



NIGERIAN
ELECTRICITY
REGULATORY
COMMISSION

2023 Annual Report & Accounts

ELECTRICITY ON DEMAND

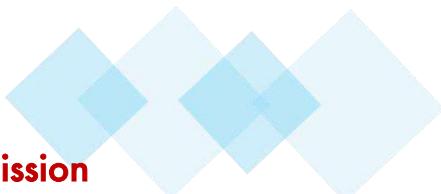


2023

Annual Report

& Accounts

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



Our Mission

Promote and ensure investor-friendly industry and efficient market structure to meet the needs of Nigeria for safe, adequate, reliable and affordable electricity.

Our Vision

"Electricity on demand"

Our Motto

"Keeping the lights on"

Core Values

Excellence, transparency, courage and discipline;

Leadership

Creating an environment of loyalty, trust, collaboration, and stakeholder engagement;

Teamwork

Professionalism

Proficiency, diligence, respect, fairness and accountability;

Good Governance

Making decisions in a fair, transparent and consistent manner, in compliance with the laws of Nigeria and our regulations.





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NERC Annual Report & Accounts is prepared in compliance with section 56 (1) of the Electricity Act 2023, which mandates the Commission to keep proper accounts and other records relating to such accounts in respect of all the Commission's activities, funds and property, including such particular account and records as the Minister may require. The report presents the Commission's regulatory and corporate activities, audited financial statements and analyses of the state of the Nigerian Electricity Supply Industry (NESI) covering operational, technical and commercial performances as well as consumer affairs. The Commission presents this report to a wide spectrum of stakeholders including financial and market analysts, potential investors, government institutions and the private sector.

NERC Annual Report & Account is freely available to the Nigerian Electricity Supply Industry stakeholders, government agencies and corporations. Individuals, on request, can also obtain any particular issue without a charge. Please direct all inquiries, comments and suggestions on the report to:

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LIST OF ABBREVIATIONS

ADR	Alternative Dispute Resolution
AEDC	Abuja Electricity Distribution Company Plc
ANAN	Association of National Accountants of Nigeria
ATC&C	Aggregate Technical, Commercial & Collection Losses
BCR	Business Continuity Regulations
BEDC	Benin Electricity Distribution Company Plc
BPE	Bureau of Public Enterprises
CA	Consumer Affairs
CAPEX	Capital Expenditure
CAPMI	Credited Advance Payment for Metering Implementation
CEET	Compagnie Energie Electrique du Togo
CPC	Consumer Protection Council
DisCos	Distribution Companies
DSOs	Distribution System Operators
EA	Electricity Act
ECN	Electricity Corporation of Nigeria
EEDC	Enugu Electricity Distribution Company Plc
EKEDP	Eko Electricity Distribution Company Plc
EPM	Engineering Performance and Monitoring
EPSRA	Electric Power Sector Reform Act
FCT	Federal Capital Territory
FMS	Financial and Management Services
GenCos	Generation Companies
GWh	Gigawatt hours
IBEDC	Ibadan Electricity Distribution Company Plc
ICAN	Institute of Chartered Accountants of Nigeria
IEDN	Independent Electricity Distribution Network
IE	Ikeja Electricity
IPP	Independent Power Plant
JEDC	Jos Electricity Distribution Company Plc
KAEDC	Kaduna Electricity Distribution Company Plc
KEDCO	Kano Electricity Distribution Company Plc
LLC	Legal Licencing and Compliance
MAN	Manufacturers Association of Nigeria
MAP	Meter Assets Provider
MCR	Market Competition and Rates
MO	Market Operator
MW	Megawatts
MWh	Megawatt hours
MYTO	Multi-Year Tariff Order





NACCIMA	Nigerian Association of Chambers of Commerce Industry, Mines and Agriculture
NAEE	Nigerian Association for Energy Economics
NBA	Nigerian Bar Association
NBET	Nigerian Bulk Electricity Trading plc
NDA	Niger Dams Authority
NEPA	National Electric Power Authority
NEPP	Nigerian Electric Power Policy
NERC	Nigerian Electricity Regulatory Commission
NESCO	Nigerian Electricity Supply Company Limited
NESI	Nigerian Electricity Supply Industry
NICE	Notices of Intention to Commence Enforcement
NIGELEC	Nigerien Electricity Society
NIM	Nigerian Institute of Management
NIPP	National Integrated Power Project
NSE	Nigerian Society of Engineers
PP	Percentage Points
PHCN	Power Holding Company of Nigeria
PHEDC	Port Harcourt Electricity Distribution Company Plc
PRS	Planning Research and Strategy
REC	Regulation on Eligible Customers
SBEE	Société Béninoise d'Energie Electrique
TCN	Transmission Company of Nigeria Plc
TLF	Transmission Loss Factor
YEDC	Yola Electricity Distribution Company Plc

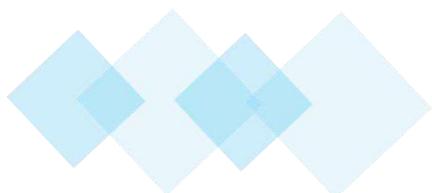




Executive Summary



- A. Legal and Regulatory Framework
- B. Human Resource Management
- C. Corporate Governance
- D. Regulation, Licensing & Compliance
- E. Consumer Affairs
- F. Electricity Tariffs
- G. State of the Nigerian Electricity Supply Industry (NESI)





Legal and Regulatory Framework

In 2023, the Electricity Act ("EA") was enacted, repealing the Electric Power Sector Reform Act ("EPSRA") of 2004 and other acts related to the Nigerian electricity market. The EA aims to create a more efficient, competitive, and liberalised market with private sector participation, and ensure legislative consistency across various segments and stakeholders in the sector. It also recognises the Nigerian Electricity Regulatory Commission ("NERC" or the "Commission") as the apex regulator for the Nigerian power sector and further reinforces NERC's role in driving competition and accountability in the electricity market.

NERC continues to fulfil its principal functions as outlined in Sections 34(1) and 34(2) of the EA, positioning itself to provide robust regulatory interventions as the power sector transitions from a state-owned monopoly to a more competitive market structure.

Reporting Obligations: In compliance with Section 34(1)(g) of the EA, the Commission published four quarterly reports (Q1-Q4) of its activities for 2023. The reports analysed the state of the Nigerian electricity industry, covering operational and commercial performances, regulatory functions and consumer affairs. Each quarterly report also provided a summary of the Commission's financial position, in compliance with Section 56(1) of the EA, which mandates proper accounts and record-keeping of all activities, funds, and properties of the Commission.

Furthermore, in compliance with Section 56(2) of the EA which mandates the Commission to, no later than three months after the end of the financial year, prepare audited financial statements, the Commission engaged PricewaterhouseCoopers (PwC) to audit the Commission's accounts for the year ended 31st December 2023.

Human Resource Management

Staff Composition: In 2023, the count of the Commission's total manpower was two hundred and fifty-two (252) broken down as follows –

- Seven (7) Commissioners
- Thirty-seven (37) Management staff





- One Hundred and Eighty-seven (187) Mid-management staff, and
- Twenty-one (21) junior staff

The members of staff are a mix of experienced professionals from diverse disciplines including Engineering, Economics, Sciences, Finance, Accounting, Social Sciences, Law and other fields relevant to the needs of the Commission.

The Commission's workforce cadre in 2023 is contained in Table A. It also shows the gender split of the Commission's workforce with women representing 31% of the total. In line with the provisions of the EA 2023, the Commission continues to promote equitable female representation within the Commission and the wider NESI.

Table A: Cadre and Gender Distribution of the Commission's Staff in 2023

No	Position	Cadre	Gender representation		
			Male	Female	Total
1	General Manager		5	1	6
2	Deputy General Manager	Mgt. Cadre	15%	5	3
3	Assistant General Manager		17	7	24
4	Principal Manager		16	16	32
5	Senior Manager	Senior Cadre	42%	24	13
6	Manager		30	4	34
7	Assistant Manager	Middle Cadre	34%	21	11
8	Analysts		31	21	52
9	Junior Staff	Junior Cadre	9%	19	1
Total			168	77	245

Note: The staff's distribution in this table excludes the Commissioners and their Aides

Capacity Development: The Commission places a premium on staff capacity development, and on account of this, members of staff attended the required in-person and remote regulatory, management and leadership courses in 2023.





Corporate Governance

The Commission has 7 Divisions subdivided into 24 units.

Structure of the Commission: In 2023, the Commission maintained the same core organisational structure it operated in 2022 with its activities being split across seven (7) Divisions which are listed below:

- Chairman's Office (CO)
- Consumer Affairs (CA)
- Engineering Performance & Monitoring (EPM)
- Finance & Management Services (FMS)
- Legal, Licensing & Compliance (LLC)
- Market Competition & Rates (MCR)
- Planning, Research & Strategy (PRS)

The seven (7) Divisions of the Commission are further subdivided into twenty-four (24) Units. Each Division is headed by a Commissioner who is responsible for overseeing the affairs of the Division. A management staff not lower than the rank of Assistant General Manager (AGM) coordinates the day-to-day activities of each Division and reports to the Commissioner.

In line with its condition of service, the Commission conducted the promotion exercise for eligible staff in 2023. Participants who were adjudged to have satisfied the stipulated requirements were duly promoted.

Strategic Goals: The 2021–2023 strategic plan of the Commission is intended to drive continued growth and consolidate the Commission's oversight functions in the NESI. Specifically, the plan provides for the realisation of the ten (10) goals listed below:

1. Creation of a financially viable electricity market;
2. Metering for all customers;
3. Effective compliance monitoring & enforcement;
4. Institutionalise code of corporate governance;
5. Recapitalisation of licensees in the sector;
6. Sustained growth in availability & quality of supply;
7. Enhancement of the nation's security of supply for electricity;





8. Promotion of local content and manpower development in NESI;
9. Enforcement of safety standards;
10. Review and enforcement of standards for customer care.

These goals were crafted to align with the overall objectives of the Commission as outlined in Section (34) of the EA, while also being consistent with the overarching policy directives issued by the Federal Government of Nigeria.

Highlights of the Commission's activities in 2023: The Commission's activities are guided by its strategic goals as well as overarching government policy and macroeconomic trends. The highlights of some of the Commission's activities for the year 2023 are summarised below –

- A. ***Upholding customer care standards:*** In 2023, the Commission launched several critical activities towards the enforcement of customer care standards in the NESI; these include:
 - i. Issuance of the Customer Protection Regulation (NERC-R-001-2023).
 - ii. The launch of the NESI call centre which provides a centralised portal for customers to pass complaints directly to their service providers.
 - iii. The launch of the Power Outage Reporting System (PORS) which is a mobile application for real-time reporting of electricity outages by consumers.
 - iv. The Commission opened an additional Forum Office in Ado Ekiti on 29 September 2023 to enhance the timely resolution of customer complaints that are not satisfactorily resolved at the DisCo customer complaints units.
 - v. The Commission facilitated nine (9) compensation meetings between licensees and victims of accidents recorded in 2023





vi. The Commission also issued the Order on compensation for SBT service failure (NERC/2023/003).

B. *Improving health/safety and technical robustness of the grid system:* Some of the key activities implemented under this scheme include –

- i. Establishment of a comprehensive scope for Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS)
- ii. Conduction of technical studies on the integration of Variable Renewable Energy (VRE) into the national grid.
- iii. Review of operating codes (Health & Safety Codes, Metering Code) & NESIS Regulations
- iv. Review of TCN's Performance Improvement Plan

C. *Enhanced transparency and stakeholder involvement in tariff reviews:* Pursuant to the provisions of the EA 2023 and NERC Regulations on the Procedure of Electricity Tariff Reviews in the NESI 2014, in evaluating the tariff review applications made by DisCos, the Commission conducted the rate-case hearings as part of the evaluation process of the extraordinary tariff review filed by DisCos in July 2023. This is consistent with international best practice in rate-setting and provides a platform for customers, customer advocacy groups and intervenors (industry experts and representatives of established organisations related to the power sector) to interrogate the submissions made by the DisCos in support of their applications.

Regulation, Licensing and Compliance

Regulations: The Commission issued the two (2) underlisted regulations in 2023.

- Customer Protection Regulation (NERC-R-001-2023): The Customer Protection Regulations (CPR) was issued in March 2023 and aligns the Commission's customer service standards with international best practices.





The Commission issued two (2) new Regulations and sixteen (16) new Orders in 2023.

- Mini-grid Regulations (NERC-R-117-2023): The Mini-grid Regulation was issued in December 2023 as a replacement of the Mini-grid Regulations of 2016 following a series of public and stakeholder consultations. In addition to stakeholder inputs, the new Regulation incorporates the changes and new provisions of the EA 2023.

Orders: The Commission issued sixteen (16) Orders to licensees in 2023. The Orders are listed in Table B below:

Table B: Orders issued by the Commission in 2023

S/N	Order No	Title of Order	Effective Date
1-11	NERC/001-012/2023	Orders on Reimbursement of Meter Costs for Meters procured under the Meter Asset Provider and National Mass Metering Frameworks	20th March 2023
12	NERC/2023/002	Order on the Mandatory Filing of Annual OpEx, Capital Investment Plans and Outcomes of Procurements Conducted by the TCN	1st July 2023
13	NERC/2023/003	Order on Migration of Customers and Compensation for Service Failure under Service-Based Tariff Framework	1st June 2023
14	NERC/2023/005	Order on Migration of Token Identifier of Standard Transfer Specification Meters from Key Revision 1 to Key Revision 2	6th July 2023
15	NERC/2023/006	Order on Deployment of Customer Engagement Platforms	1st September 2023
16	NERC/2023/020	Order on the Price Review of MAP Meters	6th September 2023





The Commission issued 118 licenses, permits and certifications in 2023.

Licensing and Permits: Following the satisfactory evaluation of applications, the Commission issued 118 licenses, permits and certifications in 2023 as contained in Table C.

Table C: Licenses, Permits and Certifications Issued by the Commission in 2023

SN	License/Permit	Number
1	On-grid generation	1
2	Off-grid generation	8
3	IEDN	7
4	Trading Licence	5
5	Embedded generation	3
6	Captive power	15
7	Mini-grid registration	28
8	Mini-grid permit	18
9	Meter service providers permit	24
10	MAP permit	9
Total		118

Compliance Monitoring and Enforcement: In 2023, the Commission issued twelve (12) Rectification Directives (RD) and four (4) Notices of Intention to Commence Enforcement Actions (NICE) against licensees for violations of rules and infractions. These include non-compliance with the Commission's orders, directives and rulings as well as failure to comply with forum panel decisions without filing appeals within the stipulated timeframe.

Litigation and Alternative Dispute Resolution: Pursuant to Section 42.3 of the market rules, the Commission has maintained a Dispute Resolution Panel (DRP) which is an Alternative Dispute Resolution (ADR) system of resolving disputes between market participants. In 2023, the DRP did not handle any case which continues a trend of limited utilisation of the DRP by market participants. In an attempt to correct this and in compliance with the Market Rules, the Commission has tasked the Dispute Resolution Councillor (DRC) with developing a strategy to drive the uptake of the DRP by market participants.





Consumer Affairs and Stakeholder Engagements

Consumer Affairs: The Commission conducted five (5) town hall/customer complaints resolution meetings in 2023. The meetings were conducted as detailed below:

- Jos, Plateau State; 18-20 April 2023
- Yola, Adamawa State; 09-11 May 2023
- Asaba, Delta State; 23-25 May 2023
- Makurdi, Benue State; 07-09 November 2023
- Ikeja, Lagos State; 22-23 November 2023

The Commission conducted town hall meetings with electricity consumers in Jos, Adamawa, Asaba, Makurdi and Ikeja in 2023.

Customer Complaints: The Customer Protection Regulation issued by the Commission during the year enumerates the standards and procedures for handling customer complaints in line with international best practices. The Commission provides various channels for customers to lodge complaints against their service providers. The complaints reporting channels include the NERC Customer Complaints Unit (NERC-CCU), DisCo Customer Complaint Unit (DisCo-CCU) and the NERC Forum Office. The Commission also launched the Power Outage Reporting System (PORS) during the year for customers to report outages in real-time.

Metering, billing, and service interruptions were the top categories of customer complaints in 2023.

In 2023, the NERC-CCU received 7,207 complaints and 5,067 were resolved corresponding to a 70.31% resolution rate. A review of the customer complaints data presented in Figure A indicates that metering, billing, and service interruption issues were the most common customer complaints, accounting for 82.82% (5,969) of the total complaints at the NERC-CCU in 2023.



