access to electricity services and reduce congestion on the distribution network for the benefit of consumers;
- Eligible Customer (“EC”) Regulations (2017), pursuant to the Minister’s policy declaration in line with Section (27) of the EPSR Act. The regulations provide for bilateral transactions between the GenCos/Trading licensees and a customer or group of customers classified as an EC with an average minimum offtake threshold of 2MWh/h over a monthly period. The eligible customer regulations, among others, seek to:
 - i. Encourage third-party access to transmission and distribution infrastructure as a precursor to full retail competition in the Nigerian electricity market;
 - ii. Facilitate competition in the supply of electricity, promote the rapid





expansion of generation and transmission capacity and opportunity for improvement in quality of supply; and

- iii. Enhance the stability and operational efficiency of GenCos arising from the flatter load profiles of ECs and possibly lower technical losses, depending on the required network interconnection; and
- Guidelines on Electricity Distribution Franchising (2020) that allows DisCos to franchise part of their coverage areas. This is intended to improve the access and quality of electricity supply to customers within the franchised territories, vide third-party investments in metering, billing and network rehabilitation and expansion.



5. Panels and Committees in the Industry

There is a substantial compliance with the activation of Panels/Committees required as Conditions Precedent (“CP”) for the commencement and operation of the current stage (i.e., TEM) and the evolution 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 among others drive the review process.

5.1. Stakeholder Advisory Panel

There is currently a functional Initial Stakeholder Advisory Panel (“ISAP”) in NESI inaugurated by the Commission on the 24th May 2021

- As indicated in Table 5.1, the current ISAP consisting of twelve (12) members is the 3rd to be inaugurated by the Commission; and
- Since its inauguration, ISAP has been meeting regularly to carry out its responsibilities as highlighted in Rule 42.2.1 (a) of the Market Rules. More importantly, through its Rules working group, ISAP is currently reviewing the Market Rules to reflect the current realities of the market.

5.3. Dispute Resolution Panel

There is currently a Dispute Resolution Panel (“ISAP”) in NESI inaugurated by the Commission on the 7th May 2020

- As indicated in Table 5.1, the current DRP consisting of twelve (12) 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
- While DRP shall continue to perform its functions as spelt out in Rule 42.3.7(a) of the Market Rules as independent and neutral arbiters, the Commission continues to provide panel the necessary support and training for their capacity building;

5.4. Grid Code Review Panel

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

- As indicated in Table 5.1, the current GCRP consisting of twelve (12) members is the 3rd to be inaugurated by the Commission.
- Since its inauguration, GCRP has been meeting regularly to carry out its functions as spelt 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")	<p>a. Reviewing the Market Rules and the Grid Code and proposing and or approving amendments thereto on an ongoing basis; and</p> <p>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</p>	<p>I. Initial SAP: 12 Members</p> <ul style="list-style-type: none"> • 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 <p>II. Final SAP: 11 Members</p> <ul style="list-style-type: none"> ▪ 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 	<p>Active</p> <ul style="list-style-type: none"> • The current ISAP is the 3rd to be constituted and inaugurated by the Commission on 24 May 2021 in accordance with Section 42.1.1(a) & (b)





<p>2. <i>Dispute Resolution Counsellor ("DRC")</i></p>	<p>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</p>	<p>• 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</p>	<p>Active</p> <ul style="list-style-type: none"> • 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
<p>3. <i>Dispute Resolution Panel ("DRP")</i></p>	<p>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;</p> <p>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</p>	<p>I. Initial Composition</p> <ul style="list-style-type: none"> • 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 <p>II. Full Composition at the Initiation of MTEM</p> <ul style="list-style-type: none"> • 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 	<p>Active</p> <ul style="list-style-type: none"> • 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.
<p>4.</p>	<p>Section 9.2 of Appendix 9 of the Grid Code provides that GCRP shall be responsible for</p>	<p>I. Initial Composition</p>	<p>Active</p>





<p><i>Grid Code Review Panel ("GCRP")</i></p>	<p>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:</p> <ol style="list-style-type: none"> Keep the Grid Code and its working under review; 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 Publish recommendations as to amendments to the Grid Code that TCN or the Panel deems necessary for desirable and the reasons for the recommendations Issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to do so by the user; Consider what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by TCN; and 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 	<ul style="list-style-type: none"> 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 $\geq 1\text{MW}$ <p><i>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</i></p>	<ul style="list-style-type: none"> The current GCRP was constituted and inaugurated by the Commission on 22-23 November 2018 in accordance with Appendix 9 of the Grid Code
<p>5. <i>Other Panels and Committees</i></p>	<ol style="list-style-type: none"> 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 	<ul style="list-style-type: none"> The composition and tenure of the members are as may be determined by the Commission 	<ul style="list-style-type: none"> None at the Moment





6. Conclusion and Recommendation

In view of the progress highlighted in the relevant sections of this report, it is safe to conclude that the Nigerian electricity market has evolved substantially since privatisation and it is ripe for a gradual transition to a more competitive market/next developmental stage of the market.

To ensure a seamless transition and/or improvement in market performance, the underlisted are recommended for the Minister's consideration in collaboration with the relevant stakeholders:

- a. The Honourable Minister is invited to make a declaration for the creation of an Independent System Operator ("ISO") in line with Section 24(2&3) following which the necessary regulatory actions shall be provided by the Commission for the operational take-off of the entity. The unbundling of the SO/MO from TCN and the establishment of an independent ISO is overdue at the current stage of the market and pertinent to enhance industry transparency and further drive the market to sustainability;
- b. There is urgent need for clear policy on payment for energy consumption by the host communities - communities hosting power infrastructure (especially generation plants) - which has contributed substantially to liquidity challenges facing the industry;
- c. Prioritisation of the ongoing procurement of SCADA system by TCN and ensure the timely delivery of the project;
- d. There is need for ministry's compliance with industry regulations - especially with respect to generation projects and ad-hoc interventions;
- e. Ensure the accelerated of implementation of government intervention on infrastructure programs being run by the FGN including the NMMP,





DISREP and Siemens/Presidential Power initiatives geared towards service improvement and enhance market liquidity;

- f. While the Commission continues to monitor the implementation of DisCos' PIPs and SLA, the Honourable Minister is invited to ensure that TCN secures No-Objection from the Commission for their projects before they are sanctioned by the Ministry/FGN. This will not only ensure value for money but is also crucial to ensure alignment between transmission and distribution infrastructure;
- g. The Honourable Minister is invited to prioritise the development of Integrated Resource Plan ("IRP") for the industry.





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