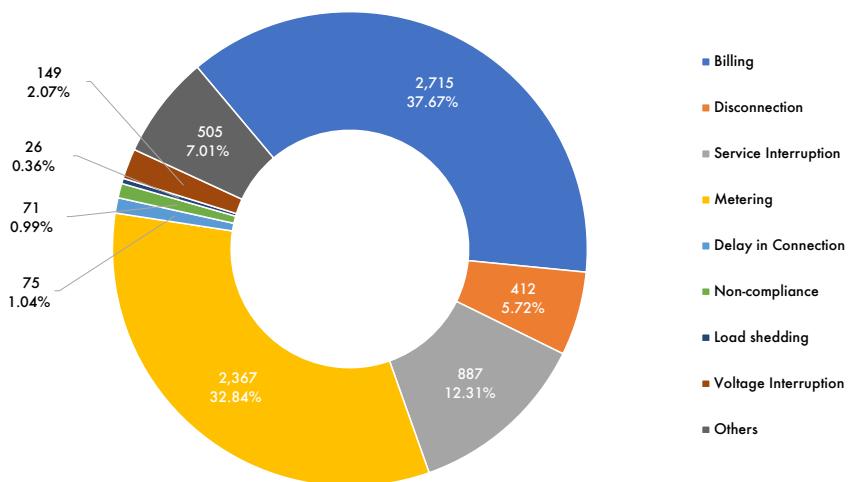


Figure A: Category of Complaints Received at the NERC-CCU in 2023

The total number of complaints received across all DisCos-CCU in 2023 was 1,220,245 out of which, 1,156,553 were resolved (resolution rate - 94.78%). Like the complaints received at the NERC-CCU, metering, billing, and service interruption were the most common complaints issues accounting for 77.55% of the total (Figure B).

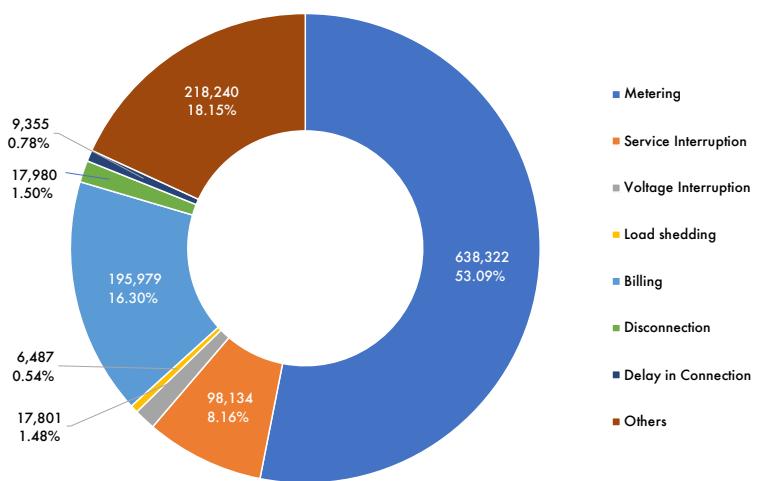


Figure B. Category of Complaints Received at DisCos-CCU in 2023





The Forum Offices had 359 sittings in 2023 and resolved 60.93% of the total active appeals.

There was a total of 10,144 active appeals (6,387 new appeals and 3,757 pending appeals from 2022) across all Forum Offices in 2023. The Forum Offices held 359 sittings in 2023 and resolved 60.93% of the total active appeals. Billing, metering and disconnection were the most prevalent complaints within the year, accounting for 61.41%, 23.90% and 5.28% of the total respectively (Figure C).

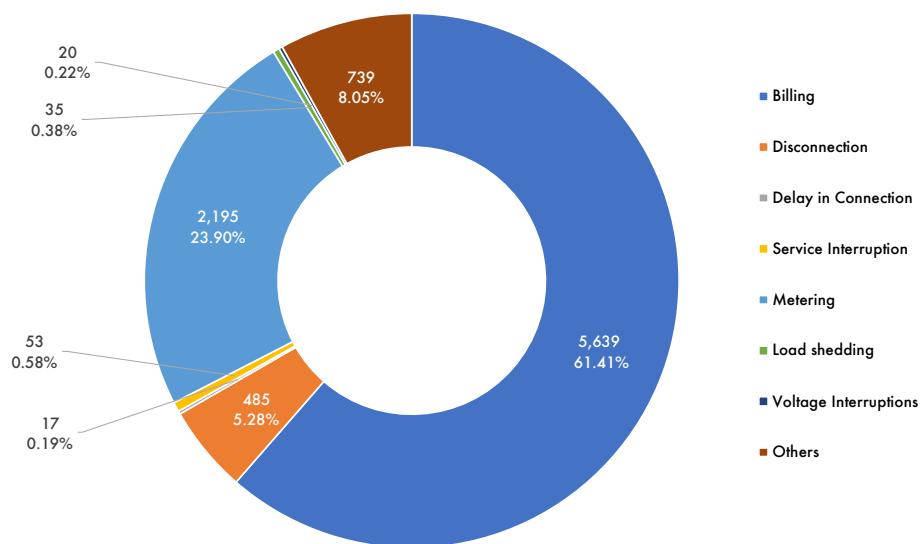


Figure C: Category of Complaints Received by all Forum Offices in 2023

Stakeholder consultation workshop was organised to facilitate capacity building and adoption of the EA 2023.

Stakeholder Engagements: The Commission held three (3) NESI stakeholder consultation meetings during the year to discuss important industry issues and to review compliance and performance. The Commission also organised a two-day workshop to engage stakeholders on the implementation of the new Electricity Act 2023. The workshop was to facilitate a deep dive into the provisions of the Act and effective collaboration among all stakeholders.

Other stakeholder engagement activities of the Commission during the year include:

- Electricity consumers enlightenment and protection workshop for staff of the Federal Competition and Consumer





- Protection Commission (FCCPC) and National Orientation Agency (NOA)
- Workshop for NESI stakeholders on feeder naming and other asset nomenclature for the NESI
 - Workshop for Civil Society Organisations (CSOs) and consumer advocacy groups
 - Workshop organised by the African Forum for Utility Regulators (AFUR) on mini-grid tariff tools and methodologies
 - Capacity strengthening workshop for DisCo's Heads of Corporate Communication
 - Public hearing for the strategic review of the Performance Improvement Plan (PIP) of the Transmission Company of Nigeria (TCN).

Electricity Tariffs

Multi-Year Tariff Order (MYTO): Pursuant to Section 76 of the now repealed EPSR Act 2004 and Section 116 of the EA 2023, the Commission established the Multi-Year Tariff Order (MYTO) as a regulatory methodology for determining electricity tariffs. The MYTO provides a 15-year tariff path for the NESI and ensures the financial viability of the power sector by setting cost-reflective tariffs.

The MYTO methodology offers a transparent framework for determining electricity tariff that provides for the clear disaggregation and determination of necessary operating costs and overheads and reasonable Return on Investment.

Tariff setting parameters: The MYTO methodology uses a building blocks approach in setting Transmission and Distribution tariffs which provides the joint benefit of price cap and incentive-based regulation. The generation tariff is determined using a benchmark Long Run Marginal Cost (LRMC) of the most economically efficient new entrant. The group of parameters which the Commission considers in determining or reviewing DisCos' tariffs include:

- Macroeconomic indices





- Aggregate Technical and Commercial Losses (ATC&C) targets and trajectories
- Capital Expenditure (CAPEX)
- Operational Expenditure (OPEX)
- Energy Offtake

2023/2024 Extraordinary Tariff Review: The FGN policy to unify exchange rates had a consequential impact on the wider macroeconomic environment including inflation rate, etc. In a bid to ensure that these changes did not negatively impact their ability to deliver service to customers and pursuant to the provisions of the 2014 Regulations on Procedure for Electricity Tariff Reviews in the NESI, all DisCos filed applications for extra-ordinary tariff reviews with the Commission in June 2023.

In compliance with the Business Rules of the Commission, the Commission conducted rate case hearings from July 24 to August 8, 2023, at its headquarters in Abuja. A panel of three Commissioners presided over the hearing in compliance with the Business Rules of the Commission, while invitations were extended to critical sector stakeholders¹ including consumer groups to interrogate the submissions of the DisCos.

The Commission duly considered all the comments by the stakeholders and intervenors as well as the impact of changes in macroeconomic variables, prudence in expenditure, and operational efficiency parameters provided in the DisCos revenue requirement and resultant end-user tariffs. Pursuant to section 116 of the EA 2023 and extant regulations, the Commission considered and approved cost-reflective tariffs for the DisCos with effect from 01 January 2024. Notwithstanding, in line with the policy direction of the FGN on electricity subsidy, the allowed end-user tariffs to be charged by DisCos were frozen at the rates which became effective in January 2023 (Table D).

¹ Federal Competition and Consumer Protection Commission (FCCPC), Nigerian Society of Engineers (NSE), National Union of Electricity Employees (NUEE), Manufacturers Association of Nigeria (MAN), Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA), the Bureau of Public Enterprise (BPE), Transmission Company of Nigeria Plc (TCN), registered intervenors (Appendix D.2).





Table D: Cost-Reflective and Allowed Tariffs effective 01 January 2024

DisCo	CRT(₦/kWh)	Allowed Tariff (₦/kWh)	Subsidy (₦/kWh)
Abuja	120.88	63.24	57.64
Benin	126.00	60.10	65.90
Eko	114.80	59.50	55.30
Enugu	127.70	59.00	68.70
Ibadan	126.10	62.50	63.60
Ikeja	112.10	56.60	55.50
Jos	138.90	60.60	78.30
Kaduna	129.40	57.50	71.90
Kano	128.20	58.80	69.40
PH	127.00	61.40	65.60
Yola	214.10	66.00	148.10

State of the Industry

Operational report: Pursuant to the regulatory authority vested in the Commission in the EA 2023, the Commission continued overseeing the operational activities of the NESI. The summary of the NESI's operational performance report for 2023 is provided below.

Average Available Capacity in 2023 was 4,544.13MW

Available Capacity and Generation: In 2023, the average daily available capacity of the twenty-seven (27) grid-connected power plants was 4,544.13MW. The total generation during the year was 36,710.38GWh which translates to an average hourly generation of 4,190.68MWh/h. The overall availability factor for all grid-connected plants was 35.90%, which indicates that more than 64% of the installed capacity in the NESI was not available in 2023. Hydropower plants contributed 9,086.90 GWh (24.75%) to the total generation in 2023.

National Grid operations: The average lower and upper daily system frequencies of the grid in 2023 were 49.04Hz and 50.81Hz respectively (range of 1.77Hz), while the average lower and upper operating voltage were 298.23kV and 352.22kV respectively (range of 54.00kV). The NESI also recorded three (3) incidents of system collapses in 2023. The data for system collapse incidents between 2020 and 2023 are contained in Table E.





Table E: System Collapses in 2020 - 2023

Category of Collapse	No. of Collapses			
	2020	2021	2022	2023
Partial Collapses	0	2	2	0
Total Collapses	4	2	4	3

Metering: As of 31st December 2023, only 5,842,726 (44.39%) of the registered 13,162,572 customers in the NESI were metered. DisCos installed 672,539 end-use customer meters in 2023. 25,847 meters were installed under the National Mass Metering Program (NMMP) framework while 585,265 meters were installed under the Meter Asset Provider (MAP) framework. Furthermore, 6,912 meters were installed through the Vendor Finance Metering framework while 53 end-use customer meters were installed through the DisCo Financed framework. The summary of customer metering by DisCos is contained in Figure D.

In 2023,
672,539 end-use
customers meters
were installed by
the DisCos

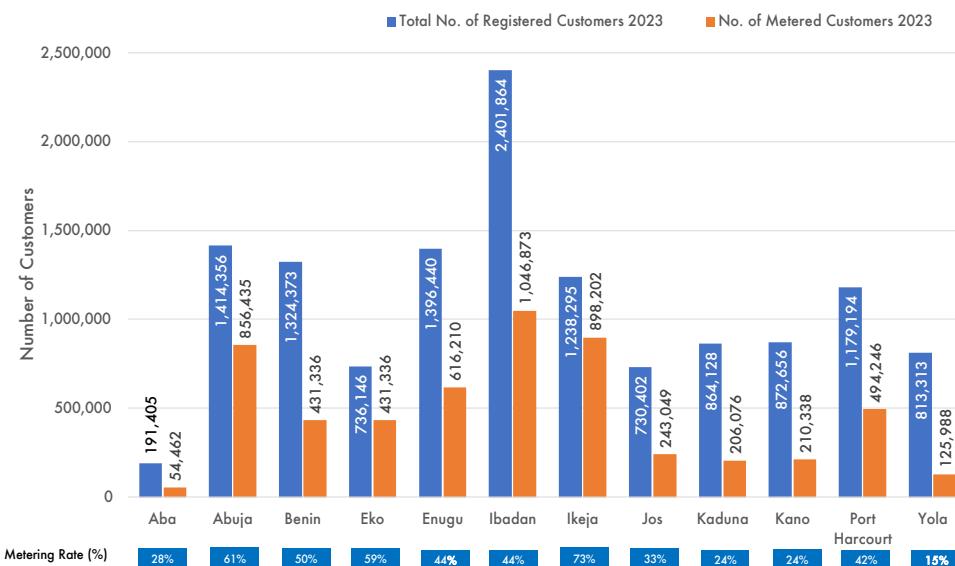


Figure D: Metering Status in 2023

Commercial report: The commercial performance of the NESI is a measure of the flow of funds from customers to upstream electricity industry players. The key parameters that are used in evaluating commercial performance include:

- Energy offtake performance of DisCos





- Energy billed and billing efficiency
- Revenue and collection efficiency
- Remittances by downstream market participants to the Market Operator (MO) and the Nigerian Bulk Electricity Trading Company (NBET)

Energy offtake performance: In 2023, the total energy received by DisCos at their trading points was 29,979.46GWh. With the Commission's effort to achieve market maturity and improved upstream payments, energy offtake by DisCos transited from MYTO allocation² to the Partial Activation of Contract (PAC) regime in July 2022 which enabled the DisCos to determine their unconstrained power requirements in absolute Megawatts (MW) known as their Partially Contracted Capacity (PCC).

The DisCos energy offtake performance in 2023 was 95.50%. Ten (10) DisCos took less energy than their PCC with only Eko DisCo taking up to 100% of its available PCC (ofttake - 433.90MWh/h vs available PCC - 402.93MWh/h). Yola (92.77%), Enugu (89.91%) and Jos (87.19%) DisCos recorded the lowest energy offtake performances.

Billing and Collection efficiencies: Figure E shows the billing and collection efficiencies by all DisCos in 2023. Out of the 29,979.46GWh total energy received by all DisCos, 23,747.75GWh was billed to the end-users, resulting in a gross billing efficiency of 79.21%.

² Under the MYTO allocation regime, the allocation of energy to DisCos was based solely on the ratios contained in the vesting contracts signed upon privatisation. Also, there was limited enforcement of PPA contracts which led to the non-recognition of capacity (and its associated payments) for most of the grid-connected power plants.



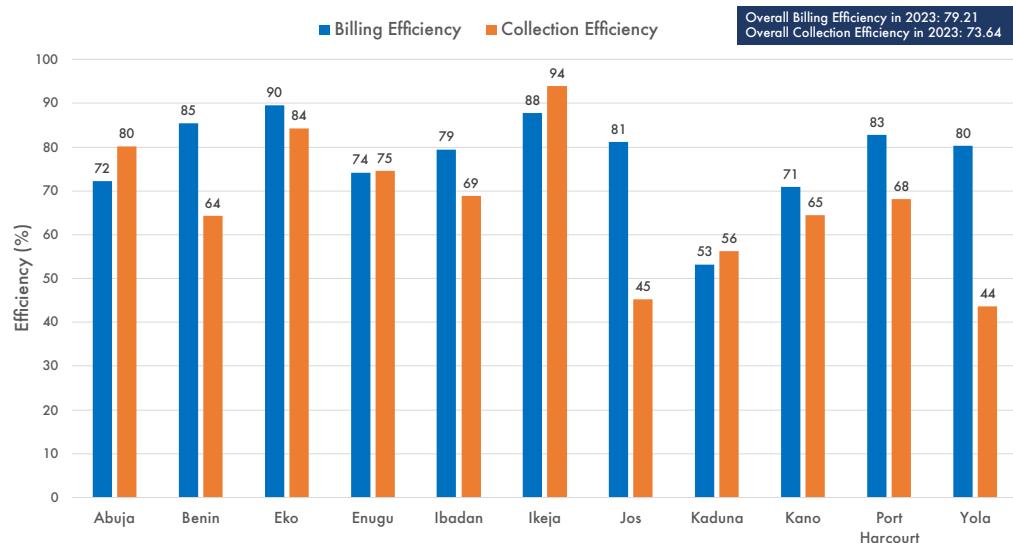


Figure E: DisCos Billing and Collection Efficiencies in 2023

The total billings to electricity consumers by the DisCos was ₦1,463.24 billion of which only ₦1,077.51 billion was collected, leaving a total outstanding of ₦385.73 billion and corresponding to a collection efficiency of 73.64%.

The overall remittance in 2023 was 82.37%

Market Remittances by DisCos: In 2023, a total invoice of ₦858.03³ billion was issued to all the DisCos for energy received from NBET and for service charges by the MO, out of which a sum of ₦706.73 billion was settled by DisCos, leaving a total deficit of ₦151.30 billion in the market. This payment translates to an overall remittance performance of 82.37%

The disaggregated DisCo's remittance performances to NBET and MO in 2023 are presented in Figure F.

³ The NBET portion of the total invoice issued to DisCos has been adjusted for the Minimum Remittance Obligation (MRO) of the DisCos.



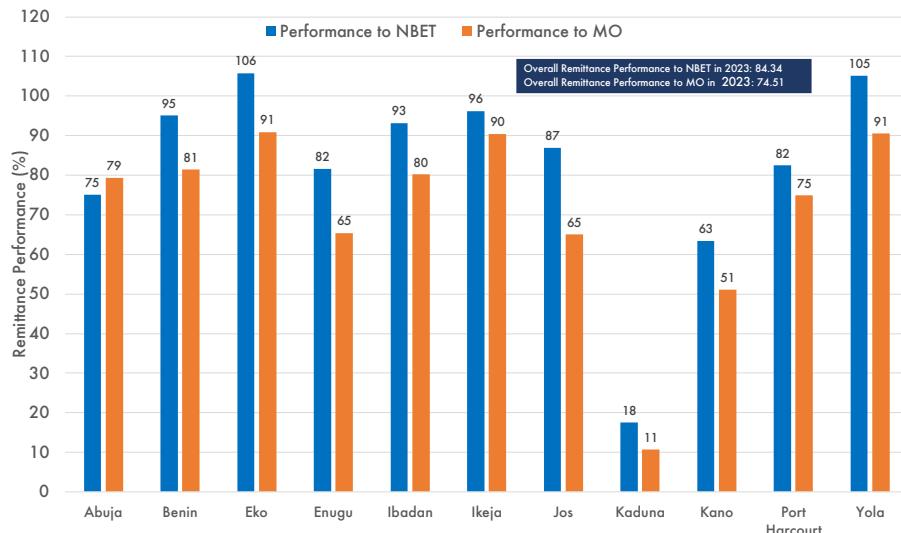


Figure F: DisCos' Remittance Performance in 2023

Eko and Yola DisCos had high remittance performances of 105.76%⁴ and 105.14% respectively to NBET in 2023 while Kaduna achieved the lowest remittance performance to NBET (17.59%). The highest remittance performances to the MO were recorded by Yola, Eko and Ikeja at 90.91%, 90.85% and 90.38% respectively while Kaduna recorded the lowest MO remittance performance of 10.75% in 2023.

The International Customers made a total payment of \$50.36 million out of a total invoice of \$53.55 million issued to them by the MO.

Market Remittances by Special and Bilateral Customers: In 2023, the NESI continued to provide electricity to 3 international bilateral customers - i) Societe Beninoise d'Energie Electrique; ii) Compagnie Energie Electrique du Togo; iii) Societe Nigerienne d'electricite. Cumulatively, these 3 customers received an invoice of \$53.55 million from MO and made a payment of \$50.36 million. This corresponds to a remittance performance of 94.04%. There were nineteen (19) active domestic bilateral customers in 2023. Cumulatively, these customers received a total invoice of ₦10,320.84 million from MO and made a payment of ₦8,766.15 million corresponding to a remittance performance of 84.94%.

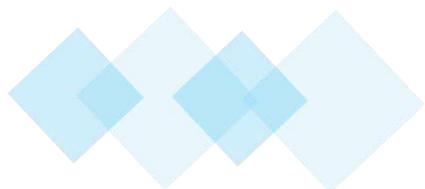
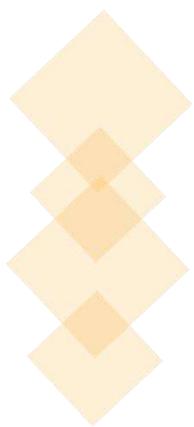
⁴ Remittance performance above 100% is due to payment of outstanding invoices.





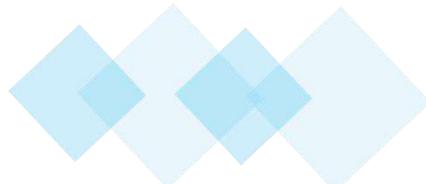
Chapter One:

Legal and Regulatory Framework





- 1.1 Background to the creation of the Commission**
- 1.2 Legal Framework**
- 1.3 Regulatory Functions**
- 1.4 Reporting Obligations**





1.1 Background to the creation of the Commission

In March 2001, the Federal Government of Nigeria (FGN) released the Nigerian Electric Power Policy (NEPP) in an attempt to arrest the challenges that had plagued electricity supply in Nigeria over the prior decades and heralded the prevalence of rolling blackouts to electricity consumers. These problems were caused by several factors including –

- Gross inadequacy of available generation due to lack of investments in new generation plants and poor maintenance of installed plants;
- Poor and aged transmission and distribution infrastructure arising from limited investments and consequentially driving high technical losses along the network;
- Overall financial unsustainability and illiquidity of the electricity market caused by a combination of non-cost reflectiveness of tariffs and extreme levels of commercial losses.

The NEPP was adopted in 2002 and kickstarted the reform efforts of the FGN in the power sector which were ultimately geared towards transitioning the electricity market from a state-owned vertically integrated monopoly into a competitive, liberalised market with significant private sector participation at all steps of the value chain.

One of the critical milestones under the reform program of the power sector was the enactment of the Electric Power Sector Reform Act (EPSRA) in 2004. The EPSRA gave legal authority and support to the reforms and repealed the National Electric Power Authority (NEPA) Act of 1972.

The National Electric Power Authority (NEPA) was transitioned to the Power Holding Company of Nigeria (PHCN) which was subsequently unbundled into 18 separate companies consisting of six (6) Generation, one (1) Transmission





and eleven (11) Distribution companies; thereby opening the market for private sector investment/participation.

Furthermore, section (31) of the EPSRA provided for the establishment of the Nigerian Electricity Regulatory Commission ("NERC" or the "Commission") which was mandated to serve as an independent regulatory body to drive the power sector reform by ensuring fairness, transparency and a level playing field for all stakeholders. The Commission was officially inaugurated on the 31st of October 2005 with its headquarters in Abuja.

In recognition of the evolution of the Nigerian electricity market following almost a decade of privatisation of the generation and distribution segments of the market as well as the need to push the market towards more efficient competition, the Electricity Act 2023 was enacted in June 2023. The EA 2023 repealed the EPSRA 2004 and the four listed Acts related to the Nigerian electricity market:

- The Hydroelectric Power Producing Areas Development Commission Act, No. 7, 2010
- The Hydroelectric Power Producing Areas Development Commission Act, 2010 (Amendment) Act, 2013
- The Hydroelectric Power Producing Areas Development Commission Act, 2010 (Amendment) Act, 2018
- The Nigerian Electricity Management Service Agency Act (NEMSA Act) 2015

By consolidating the various Acts that previously governed the sector, the EA 2023 seeks to ensure legislative consistency across the various segments and stakeholders in the sector. In addition to recognising NERC as the apex regulator for the Nigerian power sector, the EA 2023 has given the Commission significantly increased enforcement powers. This is essential for allowing the





Commission to put in place a robust accountability framework with adequate deterrence for all market participants.

Since its inception, the Commission has continued to position itself to give robust regulatory interventions as the power sector transitions from a state-owned monopoly to a more competitive market structure.

1.2 Regulatory Functions

The principal functions of the Commission as outlined under section 34(1) of the EA are as follows -

- A. To create, promote, and preserve efficient electricity 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 and 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;
- G. To present quarterly reports to the President and National Assembly on its activities;





- H. To issue directives and carryout such measures to ensure the gradual development and smooth operation of the various stages of the market;
- I. To promote the development and utilisation of renewable energy services and increase the contribution of renewable energy in Nigeria's energy mix;
- J. To promote cost-reflective and service-reflective tariffs and ensure gradual elimination of cross subsidies within a specified timeframe; and
- K. To promote gender mainstreaming and local content requirements within the NESI

1.3 Legal Framework

The legislative bases for the powers conferred on the Commission in the EA 2023 are summarised below:

- A. Licensing: Section 34(2)(d) of the EA empowers the Commission to licence and regulate persons engaged in the generation, transmission, system operation, distribution, supply and trading of electricity.
- B. Enforcement and Sanctioning: Sections (63 and 64) of the EA describe the conditions of licences and the Commission's power to regulate the activities of licensees. The Commission is empowered with the legal authority to inquire into the activities of a person engaging or seeking to engage in any of the activities requiring a licence as defined in the EA, probe violations and impose penalties (including fines and imprisonment, forfeiture of undertakings) as well as licence cancellation to any person who contravenes the terms and conditions of licenses issued pursuant to the provisions of the Act.
- C. Generation of Electricity: The Commission is obligated to promote electricity generation from renewable energy sources, as enshrined in





Section (80) of the EA 2023. In granting licences, the Commission is mandated to promote embedded generation, hybridised generation, co-generation, and electricity generation from renewable sources such as solar energy, wind, small hydro, biomass and other renewable sources as defined by the Act or may be developed.

- D. **Transmission of Electricity:** Sections (108 - 112) of the Act mandate the Commission to oversee electricity transmission in the NESI. In addition to specifying the demarcation of the National Control Centre, the Act also specifies the Commission's powers with respect to third-party investment in the national grid as well as independent transmission network operators. The Commission is granted clear powers with respect to its role in ensuring the economic viability of investments while actively supervising and controlling the stability and efficiency of the national grid.
- E. **Distribution and Supply of Electricity:** Sections (113 – 115) of the Act mandate the Commission to oversee the Distribution and Supply of Electricity in the NESI. Section 113(2) empowers the Commission to conduct biennial reviews of distribution licensees, ensuring power source adequacy, distribution system maintenance, and effective consumer complaint resolution. Section (114) emphasises the need to ensure the installation of proper meters for accounting and audit purposes, while Section (115) empowers the Commission to issue regulations to ensure the recovery of arrears for electricity supplied while specifying conditions for enforcing outstanding bills against new occupants.
- F. **Tariffs and Subsidies:** The Commission is mandated to oversee tariff regulation and subsidy management in accordance with Sections (116) and (117) of the Act, ensuring that licensees operate efficiently and recover their full costs with a reasonable return on investment. The





activities subject to tariff regulation as enshrined in the Act include generation, trading, transmission, distribution, supply, and system operations.

G. Consumer Protection and Licensee Performance Standards: Sections (119 - 120) of the Act mandate the Commission to develop various consumer standards and procedures, in collaboration with licensees. These include customer service standards, quality of service and supply standards, customer complaint handling procedures, assistance procedures for customers facing bill payment difficulties, application procedures for electricity service, procedures for disconnecting non-paying customers, dissemination methods for consumer information, and procedures for responding to emergencies.

H. Competition and Market Power: The Commission plays a pivotal role in overseeing competition and market power within the NESI, as outlined in Section (121) of the Act. The Commission is mandated to report to the Minister of Power, on an annual basis, on the industry's potential for additional competition. The Commission is also mandated to prevent abuse of market power through various decision-making processes such as the grant of licences, pricing, and approval of mergers or affiliations. In case of identified market power abuses, the Commission is empowered to undertake enforcement actions such as issuing cease orders and levying fines as it deems appropriate.

I. Renewable Energy and Energy Efficiency: Sections (164 - 171) of the Act empower the Commission to actively support and regulate the development and utilisation of renewable energy through measures including the simplification of licensing procedures, issuance of regulations, and establishment of technical standards.





1.4 Reporting Obligations

1.4.1 Quarterly Reports

Pursuant to Section 34(1)(g) of the EA which states that - “the Commission shall present quarterly reports to the President and the National Assembly on its activities”, the Commission has published its four (4) quarterly reports for 2023. The reports contain analyses of the state of the Nigerian electricity industry (covering both the operational and commercial indices), regulatory functions, consumer affairs, the Commission’s finances, and staff development during each quarter.

1.4.2. Financial Reports

The financial activities of the Commission and the associated reporting requirements are governed by sections 56(1) and 56 (2) of the EA 2023. Section 56(1) stipulates that “the Commission shall ensure that proper accounts and other records relating to such accounts are kept in respect of all the Commission's activities, funds and property, including such particular accounts and records as the Minister may require”. Section 56(2) of the EA states that “The Commission shall, not later than three months, after the end of the financial year, prepare and submit to the Auditor General of the Federation and National Assembly, a statement of accounts in respect of that financial year.”

In compliance with the above, the Commission engaged Messrs PricewaterhouseCoopers (PwC) to audit the Commission's account for the year that ended 31st December 2023. A summarised report of the audited statements is contained in Chapter 8. Furthermore, each quarterly report for 2023 included a summary of the Commission's financial position for the quarter.

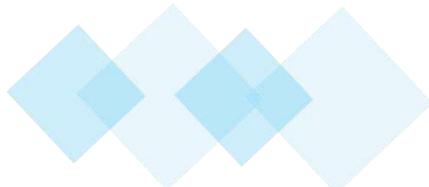




Chapter Two: Human Resource Management



- 2.1 Board of Commissioners**
- 2.2 General Managers**
- 2.3 Secretary of the Commission**
- 2.4 Management Staff**
- 2.5 Forum Office Secretaries**
- 2.6 Staff Composition**





2.1 Board of Commissioners



Engr. Sanusi Garba
Chairman/CEO



Musiliu O. Oseni, PhD
Vice Chairman
Commissioner – Market Competition & Rates





Chidi Ike
Commissioner—Engineering Performance & Monitoring



Dave C. Akpeneye
Commissioner—Legal, Licensing & Compliance



Aisha Mahmud Mrs.
Commissioner—Consumer Affairs



Nathan R. Shatti
Commissioner—Finance & Management Services



Yusuf Ali, PhD
Commissioner—Planning Research & Strategy





2.2 General Managers

The General Manager (GM) is the pinnacle that any staff can attain over the course of their career in service of the Commission. GMs (or the most senior staff) usually act as the administrative heads of the division and work closely with the Commissioners who provide executive oversight to the division. In a Commissioner's absence, the GM may take over some of the executive responsibilities of the Commissioner. As of 31 December 2023, the Commission had six (6) GMs who are listed in Table 1.

Table 1: General Managers of the Commission as of December 2023

Name	Designation	Date Appointed
Sharfuddeen Mahmud	GM, Finance & Management Services (FMS)	01 January 2018
Bassey N. Ayambem	GM, Planning, Research & Strategy (PRS)	01 January 2018
Dr Usman Abba-Arabi <i>mni</i>	GM, Public Affairs, Chairman's Office (CO)	01 January 2018
Abdulkadir Babakura Shettima	GM, Finance & Management Services (FMS)	01 January 2018
Zubairu T. Ahmadu	GM, Legal Licencing & Compliance (LLC)	01 January 2021
Maryam Y. Abubakar (<i>Mrs</i>)	GM, Procurement (CO)	01 January 2021

2.3 Secretary of the Commission

The Secretary of the Commission heads the secretariat unit which is responsible for providing administrative support to the Commission as well as the coordination and preparation of the minutes of the meeting of the Board of Commissioners. As of 31 December 2023, the Commission's Secretary was –

Ada Ozoemena (*Mrs*) DGM, *Secretariat, CO*





2.4 Management Staff

The management staff cadre is composed of GMs, DGMs and AGMs. The Commission's management staff as of 31 December 2023 are listed below (total number - 37) *except staff listed in sections 2.2 and 2.3 of this report.*

Table 2: Management Staff of the Commission

S/N	Name	Position	Unit and Division
1	Shittu Shaibu	DGM	Customer Service Standards, CA
2	Abba I. Terab	DGM	Tariff & Rates, MCR
3	Abdussalam Yusuf	DGM	Research, PRS
4	Abdullah Adamu	DGM	ICT, FMS
5	Sule Friday E.	DGM	Market Analysis, MCR
6	Hafsat Abdullahi Mustafa	DGM	Public Affairs, CO
7	Hauwa Yakubu	DGM	Compliance, LLC
8	Arit Uya	AGM	Consumer Complaints, CA
9	Michael Faloseyi	AGM	Public Affairs, CO
10	Kanneng Gwon	AGM	Customer Service Standards, CA
11	Zubair B. Zubair	AGM	Consumer Affairs, CA
12	Ene Effiom	AGM	Consumer Complaints, CA
13	John D. Joseph	AGM	Engineering & Standards, EPM
14	Jonathan Okoronkwo	AGM	Corporate Planning & Strategy, PRS
15	Abu Kadiri	AGM	Networks, EPM
16	Mary Anahve	AGM	Public Affairs, CO
17	Rasheed Busari	AGM	General Administration, FMS
18	Habib Kidaji	AGM	Human Resources Development, FMS
19	Saidu Lawal	AGM	ICT, FMS
20	Regina Osuagwu	AGM	Consumer Affairs, CA
21	Umar Mohammed	AGM	Research, PRS
22	Emeka Onyegbule	AGM	Market Competition and Rates, MCR
23	Ahmed Ndanusa	AGM	Chairman's Office, CO
24	Anthony Essien	AGM	Consumer Affairs, CA
25	Okpale Daisy	AGM	Licensing, LLC
26	Imam Mohammed	AGM	Health Safety and Environment, EPM
27	Bala Ado Shehu	AGM	Finance and Accounts, FMS
28	Iloeje Chukwuemeka	AGM	ICT, FMS
29	Azikiwe Chigozie V	AGM	Market Analysis, MCR
30	Ebehiyele Edeh	AGM	RFRA, MCR





2.5 Forum Office Secretaries

Section 44(1) of the 2023 Customer Protection Regulation (CPR 2023) states that “The Commission shall establish Forum Offices across the country for the purpose of hearing and resolving customer complaints in the operational area of every Distribution Company”. Forum offices are designed to provide a touch point for customers to file complaints against the Commission’s licensees. Therefore, a critical aspect of the work of the forum office is the coordination of quasi-judicial hearings of disputes between customers and licensees (mainly Distribution Companies – “DisCos”).

Section 43(9) of the CPR provides that if a customer is not satisfied with the resolution of any complaints filed at the DisCos’ Customer Complaints Units (DisCos-CCU), such customer may file a case to be adjudicated by the forum panel at the Forum Office. The Forum Office is managed by the forum secretary while the hearings are conducted by five (5) forum panel members⁵ who are not staff of the Commission, pursuant to the provisions of the CPR 2023. The list of the Commission’s forum secretaries as of 31 December 2023 is contained in Appendix A.1.

⁵ The composition of the forum panel is as follows:

1. A legal practitioner with experience in alternative dispute resolution nominated by the Nigerian Bar Association (NBA).
2. A financial expert nominated by either the Manufacturers Association of Nigeria, Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA) or any other reputable organisation.
3. A qualified electrical engineer nominated by either the Council for Regulation of Engineering in Nigeria (COREN) or the Nigerian Society of Engineers (NSE).
4. A nominee of the Federal Competition and Consumer Protection Commission (FCCPC).
5. A representative of an NGO based in the distribution company’s operating area nominated by the Commission.





2.6 Staff Composition

The total manpower of the Commission in 2023 was two hundred and fifty-two (252) persons inclusive of the seven (7) commissioners. The Commissioners and members of staff are experienced professionals from diverse backgrounds and disciplines ranging from Engineering, Law, Sciences, Economics, Accounting and Finance, amongst others. The detailed distribution of staff by division, cadre and gender is presented in the sections below:

2.6.1 Distribution by Division

The distribution of staff in the year, across the different Divisions, is presented in Table 3. The Finance & Management Services Division had the highest number of staff; sixty-six (66), representing 27% of the total Commission's staff, while the Planning, Research & Strategy Division had the least manpower with sixteen (16) staff, representing 7% of the staff in the Commission.

Table 3: Distribution of the Commission's Staff by Divisions in 2023

S/N	Divisions	Number of Staff	Percentage Share
1	Chairman's Office	28	11%
2	Consumer Affairs (excluding Forum Offices)	64	26%
3	Engineering, Performance & Monitoring	19	8%
4	Finance & Management Services	66	27%
5	Legal, Licensing & Compliance	27	11%
6	Market, Competition & Rates	25	10%
7	Planning, Research & Strategy	16	7%
Total		245	100%

Note: 1. The staff distribution excludes the seven Commissioners and their seven aides

2.6.2 Distribution by Cadre

The distribution of staff by cadre as of 31 December 2023, is presented in Table 4. The Commission had thirty-seven (37) senior management staff, one hundred and four (104) mid-management staff, eighty-three (83) lower-level staff and twenty-one





(21) junior staff representing 15%, 42%, 34% and 9% respectively of the total Commission's staff.

Table 4: Distribution of the Commission's Staff by Cadre in 2023

S/N	Position	Number of Staff	Cadre	Total Number of Staff	Percentage Share
1	General Manager	5			
2	Deputy General Manager	8	Mgt Cadre	37	15%
3	Assistant General Manager	24			
4	Principal Manager	32			
5	Senior Manager	38	Senior Cadre	104	42%
6	Manager	34			
7	Assistant Manager	31			
8	Analyst I	34	Middle Cadre	83	34%
9	Analyst II	18			
10	Junior Staff	21	Junior Cadre	21	9%
	Total	245	All Cadre	245	100%

Note: The staff distribution excludes the seven Commissioners and their Aides

2.6.3 Distribution by Gender

The distribution of staff by gender as of 31 December 2023 as illustrated in Figure 1 shows that approximately 31% of the professional workforce of the Commission was female, which aligns with the Commission's commitment to gender balance.



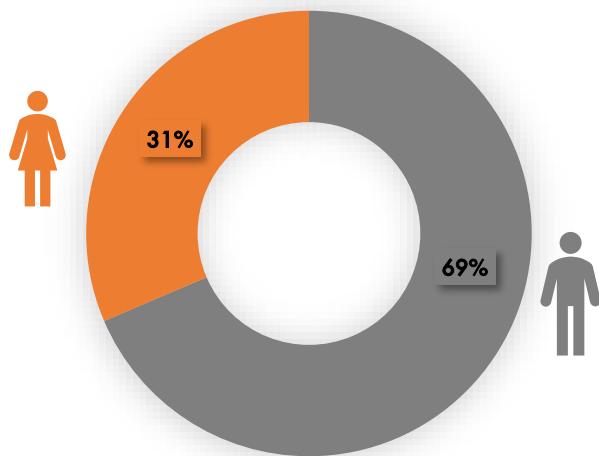


Figure 1: Distribution of the Commission's Staff by Gender in 2023

2.7 Capacity Development

The Commission places a high premium on capacity development of its staff as it recognises that the quality of personnel impacts significantly on the quality of its operations and activities. In 2023, the Commission continued the implementation of its capacity-building strategy by providing training to staff based on skill gaps. Staff were also sponsored to attend workshops, conferences, and meetings on issues pertinent to the discharge of the Commission's functions.

Members of staff of the Commission were sponsored to attend annual conferences of their respective professional bodies among which included the CIPM- Chartered Institute of Personnel Management of Nigeria, NIPR- Nigerian Institute of Public Relations, NIM- Nigerian Institute of Management, ICAN- Institute of Chartered Accountants of Nigeria, ANAN- Association of National Accountants of Nigeria, NSE- Nigerian Society of Engineers and the NBA- Nigerian Bar Association.





2.8 Promotion, Awards, Recruitment and Retirement

In pursuit of a merit-based work environment that incentivises excellence among its staff, the Commission conducts transparent promotion exercises annually for eligible staff based on the provisions of the "Conditions of Service". At the end of the 2023 exercise, staff who satisfied the stipulated requirements were duly promoted.

The Commission also held an award ceremony to recognise staff who had exhibited excellence in the delivery of their duties. Long-service awards were also presented to staff who had achieved notable milestones in the number of years of meritorious service they have delivered to the Commission.

Furthermore, the Commission concluded its recruitment process which commenced in 2022 to employ suitably qualified Nigerians to join its workforce. The newly employed staff cut across the various cadres and divisions of the Commission and were successfully onboarded into their respective roles.

In 2023, the total number of staff that exited the services of the Commission was twelve (12) – seven (7) resignations, four (4) retirements and one (1) death.





Chapter Three: Corporate Governance



3.1 Structure of the Commission

3.2 Strategic Goals (2021-2023)

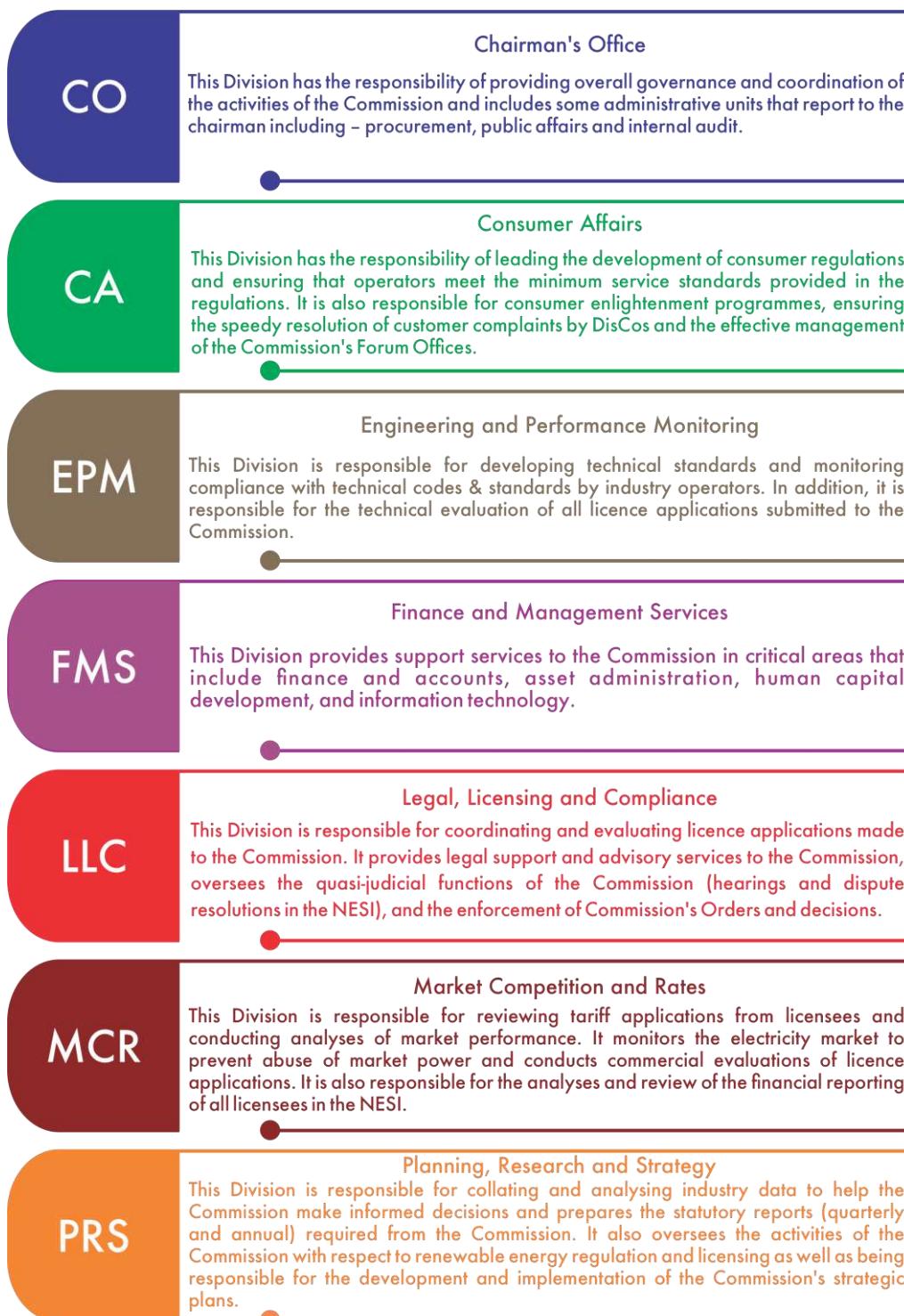
3.3 Highlights of the Commission's activities in 2023





3.1 Structure of the Commission

The Commission maintained the same core organisational structure as of 2022 with seven (7) divisions –





As part of its consistent efforts to improve the operational efficiency of the Commission, some intra-divisional changes were approved by the Commission; three (3) new units were created and three (3) units were collapsed into other functions within the Commission thereby maintaining the total number of units at twenty-four (24).

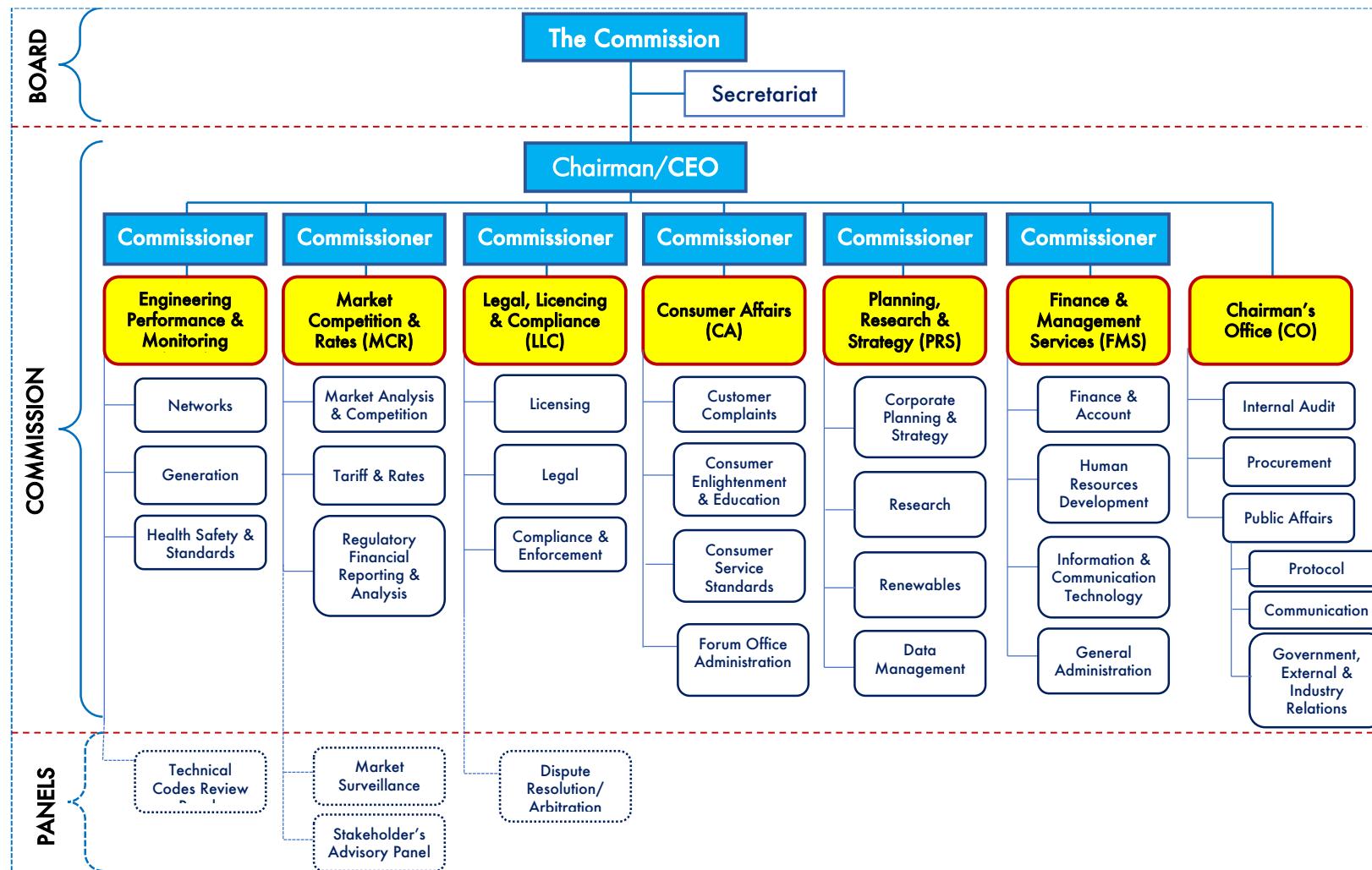
This structure is expected to enhance the adequate flow of responsibility and authority along functional lines and staffing with professionally qualified personnel with the requisite skills and experiences to carry out their functions appropriately.

The current organisational structure of the Commission is represented in Figure 2. Each unit is tasked with unique roles and responsibilities that culminate into divisional functions to drive the actualisation of the Commission's goals.





Figure 2: Structure of the Commission as of December 2023





NERC
Strategic Goals
2021-2023





3.3 Highlights of the Commission's activities in 2023

At all times, the Commission's activities are guided by its strategic goals as well as overarching government policy and macroeconomic trends. To this end, highlights of some of the Commission's activities for the year 2023 are summarised below -

A. External stakeholder engagement: The Commission is committed to ensuring that stakeholders of the NESI are kept abreast of key initiatives of the Commission as well as performance standards for licensees in the NESI. In 2023, the Commission undertook targeted campaigns through traditional and social media channels covering pertinent industry issues including capping of estimated bills, power sector recovery program, metering, health & safety as well as consumer rights and obligations. The Commission also engaged power sector policymakers and relevant civil society organisations in capacity development. Key events held during the year include:

- i. Biannual Health & Safety licensees managers meeting
- ii. Quarterly NESI meetings
- iii. Stakeholder workshop on the constitution amendment and new Electricity Act 2023
- iv. Capacity building workshop with the staff of FCCPC and NOA
- v. Peer review meetings with regulatory compliance officers of licensees
- vi. Town hall meetings/Customer complaint resolution meetings across different states in the country
- vii. Radio jingles and social media campaigns

B. Upholding customer care standards: In 2023, the Commission launched several critical activities towards the enforcement of customer care standards, these include:





- i. Issuance of the Customer Protection Regulation (NERC-R-001-2023). Some of the key highlights of this regulation include –
 - o The definition of customer complaints has been revised to include any expression of dissatisfaction with a DisCo's services or actions
 - o The period allowed for DisCos to handle customer complaints has been shortened from 3 weeks to 2 weeks
 - o The composition of NERC forum members has been revised to conform with the provisions of the Federal Competition and Consumer Protection Act 2019
 - o Introduction of new connection options including overhead and underground networks of different phases, extra service for distant locations, and high-tension supply links
 - o Improvement and updates to consumer service standards in the NESI to ensure that DisCos are held accountable for meeting the needs and resolving issues faced by consumers on time
- ii. Launch of the NESI call centre to provide a centralised portal for customers to pass complaints directly to their service providers and provide the Commission with near-real-time monitoring of customer complaint resolution by DisCos.
- iii. The Commission also launched its Power Outage Reporting System (PORS), a mobile application for real-time reporting of electricity outages by consumers.
- iv. The Commission opened an additional Forum Office in Ado Ekiti on 29 September 2023 to enhance the timely resolution of customer complaints that were not satisfactorily resolved at the DisCo customer complaints units.





- v. The Commission facilitated nine (9) compensation meetings between licensees and victims of accidents recorded in 2023
- vi. The Commission issued the Order on compensation for SBT service failure (NERC/2023/003). A key highlight of the Order is that it provides for customers to be compensated in instances of service failure where the service level on a feeder fails to meet 90% of the committed service levels. Prepaid customers shall be compensated with energy units while postpaid customers shall be billed based on the actual service experienced during the period.

C. Improving health/safety and technical robustness of the grid system: Some of the key activities implemented under this scheme include –

- i. Establishment of a comprehensive scope for Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS)
- ii. Conduction of technical studies on the integration of Variable Renewable Energy (VRE) into the national grid.
- iii. Review of operating codes (Health & Safety Codes, Metering Code) & NESIS Regulations
- iv. Review of TCN's Performance Improvement Plan

Other key achievements during the year include:

- o The study of harmonics and its effects on ATC&C losses, power quality and system reliability
- o The development of operational guidelines for Transmission System Operator (TSO) and Distribution System Operator (DSO)

D. Enhanced transparency and stakeholder involvement in tariff reviews: Pursuant to the provisions of the EA 2023 and NERC Regulations on the



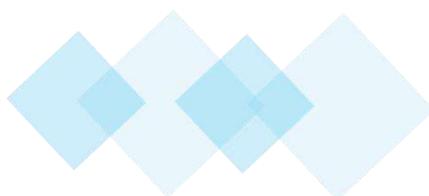
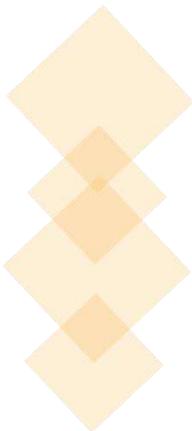


Procedure of Electricity Tariff Reviews in the NESI 2014, in evaluating the tariff review applications made by DisCos, the Commission introduced the rate-case hearings. This is consistent with international best practice in rate-setting and provides a platform for customers, customer advocacy groups and intervenors (industry experts and representatives of established organisations related to the power sector) to interrogate the submissions made by the DisCos in support of their applications. The Commission completed the review of applications by DisCos for extraordinary tariff review and conducted rate case hearings in July 2023.





Chapter Four: Regulation, Licensing & Compliance





- 4.1 Regulations, Orders and Guidelines**
- 4.2 Regulations**
- 4.3 Orders**
- 4.4 Licensing**
- 4.5 Permits and Authorisations**
- 4.6 Compliance Monitoring and Enforcement**
- 4.7 Alternative Dispute Resolution among market participants**





4.1 Regulations, Orders and Guidelines

Section 34 of the Electricity Act 2023 (EA 2023, the Act) provides that the Commission is empowered to “licence and regulate persons engaged in the generation, transmission, system operation, distribution, supply and trading of electricity” in the NESI. In exercising the powers conferred on it by the Electricity Act 2023, the Commission primarily engages with participants in the Nigerian Electricity Supply Industry (NESI) through selected regulatory instruments as prescribed by law. The regulatory instruments utilised by the Commission include –

- A. **Regulations:** Regulations are detailed legal rules, and bye-laws formulated by the Commission pursuant to sections 46(2), 64, 215 and 226 of the Electricity Act, to govern and conduct operations within the electricity sector, ensure adherence to statutory requirements, and give effect to the implementation of the Act.
- B. **Orders:** Orders are authoritative commands, legally binding instructions, and directions issued by the Commission pursuant to sections 47, 64 and 215 of the Electricity Act, requiring licensees to perform certain actions, cease, desist from specific activities, or act in a particular way.
- C. **Licences:** Licences are authorisations granted by the Commission pursuant to sections 34(2)(d), 63(1), 64, and 215 of the Electricity Act, that allow entities to operate in activities such as the generation, transmission, trading and distribution of electricity under specified terms and conditions.
- D. **Permits:** Permits are authorisations issued by the Commission pursuant to sections 63(2), 64 and 215 of the Electricity Act, for specific activities, such as the generation of electricity for own use or authorisation to participate as a meter service provider.





- E. Guidelines: Guidelines are advisory documents, instructions, or rules issued by the Commission pursuant to sections 64 and 215 of the Electricity Act, that recommend practices and standards to sector participants, and licensees on the procedure or process for a thing or an activity to be done or carried out to achieve best practices and maintain consistency in operations.
- F. Directives: Directives are enforceable orders issued by the Commission pursuant to sections 64 and 215 of the Electricity Act, to address specific issues, implement policies, or ensure compliance with regulatory objectives.
- G. Rules: Rules are binding principles, instructions, and directives issued by the Commission pursuant to sections 10, 64, and 215 of the Electricity Act, that outline mandatory procedures, requirements, and standards for sector participants and or licensees which must be adhered to.
- H. Codes: Codes are comprehensive sets of rules, principles, guidelines and technical standards issued or approved by the Commission pursuant to sections 10, 34(2)(b), 64 and 215 of the Electricity Act, governing various aspects of the electricity sector, including safety, reliability, and performance, ensuring uniformity and high standards in technical and operational practices across the sector.

The Commission issues regulatory instruments to market participants as the need arises to ensure their efficient performance and sustain the thrust of reforms in the NESI taking due cognisance of the changes in the macroeconomic environment and the prevalent government policy.

4.2 Regulations

Section 227 of the Act empowers the Commission to "make regulations prescribing all matters which by this Act are required or permitted to be prescribed or which, in the opinion of the Commission, are necessary or convenient to be prescribed for





carrying out or giving effect to this Act". Regulations are a set of rules that the Commission may issue periodically to optimise the performance of licensees to give effect to the object of the EA 2023. The summary of the two (2) regulations issued by the Commission in 2023 is contained below;

- A. Customer Protection Regulations (CPR)
- B. Mini-grid Regulations

A. NERC-R-001-2023: The Customer Protection Regulations (CPR) was issued in March 2023 with the following objectives:

- i. The consolidation of existing regulatory instruments of the Commission on the protection of customers in the NESI into one regulatory instrument.
- ii. The reinforcement of frameworks for the protection of end-use customers in the NESI.
- iii. The promotion of electricity access in the NESI.
- iv. The alignment and updating of customer service standards in the NESI to conform with international best practices.
- v. The protection of the rights of end-use customers of distribution licensees by specifying the minimum standards of service delivery.

The CPR aligns the Commission's customer service standards with international best practices and abrogates five (5) other customer-related regulatory instruments. The abrogated regulatory instruments are:

- i. Nigerian Electricity Regulatory Commission Customer Complaints Handling Standards and Procedures.
- ii. Nigerian Electricity Regulatory Commission Meter Reading, Billing, Cash Collections and Credit Management for Electricity Supply Regulations.





- iii. Nigerian Electricity Regulatory Commission Connection and Disconnection Procedures for Electricity Services.
- iv. Nigerian Electricity Regulatory Commission Customer Service Standards of Performance for Distribution Companies.
- v. Nigerian Electricity Regulatory Commission Methodology for Determining Connection Charges for Electricity Supply Regulations.

B. NERC-R-117-2023: The Mini-grid Regulation was issued in December 2023 as a replacement of the Mini-grid Regulations of 2016 following a series of public and stakeholder consultations. In addition to stakeholder inputs, the new Regulation incorporates the changes and new provisions of the EA 2023. The major updates contained in the new Regulation include:

- i. The incorporation of portfolio applications, which allows developers to register multiple sites in a single submission.
- ii. Revision of the compensation mechanism for isolated mini-grid developers when a DisCo extends its network to the mini-grid site.
- iii. Refinement and redefinition of the Monitoring and Evaluation (M&E) framework, enforcement and reporting procedures.
- iv. Provision of a maximum of 15 business days allowance for DisCos to respond to developers' applications for information on a site. This is to forestall delays in application processing by DisCos.
- v. Definition of new caps for technical and non-technical losses for the determination of tariff for mini-grid projects using the MYTO methodology.

4.3 Orders

Orders are a series of directions/instructions that the Commission issues to licensees to perform certain actions or desist from acting in a particular manner. Orders issued





to licensees are situational and immediate in their impact and compliance. The Commission issued sixteen (16) Orders to licensees in 2023. The summary of the Orders issued by the Commission in 2023 is provided below:

A. NERC/001-012 /2023 – Orders on Reimbursement of Meter Costs for Meters procured under the Meter Asset Provider and National Mass Metering Frameworks (11 Orders issued to 11 DisCos). The objective of the Orders is to ensure the refund of the cost of meters to all customers across the DisCos who paid for meters under the MAP framework since its inception in 2018, through monthly energy credits.

The Order sought to ensure fairness, transparency and accountability of the metering process as it provides a fair mechanism for the reimbursement of meter costs to customers under the frameworks. Based on the Order, the cost of the prepaid meter paid by the customers shall be amortised over 120 equal instalments and reimbursed through energy credits computed based on the prevailing tariff at the time of vending. Where a customer does not vend in a given month or months, the DisCos shall at the point of the next vending, refund the accumulated energy credits due to the customers for the period not vended. Where a postpaid customer purchases a meter, the reimbursement by the DisCo shall be in the form of deductions of fixed amounts from the monthly bill of the customer until the refund is complete.

B. NERC/2023/002 – Order on the Mandatory Filing of Annual OpEx, Capital Investment Plans and Outcomes of Procurements Conducted by the TCN which took effect on 1st July 2023. The objectives of the Order include:

- i. Ensure that capital investment projects undertaken in the NESI are fully aligned with the Performance Improvement Plan (PIPs) of the TCN and DisCos with no stranded dependencies for providing service.





- ii. Ensure optimal allocation of limited resources available for capital expenditure in TCN's procurement process in conformity with global best practices for regulated utilities.
- iii. Ensure optimal and prudent expenditure of limited resources on operating expenditure by TCN.
- iv. Ensure prudence and value for money for all network development projects by TCN and DisCos.

The Order mandates that all capital expenditure by the TCN above ₦5 billion or a revision of existing contract sums above 15% shall be reviewed by the Commission. Based on the Order, the TCN is also required to file a proposed annual investment plan and revenue requirements/budgets/estimates with the Commission by 31st October of the preceding financial year for approval.

[**C. NERC/2023/003 – Order on Migration of Customers and Compensation for Service Failure under Service-Based Tariff Framework**](#) which took effect on 1st June 2023. The objectives of the Order include:

- i. Provide processes/procedures for migrating customers across service bands in alignment with the quality of service provided to customers by DisCos.
- ii. Provide a framework for customer compensation and feeder service band adjustment to account for DisCos' failure to deliver on the Service Based Tariff (SBT) committed service levels.

A key highlight of the Order is that it provides for customers to be compensated in instances of service failure where the service level on a feeder has failed to meet 90% of the committed service levels. Prepaid customers shall be compensated with





energy units while postpaid customers shall be billed based on the actual service experienced during the period.

The Order further stipulates a revised procedure to DisCos for migrating customers between tariff bands (summary below):

- i. The DisCo shall file an application with the Commission for the proposed migration supported with key information including the name and location of the feeder, metering status of the feeder, quality of supply from the feeder covering a minimum period of two (2) weeks amongst other key information.
- ii. The Commission shall review the application and issue approvals for satisfactory applications within ten (10) working days of receipt of the migration request.
- iii. DisCos shall ensure that all affected customers receive notices of feeder migration at least five (5) days before implementation of the approved migration. The communication by DisCos must indicate the name of the feeder, the affected areas, and the current and proposed tariff/service bands.
- iv. The primary channel for notification of customers to be migrated shall be bulk SMS. DisCos shall also utilise their websites and other possible channels in addition to the bulk SMS for communication and continuous engagements with the affected customers.
- v. Implementation of the approved migration shall take effect from the 1st day of the next billing month.

D. NERC/2023/005 – Order on Migration of Token Identifier of Standard Transfer Specification Meters from Key Revision 1 to Key Revision 2. The objectives of the Order are to:





- i. Ensure that all distribution licensees in the NESI migrate the Token Identifier (TID) of all Standard Transfer Specification (STS) meters in their network from key revision 1 to key revision 2 before 24th November 2024.
- ii. To ensure that customer vending is not constrained after 24th November 2024 on account of the inability to generate tokens.
- iii. Ensure that the distribution licensees develop clear and coherent communication strategies for the enlightenment of end-use customers and the general public on the migration of the TID of STS meters from key revision 1 to key revision 2.

The STS describes a secure message system for carrying information between a point-of-sale and a meter currently being used in the Nigerian electricity metering and payment systems. The STS Association (STSA) maintains the STS technology and has mandated the migration of TID of all STS-compliant meters in the network of DisCos from key revision 1 to key revision 2 by 24th November 2024. This upgrade is necessary to prevent customer apathy from inability to vend, revenue loss to DisCos and risk of meter vandalism/bypass.

E. NERC/2023/006 – Order on Deployment of Customer Engagement Platforms which took effect on 1st of September 2023. The objectives of the Order are to:

- i. Guide the minimum standards for the deployment of call centres by DisCos pursuant to section 119 of the EA 2023.
- ii. Standardise call centres deployed by DisCos for seamless integration with the Commission's call centre.

The NESI call centre is currently functional and provides an additional avenue for monitoring DisCos' service quality and delivery to customers.





F. NERC/2023/020 – Order on the Price Review of MAP Meters which took effect on 6th September 2023. The objectives of this Order are to:

- i. Ensure the fair and reasonable pricing of meters to both MAPs and end-user customers.
- ii. Ensure MAP's ability to recover reasonable costs associated with meter procurement and maintenance while ensuring that their pricing structure allows for a viable return on investment.
- iii. Evaluate the affordability of meter services for customers, aiming to prevent excessive pricing that could burden end-users.
- iv. Ensure that MAPs can provide meters to end-use customers in the prevailing economic realities.

The Order was issued following significant changes in macroeconomic indicators such as inflation and changes in foreign exchange rates. The Commission, through this Order, approved the review of MAP-issued meter prices from ₦58,661.69 to ₦81,975.16 and ₦109,684.36 to ₦143,836.10 for single and three-phased 4G meters respectively.

4.4 Licensing

Section 63 (1) of the EA 2023 states that “without prejudice to the right of the States of the Federation to make laws and establish markets for the generation, transmission, system operation, distribution and supply of electricity within their respective territories, no person, except in accordance with a licence issued pursuant to the provisions of this Act or deemed to have been issued under section 213 (b) or as provided under this Act, shall construct, own, operate an undertaking other than an undertaking specified under subsection (2) of this section, or in any way engage in the business of: ”





- A. Electricity generation, excluding captive generation
- B. Electricity transmission
- C. Electricity distribution
- D. Electricity supply
- E. Electricity trading
- F. System operation

The Commission as empowered by the EA 2023 regulates activities in the NESI and grants licences for electricity generation, transmission, distribution, trading and system operations in the NESI. The various types of licences granted by the Commission include:

A. Generation Licence: This type of licence grants the holder the right to construct, own, operate and maintain a generation station for the generation and supply of electricity. The holder of a generation licence can sell electricity and ancillary services to approved licensees including electricity trading companies, distribution companies, eligible customers, single buyers etc. There are three (3) types of generation licences:

- i. On-grid electricity licence: This licence allows the holder to generate electricity and connect to the national grid for distribution. The holder enters into a connection agreement with the Transmission Company of Nigeria and its off-taker(s).
- ii. Embedded generation licence: This licence grants the licensee the right to electricity generation and evacuation through an existing distribution facility system or an independent distribution licensee. The embedded generator licensee enters into a power purchase agreement with an electricity distribution licensee (DisCo), or the operator of an independent electricity distribution network.





- iii. Off-grid electricity generation licence: This authorises a licensee to generate and sell power to a single buyer (or community) without connection to the national grid.

As of December 2023, the Commission has issued licences to thirty-one (31) grid-connected power plants in operation with a total nameplate capacity of 14,177MW. Four (4) out of the thirty-one (31) power plants are hydropower plants while the remaining are gas-fired thermal plants. Further details about the licenced grid-connected power plants are contained in Table 5.





Table 5: Details of licenced grid-connected Power Plant

SN	Power Plant	Location	Ownership	Turbine Type	Installed Capacity	Fuel Type
1	AES Barge	Lagos	IPP	Simple cycle gas turbine	270MW	Gas
2	Aba Power	Abia	IPP	Simple cycle gas turbine	140MW	Gas
3	Afam IV-V	Rivers	Privatised	Simple cycle gas turbine	726MW	Gas
4	Afam VI	Rivers	IPP	Combined cycle gas turbine	624MW	Gas
5	Alaoji	Abia	NIPP	Combined cycle gas turbine	1,074MW	Gas
6	Azura	Benin	IPP	Simple cycle gas turbine	450MW	Gas
7	Odukpani	Cross River	NIPP	Simple cycle gas turbine	561MW	Gas
8	Egbin	Lagos	Privatised	Gas-fired steam turbine	1,320MW	Gas
9	Geregu I	Kogi	Privatised	Simple cycle gas turbine	414MW	Gas
10	Geregu II	Kogi	NIPP	Simple cycle gas turbine	434MW	Gas
11	Ibom	Akwa Ibom	IPP	Simple cycle gas turbine	190MW	Gas
12	Ihovbor	Edo	NIPP	Simple cycle gas turbine	450MW	Gas
13	Okpai	Delta	IPP	Combined cycle gas turbine	480MW	Gas
14	Olorunsogo	Ogun	Privatised	Simple cycle gas turbine	336MW	Gas
15	Olorunsogo II	Ogun	NIPP	Combined cycle gas turbine	675MW	Gas
16	Omoku	Rivers	IPP	Simple cycle gas turbine	150MW	Gas
17	Gbarain	Rivers	NIPP	Simple cycle gas turbine	225MW	Gas
18	Omotosho I	Ondo	Privatised	Simple cycle gas turbine	336MW	Gas
19	Omotosho II	Ondo	NIPP	Simple cycle gas turbine	450MW	Gas
20	Sapele ST	Delta	Privatised	Gas-fired steam turbine	1,020MW	Gas
21	Sapele GT	Delta	NIPP	Simple cycle gas turbine	450MW	Gas
22	Delta (Ughelli)	Delta	Privatised	Simple cycle gas turbine	900MW	Gas
23	Trans-Amadi	Rivers	IPP	Simple cycle gas turbine	136MW	Gas
24	Rivers IPP	Rivers	IPP	Simple cycle gas turbine	180MW	Gas
25	Paras	Ogun	IPP	Simple cycle gas turbine	96MW	Gas
26	Taopex	Lagos	IPP	Gas-fired steam turbine	60MW	Gas
27	MEPP	Borno	Privatised	Simple cycle gas turbine	50MW	Gas
28	Kainji	Niger	Concession	Reservoir	800MW	Hydro
29	Jebba	Niger	Concession	Reservoir	540MW	Hydro
30	Shiroro	Niger	Concession	Reservoir	600MW	Hydro
31	Dadin Kowa	Gombe	Concession	Reservoir	40MW	Hydro

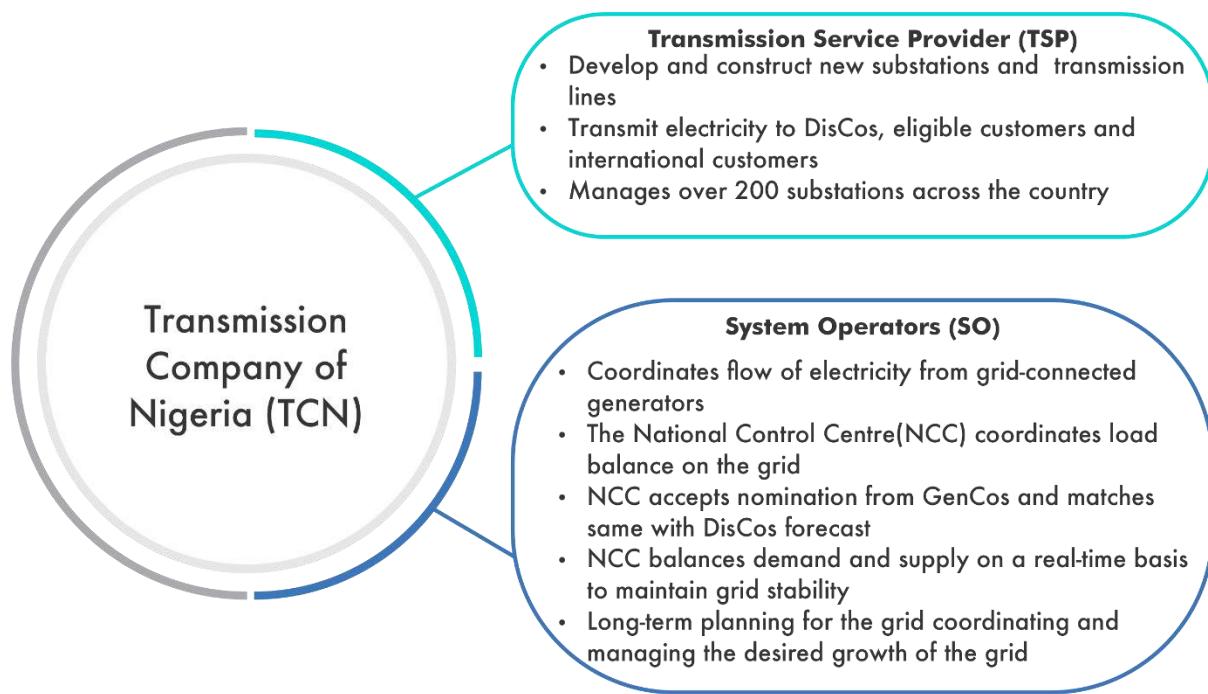
*NIPP-Nigerian Integrated Power Projects, IPP-Independent Power Producers





B. Transmission Licence: This licence is granted for the construction, operation and maintenance of transmission systems within Nigeria, or that connects Nigeria with a neighbouring country at a voltage of 132kV or above. The Transmission Company of Nigeria (TCN) has the responsibility of transporting energy from power plants to DisCos and International customers and currently holds two licences; Transmission Service Provider (TSP) and System Operator (SO). The TSP owns and maintains the transmission infrastructure.

C. System Operator: The SO is responsible for maintaining system stability, load balance, load dispatch and undertaking market operations responsibilities.



D. Distribution Licence: The distribution licence authorises the holder to construct, operate and maintain a network operable at 33kV or lower to distribute electricity from grid supply points to the point of delivery to consumers or eligible customers. The licence authorises the holder to carry out installation, maintenance and reading





of electricity meters as well as billing and collection of bills. The details of distribution licensees as of December 2023 are given in Table 6.

Table 6: Distribution Licensees (DisCos) in the NESI

S/N	DisCo	Franchise area (State/LG ⁶)
1	Aba Power (APLE)	Aba
2	Abuja (AEDC)	FCT, Niger, Kogi, Nasarawa
3	Benin (BEDC)	Edo, Delta, Ondo, Ekiti (<i>Ado-Ekiti, Ikogosi Ekiti, Ipol-e-Iloro Ekiti</i>)
4	Eko (EKEDP)	Lagos (<i>Apapa, Festac, Ijora, Lekki, Ibeju, Ojo, Orile, Mushin, Victoria Island, Ikoyi</i>)
5	Enugu (EEDC)	Enugu, Abia, Imo, Anambra, Ebonyi
6	Ibadan (IBEDC)	Oyo, Ogun, Osun, Kwara, parts of Ekiti
7	Ikeja (IE)	Lagos (<i>Abule-Egba, Akowonjo, Ikeja, Ikorodu, Oshodi, Amuwo Odofin, Igando, Magodo, Ajao, Ijegun, Oke-afa, Shomolu</i>)
8	Jos (JED)	Plateau, Bauchi, Benue, Gombe
9	Kaduna (KAEDC)	Kaduna, Sokoto, Kebbi, Zamfara
10	Kano (KEDCO)	Kano, Jigawa, Katsina
11	Port Harcourt (PHED)	Rivers, Cross River, Bayelsa, Akwa Ibom
12	Yola (YEDC)	Yola, Adamawa, Borno, Taraba, Yobe

E. Trading Licence: This licence grants the holder the authority to purchase, resell and trade electricity and ancillary services from independent power producers and generation companies. All contracts for the purchase of electrical power and ancillary services by the holder of the trading licence must be concluded in an open, transparent and competitive manner and in accordance with the procedure established by the Commission. In 2023, the Commission issued licences to seven (7) electricity trading companies listed below. This is pursuant to the Commission's commitment to transition the Nigerian electricity market into bilateral wholesale energy trading in compliance with the provisions of the EA 2023.

- i. Commercio Electricity Exchange Limited
- ii. Ecof Nigeria Limited

⁶ Local governments – LGs are written in italics





- iii. Electric Utility Nigeria Limited
- iv. Onction Services Limited
- v. Ember Power Limited
- vi. Adefolorunsho Energy Network Limited
- vii. Midbelt Energy Company Limited

4.5 Permits and Certifications

For activities which the EA 2023 does not explicitly grant the Commission licencing powers but which still require regulatory oversight, in line with international best practices, NERC issues permits or certificates to eligible companies/institutions to participate in those activities. Permits are authorisations that the Commission issues to entities that perform a regulatory activity with fewer licensing requirements while certificates are issued by the Commission to entities certified to have the skilled manpower to carry out specific activities in the NESI. The key activities for which the Commission issues permits or certificates are:

- A. Captive Power Generation: The Commission issues captive power generation permits to entities that aim to own and maintain power plants for generating power for their use and not for sale to a third party.
- B. Mini-grid: The Commission issues permits to mini-grid developers for the construction, operation, maintenance, and where applicable ownership of mini-grids with distribution capacity above 100kW and generation capacity up to 1MW while a registration certificate is issued to a mini-grid developer for one or more systems with a distribution capacity below 100kW.
- C. Meter Asset Provider (MAP): A MAP is an entity that is granted a permit by the Commission to provide metering services with roles that may include meter financing, procurement, supply, installation, maintenance, and replacement.





D. Meter Service Provider (MSP): An MSP is an entity certified by the Commission as a manufacturer, supplier, vendor, or installer of electric energy meters and/or metering systems.

The summary of licences, permits and certifications issued by the Commission in 2023 is contained in Table 7 and full details of the licensees are contained in Appendix B.1 – B.4.

Table 7: Licenses, Permits and Certifications Issued by the Commission in 2023

SN	License/Permit	Number
1	On-grid generation	1
2	Off-grid generation	8
3	IEDN	7
4	Trading Licence	5
5	Embedded generation	3
6	Captive power	15
7	Mini-grid registration	28
8	Mini-grid permits	18
9	Meter service providers	24
10	MAP permit	9
Total		118

4.6 Compliance Monitoring and Enforcement

Section 34(2)(f) of the EA 2023 specifies the powers of the Commission to “monitor the operation of the electricity markets and sanction licensees in deserving circumstances in accordance with the provisions of this Act and other subsidiary legislation”. Furthermore, Section 64(1) of the Act states that “A licensee shall comply with the provisions of its licence, regulations, codes, orders and other requirements issued by the Commission from time to time”.

Pursuant to these provisions, the Commission carried out enforcement actions against licensees during the year for violations of rules and infractions against other





instruments in the NESI. The primary enforcement mechanisms used by the Commission include:

- A. Notice to Commence Enforcement (NICE): this is a formal communication to a licensee informing them of the Commission's intention to commence enforcement proceedings arising from their non-compliance with instructions issued by the Commission. The issuance of NICE is pursuant to the provisions of section 76(1) of the EA 2023.
- B. Rectification Directives: an Order or instruction to correct a mistake, submission or omission that ought to be done.
- C. Penalties: refers to a sanction or punishment imposed for violating a law, contract, rule, or regulation.
- D. Administrative fines: These are financial sanctions imposed by the Commission, to deter undesirable behaviour and encourage compliance.

The summary of the various enforcement actions by the Commission in 2023 is contained in Table 8. As part of the effort to enforce compliance with all its regulatory instruments, codes and standards in the NESI, the Commission held a peer review meeting with the compliance and regulatory officers of licensees during the year to discuss the reporting obligations of licensees as well as health and safety matters. During the meeting, licensees' scorecards on compliance with health and safety standards, forum office decisions, and key performance indicators were discussed while highlighting areas of improvement.





Table 8: Summary of enforcement actions carried out by the Commission in 2023

S/N	Rectification Directive/(NICE)	Licensee	Date Issued	Deadline
<i>Rectification Directives</i>				
1	Failure to provide the World Bank's consultant with relevant information on their generator units for solar power integration studies.	16 On-grid GenCos	3 July 2023	14 July 2023
2	Non-compliance to the Commission's directive to provide NBET with active and valid Bank Guarantees.	Abuja, Benin, Kaduna and Yola DisCos	19 July 2023	3 August 2023
3	Non-compliance with the Order on Performance Monitoring Framework	All DisCos	11 August 2023	18 August 2023
4	Report on electrocution caused by line snap	Benin DisCo	11 August 2023	25 August 2023
5	Failure to comply with two decisions of the Asaba Forum Office	Benin DisCo	11 August 2023	18 August 2023
6	Failure to comply with the decision of the Umuahia Forum Office	Enugu DisCo	11 August 2023	18 August 2023
7	Failure to comply with the decision of the Umuahia Forum Office	Enugu DisCo	21 August 2023	30 August 2023
8	Non-compliance with paragraphs D & F of the Order of the Commission requiring DisCos to file clear communication and public enlightenment plans on the migration of TID as well as roadmaps/project plans by 31 August 2023.	Eko, Enugu, Kaduna, Kano and Ikeja DisCos	5 September 2023	12 September 2023
9	Non-compliance with three (3) rulings of the Ikeja Forum Office.	Ikeja DisCo	29 November 2023	12 December 2023
10	Non-compliance with the Forum and Commission's decisions	Enugu DisCo	16 October 2023	30 October 2023
11	Non-compliance with the Commission's ruling in Appeal No: ANFO/NERC/423/2018	Enugu DisCo	16 October 2023	30 October 2023
12	Non-compliance with the Commission's ruling in Appeal No: ANFO/2022/08/B975	Abuja DisCo	18 October 2023	31 October 2023
<i>Notice of Intention to Commence Enforcement Action (NICE)</i>				
13	Non-compliance with the Commission's directive to refund all customers affected by wrongful application of multiplier factor to bills.	Yola DisCo	23 June 2023	14 days
14	Failure to comply with the request for information on all penalties for unauthorised access assessed and collected from end-use customers for January 2022 to December 2022, procedures for the assessment and collection as well as details of accounts into which penalties are deposited along with certified bank statements.	Enugu, Kaduna, Kano, Jos, Yola, and Benin DisCos	1 August 2023	14 August 2023
15	Failure to provide a detailed novation plan as requested by the Commission	NBET	1 August 2023	14 August 2023
16	Non-compliance with rectification directive issued following failure to file details of its information system infrastructure with the Commission	Enugu DisCo	7 July 2023	21 July 2023





A cross-section of participants at the Compliance Peer Review training in Lagos, November 2023

4.7 Alternative Dispute Resolution among market participants

Alternative Dispute Resolution (ADR) refers to the settlement process instituted by the Commission for the resolution of disputes that may arise among market participants. Section 42.3 of the Market Rule empowers the Commission to appoint a Dispute Resolution Counsellor (DRC) and constitute a Dispute Resolution Panel (DRP).

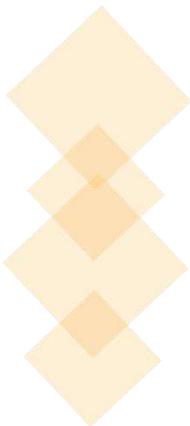
Section 42.3.8 of the Market Rule stipulates that the DRP shall consist initially of at least three members and, upon the commencement of the Medium-Term Market, shall consist of at least ten (10) qualified persons, each of whom shall be appointed by the Commission.

Pursuant to the Market Rules, the Commission has constituted a 10-person DRP and appointed a DRC responsible for arbitrating or otherwise resolving disputes between market participants. The DRP did not handle any disputes among industry stakeholders in 2023.



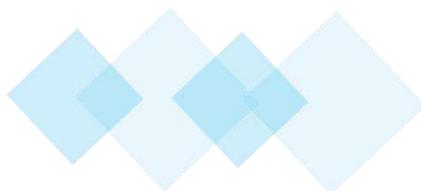


Chapter Five: Consumer Affairs and Stakeholder Engagements





- 5.1 Consumer Affairs**
- 5.2 Customer Education**
- 5.3 Customer Complaints**
- 5.4 Stakeholder Engagements**





5.1 Consumer Affairs

The Commission has developed various initiatives to ensure that electricity customers are aware of their rights and obligations and that customer care standards by licensees are according to international best practices. The main avenues of interface between the Commission and customers are:

- A. Customer Education/Town Hall meetings
- B. Customer complaints reporting channels

5.1.1 Consumer Education - Townhall Meetings

The town hall/customer complaints resolution meetings are used to enlighten customers on the Commission's activities and regulatory instruments, customer rights and obligations, and to facilitate swift resolution of complaints. These fora also provide avenues for the Commission to obtain feedback from customers which serve as input to the Commission in its decision-making process.

In 2023, five (5) town hall/customer complaints resolution meetings were held at different locations across the country (Table 9) in collaboration with other government agencies including the Federal Competition and Consumer Protection Commission (FCCPC) and National Orientation Agency (NOA). During the meetings, discussions centred around several critical issues including customer rights and obligations, Service Based Tariff (SBT), metering gaps, estimated billing, energy caps, customer redress mechanism etc.



Table 9: Town Hall Meetings held in 2023

S/N	Date	DisCo	Location
1	18 – 20 April 2023	Jos	Jos
2	09 -11 May 2023	Yola	Adamawa
3	23 – 25 May 2023	Benin	Asaba, Delta State
4	07 – 09 November 2023	Jos	Makurdi, Benue State
5	22 – 23 November 2023	Ikeja	Ikeja, Lagos State



A cross-section of participants at the town hall/complaints resolution meeting held in Jos, April 2023



A cross-section of participants during the roadshow held to sensitise people about the town hall meeting held in Adamawa, May 2023



A cross-section of participants at the town hall meeting held in Delta, May 2023



A cross-section of participants at the town hall meeting held in Makurdi, Benue State - November 2023



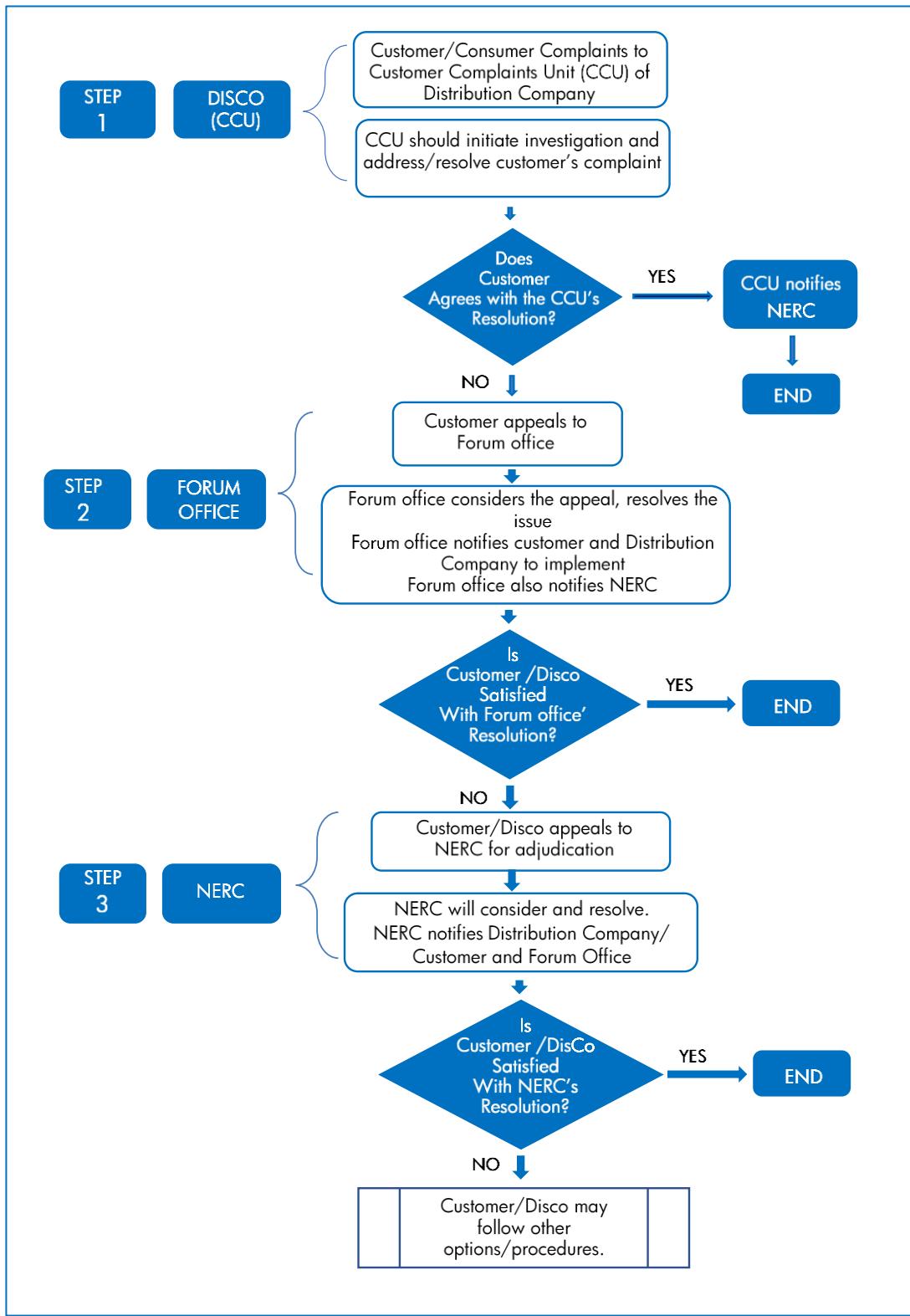
A cross-section of participants at the town hall meeting held in Ikeja, Lagos State November 2023



5.1.2 Customer Complaints

Pursuant to section 34(2)(c) of the Electricity Act 2023 which empowers the Commission to “establish appropriate consumer rights and obligations regarding the provision and use of electricity services” in the NESI, the Commission issued the Customer Protection Regulation (CPR) 2023 which adequately highlights the standards and procedures for handling customer complaints in the NESI. Furthermore, the Regulation provides a clear process flow for efficient customer complaint resolution in the NESI (Figure 3).







5.1.3 Complaints Reporting Channels

Pursuant to the provisions of section 119(1)(c) of the EA 2023 which states that “the Commission shall develop in consultation with licensees, the customer complaints handling standard and procedure”, the Commission provides various channels for customers to lodge complaints against their service providers. The primary channels available for customers to lodge complaints in the NESI include:

- A. NERC Customer Complaint Unit (NERC-CCU): This is a unit at the Consumer Affairs Division of the Commission dedicated to the receipt and resolution of complaints received directly from customers. Customers can lodge complaints at the NERC CCU via emails, letters or phone calls (through the NESI Call Centre).

The Commission launched the NESI call centre (NECC) in 2023 as one of its initiatives geared towards improving customer experience in the NESI. The NECC provides a centralised portal for customers to pass complaints directly to their service providers. Being a centralised portal, it provides the Commission with near real-time visibility into the filing and resolution of customer complaints by the DisCos. Consequentially, this also allows the Commission to monitor the DisCos' compliance with customer service standards of the CPR 2023.

- B. DisCo Customer Complaint Unit (DisCo-CCU): The CPR 2023 mandates all DisCos to establish customer complaint units (CCU) across their franchise area dedicated to the receipt and resolution of complaints from customers. Complaints can be lodged with the DisCo via electronic means including phone calls, SMS, email, etc. Based on the CPR 2023, complaints received by DisCos are to be resolved no later than 15 days of receipt, except where it concerns meter accuracy and reconciliation of bills which should be resolved within a billing cycle of one month. DisCos submit monthly customer complaints reports which the Commission reviews to identify cases where





regulatory intervention is necessary. Any customer dissatisfied with the outcome of handling his/her complaint at a DisCo's CCU can refer such complaints to the appropriate NERC Forum Office at the expiration of the approved 30 days.

C. NERC Forum Offices: Forum offices serve as the "court of second instance" for customers not satisfied with the resolution of their complaints at the DisCo-CCU. As of 31 December 2023, the Commission had thirty-two (32) operational Forum Offices in thirty (30) states and the FCT, Abuja. The details including names, addresses and contacts of the Commission's Forum Offices are contained in Appendix C.4.

The Forum Office is managed by the forum secretariat while the hearings are conducted by five (5) forum panel members who are not staff of the Commission, as stipulated in the CPR 2023. The forum panels hear and resolve customer complaints in the state in which it is situated, if there is no Forum Office in a state, the Commission determines which neighbouring Forum Office will have jurisdiction over the customer complaints from the state. The composition of the forum panel is as follows:

- i. A legal practitioner with experience in alternative dispute resolution nominated by the Nigerian Bar Association (NBA).
- ii. A financial expert nominated by either the Manufacturers Association of Nigeria, Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA) or any other reputable organisation.
- iii. A qualified electrical engineer nominated by either the Council for Regulation of Engineering in Nigeria (COREN) or the Nigerian Society of Engineers (NSE).
- iv. A nominee of the Federal Competition and Consumer Protection Commission (FCCPC).





- v. A representative of an NGO based in the distribution company's operating area nominated by the Commission.
- D. **Power Outage Reporting System (PORS):** On 12 September 2023, the Commission launched the PORS, which is a mobile application designed for electricity customers to report outages in real-time. Once outages are reported on the app by electricity consumers, the relevant DisCo is notified to allow it to immediately commence necessary remedial actions to restore power to the affected customers. When supply is restored, the Customers on the feeder may also receive notification via the app and can confirm that supply has been restored.
- The PORS provides data for the Commission to evaluate the compliance of DisCos with their service obligations to various feeders under the Service Based Tariff; failure to deliver the required service shall trigger the payment of compensation to the customers by the DisCos in line with the Order on Migration of Customers and Compensation for Service Failure under the Service Based Tariff Framework ([NERC/2023/003](#)) issued in May 2023.



Stakeholders at the launch of the PORS app in Abuja, September 2023



5.1.4 Customer Complaints Received in 2023

This subsection provides a summary of the types and relative resolution rates of the different customer complaints across the various channels explained in section 5.1.3 above.

5.1.4.1 NERC CCU

Complaints are received through letters, emails and phone calls via the NESI call centre at the Commission's CCU. In 2023, 7,207 complaints were received at the Commission's CCU - Ikeja (3,752) and Eko (1,731) DisCos recorded the highest number of complaints by their customers accounting for 52.06% and 24.02% of the total respectively. Conversely, Kano DisCo (16) and APLE (19) had the lowest number of complaints corresponding to 0.22% and 0.26% respectively. Cumulatively, 5,067 were resolved corresponding to a 70.31% resolution rate.

The most common issues among the 7,207 complaints received were billing (37.67%), metering (32.84%), and service interruption (12.31%). The three (3) complaints categories cumulatively accounted for 82.82% of the total complaints in the year (Figure 4).



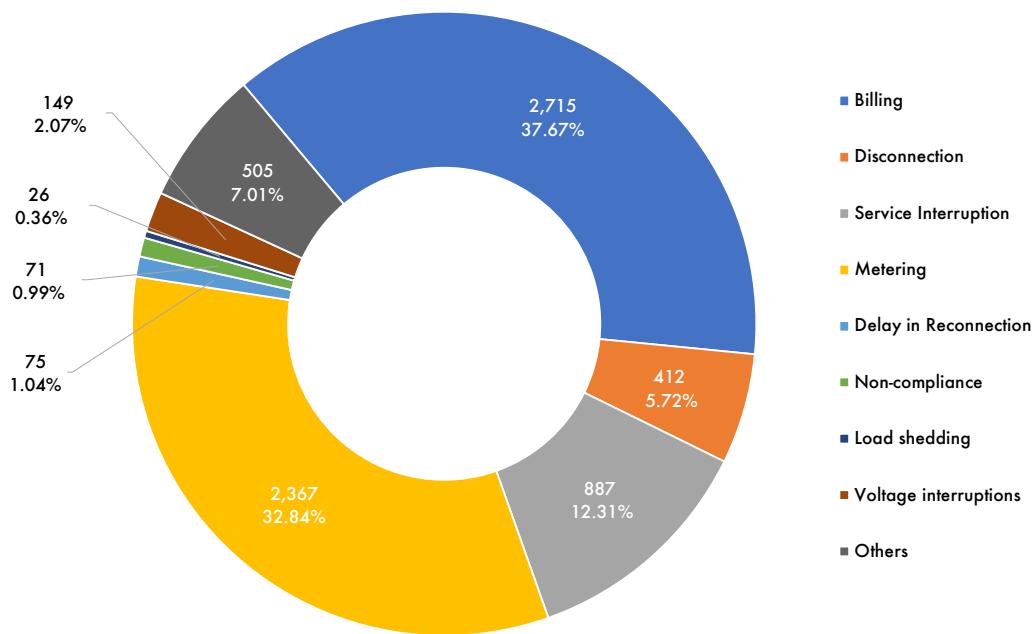


Figure 4: Category of Complaints Received at the Commission's CCU in 2023

5.1.4.2 DisCo-CCU

The total number of complaints received across all DisCos in 2023 was 1,220,245 - Ibadan and Port Harcourt DisCos received the highest complaints (207,216 and 205,054 representing 16.98% and 16.80% of total complaints respectively). In comparison, Aba and Yola DisCos had the lowest complaints (4,029 and 11,930 representing 0.33% and 0.98% of the total complaints respectively). Cumulatively, 1,156,553 were resolved yielding a resolution rate of 94.78%.

The most common issues among the complaints received by DisCos during the year were metering (53.09%), billing (16.30%), and service interruption (8.16%). These three (3) complaints categories cumulatively accounted for 77.55% of the total complaints in the year (Figure 5).

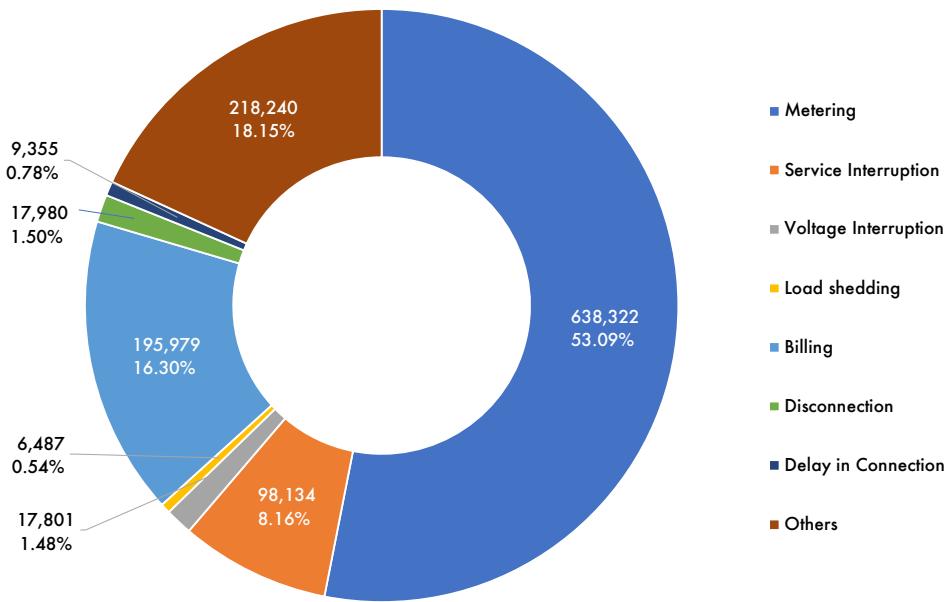


Figure 5: Category of Complaints Received by all DisCos in 2023

5.1.4.3 NERC Forum Offices

A summary of the appeals across the Forum Offices in 2023 is contained in Table 10. In total, the Forum Offices had 10,144 (6,387 new appeals and 3,757 pending appeals from 2022) active appeals through 2023. The Forum Office serving Ikeja (2,689) and Ibadan (2,562) DisCos received the highest number of appeals (corresponding to 26.51% and 25.26% of total appeals respectively) while Abuja (243) and Yola (248) DisCos received the fewest appeals corresponding to 2.40% and 2.44% of total appeals respectively.

Cumulatively, the Forum Offices had 359 sittings in 2023 and resolved 60.93% (6,181) of the total active appeals. The breakdown of the various categories of appeals received at the Forum Offices is presented in Figure 6. Billing was the most prevalent complaint within the year, accounting for 61.41% of the total. Complaints about metering and disconnection represented 23.90% and 5.28% of the appeals respectively.



Table 10: Appeals Handled by Forum Offices in 2023

Forum Offices	DisCos	Appeals Received ¹	Appeals Resolved	Appeals Pending ²	Resolution Rate	No of Sittings
Abuja, Lafia & Lokoja	Abuja	243	166	76	68.31%	25
Ado-Ekiti, Asaba & Benin	Benin	554	381	170	68.77%	23
Eko	Eko	398	214	184	53.77%	10
Abakaliki, Akwa, Enugu, Owerri & Umuahia	Enugu	1337	803	471	60.06%	74
Abeokuta, Ibadan, Ilorin & Osogbo	Ibadan	2562	1411	992	55.07%	77
Ikeja	Ikeja	2689	1667	1022	61.99%	36
Bauchi, Gombe, Jos & Makurdi	Jos	166	107	37	64.46%	27
Gusau, Kaduna, Kebbi & Sokoto	Kaduna	284	137	133	48.24%	17
Jigawa, Kano & Katsina	Kano	307	171	118	55.70%	17
Calabar, Port Harcourt & Uyo	P/H	1356	971	345	71.61%	39
Yola	Yola	248	153	93	61.69%	14
All Forum Offices	All	10,144	6,181	3,641	60.93%	359

¹. Appeals received include outstanding complaints from the preceding year as well as complaints rejected.

². Some of the pending appeals are still within the regulatory timeframe of 2 months to resolve.

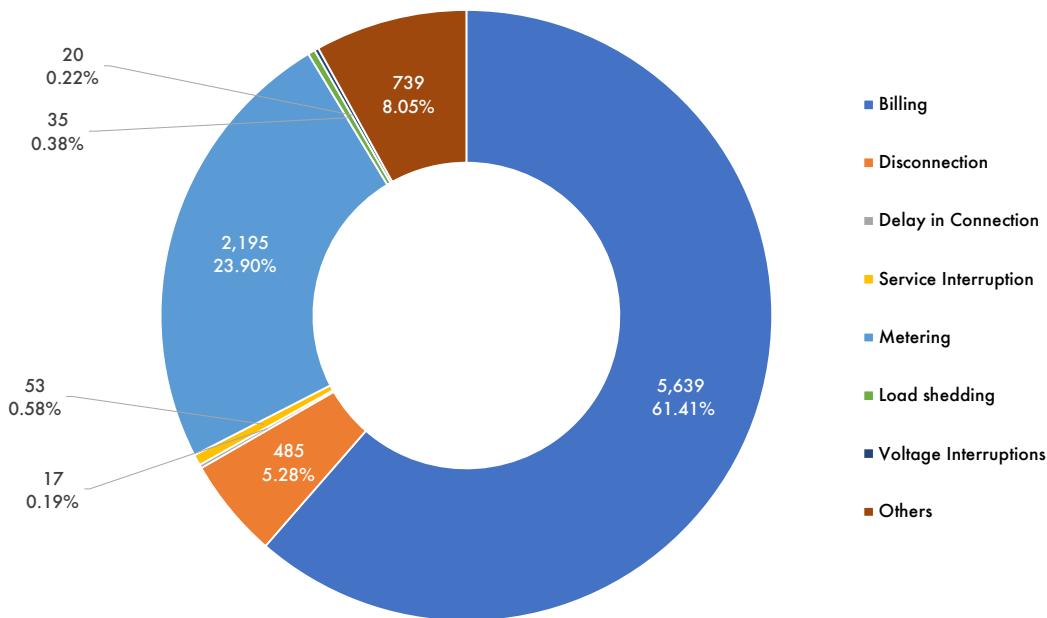


Figure 6: Category of Complaints Received by all Forum Offices in 2023

To ensure DisCos comply with the rulings of the Forum Offices, the Commission has introduced "Compliance with forum rulings" as one of the indices contained in the





Order on Performance Monitoring Framework. As contained in the KPI order, a DisCo is fined ₦10,000 per day for non-compliance with the forum ruling. Furthermore, the Commission is exploring strategies to improve the operational efficiency of Forum Offices such as ensuring that the forum panels sit regularly to increase the resolution rate and reduce the number of pending appeals carried over across years. The Commission also undertake regular training and capacity development for members of the forum panel to equip them to deliver on their mandates.

5.2 Stakeholder Engagements

The Commission engages relevant stakeholders as well as the public to appraise them of the Commission's activities. The main avenues for interface between the Commission and stakeholders are:

- A. NESI stakeholder meetings
- B. Trainings/Workshops
- C. Other stakeholder engagement activities

5.2.1 Nigerian Electricity Supply Industry (NESI) Stakeholder Meetings

The NESI meetings are periodic gatherings of all stakeholders in the NESI to deliberate on important industry issues and to review compliance and performances. The meetings usually have in attendance representatives of DisCos, GenCos, Transmission Service Provider (TSP), System Operator (SO), Market Operator (MO), Nigerian Bulk Electricity Trading (NBET) Company, Rural Electrification Agency (REA), other FGN Stakeholders and Development Partners (on an ad-hoc basis). Three NESI meetings were held in 2023 (Table 11).



Table 11: NESI Meetings held in 2023

S/N	NESI Meeting	Date	Location
1	Q1 NESI meeting	06 – 07 March 2023	Abuja, Nigeria
2	Q3 NESI meeting	10 – 11 July 2023	Lagos, Nigeria
3	Q4 NESI meeting	09 – 10 October 2023	Abuja, Nigeria



Participants at the Q3 NESI meeting held in Lagos, July 2023



Participants at the Q4 NESI meeting held in Abuja, October 2023



5.2.2 Stakeholder Workshop on the 2023 Constitutional Amendment and Electricity Act 2023

The Commission organised a stakeholder engagement workshop to review the impact of the Constitutional Amendment and the Electricity Act on the structure, operations, commercialisation and regulatory landscape of the NESI, and develop an actionable plan that will ensure an orderly transition to a multi-tiered regulatory regime. The specific aims of the workshop were to:

- Bring all key stakeholders to the table to review the impacts of the constitutional changes on the industry structure and operations
- Gain a shared perspective on the outlook of the industry
- Agree on a plan for implementation

The two-day workshop was held between 13 - 14 July 2023 and was attended by key stakeholders in the sector including representatives from the Federal government, State governments, FMoP, licensees in the NESI, investors, and other critical stakeholders.

At the end of the workshop, three thematic working groups (Table 12) were created to delve deep into the implications of the new dispensation envisaged in the EA 2023 and develop a roadmap for an orderly transition for the NESI. The composition of each working group is as follows:

- Three (3) Federal representatives
- Three (3) State representatives
- Four (4) Licensees
- One (1) Independent Consultant
- One (1) Secretariat





Table 12: Thematic working groups to develop a roadmap for implementation of EA 2023

Committee	Mandate
<i>Legal and Regulations</i>	Evaluate the implications of the Amendment and the Act on the NESI and develop a common playbook that the States can adopt
<i>Engineering and Technical</i>	Evaluate the required changes to the technical interfaces and barriers and provide a framework for transition into a decentralised network
<i>Commercial and Transactions</i>	Develop a new commercial framework for the industry to implement the laws in the Amendment and the Electricity Act





Participants at the EA workshop held in Lagos, July 2023



5.2.3 Other Stakeholder Engagements

The Commission held a series of other stakeholder engagements and activities during the year, including workshops, training, customer service week celebrations as well as hosting various stakeholders who paid courtesy visits to the Commission. The summary of the Commission's engagements with external stakeholders during the year is contained in Table 13.

Table 13: Stakeholder engagements and other activities of the Commission in 2023

S/N	Event	Date	Location
<i>Training/Workshop</i>			
1	Electricity Consumers Enlightenment and Protection Workshop for Staff of the Federal Competition and Consumer Protection Commission (FCCPC) and National Orientation Agency (NOA)	18 -19 July 2023	NERC HQ, Abuja
2	Training for newly recruited staff by the African Forum for Utility Regulators (AFUR)	31 July – 04 August	NERC HQ, Abuja
3	Three-day training by the Nigeria National Accreditation System (NiNAS) for members of staff of the Engineering Division	08 – 10 August 2023	NERC HQ, Abuja
4	Two-day workshop for NESI stakeholders on Feeder Naming and Other Assets Nomenclature for the NESI	10 -11 August 2023	NERC HQ, Abuja
5	A three-day workshop for Civil Society Organisations (CSOs) and Consumer Advocacy Groups	28 - 30 August 2023	Kano, Nigeria
6	Cost-Reflective Tariff training series sponsored by the U.S. Agency for International Development (USAID) and organised by the National Association of Regulatory Utility Commissioners (NARUC)	13-15 September 2023	NERC HQ, Abuja
7	One-day workshop organised by the African Forum for Utility Regulators (AFUR) on mini-grid tariff tools and methodologies	18 September 2023	NERC HQ, Abuja
8	Three-day training for NERC Forum Panel members	11 - 13 October 2023	NERC HQ, Abuja





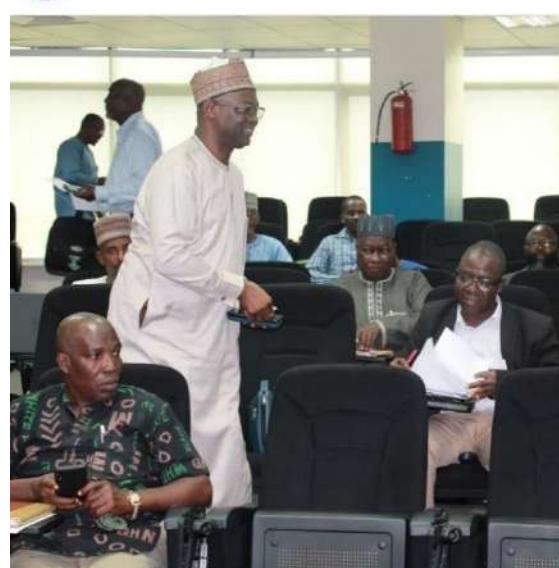
S/N	Event	Date	Location
9	Capacity strengthening workshop for DisCo's Heads of Corporate Communication	27 – 29 November 2023	Kano, Nigeria
10	Introduction to Arbitration Training for NERC staff	12 – 13 December 2023	NERC HQ, Abuja
<i>Courtesy Visits</i>			
11	Courtesy visit by the Nigerian Institute of Electrical and Electronic Engineers (NIEEE)	25 August 2023	NERC HQ, Abuja
12	Courtesy visit by the Commandant of the Defense Intelligence College	15 September 2023	NERC HQ, Abuja
13	Courtesy call by a delegation from the Norwegian Water Resources and Energy Directorate (NVE)	25 October 2023	NERC HQ, Abuja
<i>Other Activities</i>			
14	Launch of NERC Service Charter	04 April 2023	NERC HQ, Abuja
15	Commissioning of NERC Forum Office in Ado-Ekiti	29 September 2023	Ado-Ekiti, Nigeria
16	Customer Service Week Celebrations	03 - 06 October 2023	NERC HQ, Abuja
17	NERC and NESI Health and Safety Managers meeting	08 – 10 November 2023	Lagos, Nigeria
18	Peer review meeting with compliance and enforcement officers in the NESI	20 – 21 November 2023	Lagos, Nigeria
19	Public hearing for the strategic review of the Performance Improvement Plan (PIP) of the Transmission Company of Nigeria (TCN)	05 December 2023	NERC HQ, Abuja



A. Electricity Consumers Enlightenment and Protection Workshop for Staff of the Federal Competition and Consumer Protection Commission (FCCPC) and National Orientation Agency (NOA) [18 – 19 July 2023] - The workshop was aimed at strengthening partnerships with the FCCPC and NOA to guarantee the protection of the rights of electricity consumers.



B. Two-day workshop for NESI stakeholders on Feeder Naming and Other Assets Nomenclature for the NESI (10-11 August 2023) - The workshop was aimed at developing a unified system for the naming of assets in the NESI.



C. A three-day workshop for Civil Society Organisations (CSOs) and Consumer Advocacy Groups (28 - 30 August 2023) - The workshop was organised by the Commission and aimed to enlighten participants on the steps the Commission is taking to address challenges in the NESI as well as regulatory instruments that have been developed to improve service standards and consumer protection in the NESI.





D. Cost-Reflective Tariff training series sponsored by the U.S. Agency for International Development (USAID) and organised by the National Association of Regulatory Utility Commissioners (NARUC) [13 – 15 September 2023]- The training was held at the Commission's headquarters in Abuja as part of a series aimed at developing technical, commercial and legal regulatory frameworks to aid the power sector reforms in Nigeria.



E. Commissioning of NERC Forum Office in Ado-Ekiti (29 September 2023)- The Forum Office was commissioned within the franchise area of Benin Electricity Distribution Company (BEDC).





F. Customer Service Week Celebrations (03 – 06 October 2023) - The theme of Y2023 Customer Service Week was "Team Service". The week-long activities included free medical care sessions, inter-divisional quiz competitions, and indoor games amongst other activities.









G. Courtesy call by a delegation from the Norwegian Water Resources and Energy Directorate (NVE) to the Commission (25 October 2023) - The delegation visited the Commission as part of its visit to critical stakeholders in Nigeria to strengthen institutional and international collaborations.



H. 3-day Capacity strengthening workshop for DisCo's Heads of Corporate Communication (27 - 29 November 2023). The workshop aimed at identifying ways to simplify the communication of complex regulations to consumers.





I. Public hearing for the strategic review of the Performance Improvement Plan (PIP) of the Transmission Company of Nigeria (TCN) [05 December 2023] - The stakeholder engagement was held at the Commission's headquarters in Abuja. The engagement was to involve relevant stakeholders in the review of the PIP plan presented by the TCN.





Chapter Six: Electricity Tariffs



- 6.1 Introduction**
- 6.2 Multi-Year Tariff Order (MYTO)**
- 6.3 Tariff setting parameters**
- 6.4 Tariff subsidies**
- 6.5 Service-Based Tariff Regime (SBT)**
- 6.6 2023/2024 Tariff Review**



6.1 Introduction

The Commission is mandated by the EA 2023, section 34(1)(d), to ensure that prices charged by licensees are fair to customers and sufficient to allow the licensees to fully recover their efficient cost of operation. Pursuant to Section 76 of the now repealed EPSR Act 2004 and in compliance with the provisions of Section 116 of the EA 2023, the Commission has since 2007 adopted the Multi-Year Tariff methodology for the determination of tariffs. Particularly, the Commission also applies the building block approach to prepare the Multi-Year Tariff Order (MYTO) issued to licensees.

6.2 Multi-Year Tariff Order (MYTO)

The MYTO is an incentive-based regulation that seeks to reward performance above certain benchmarks, reduce technical and non-technical/commercial losses and lead to cost recovery as well as improved performance standards from all industry operators in the Nigerian Electricity Supply Industry. It is used to set cost-reflective wholesale and retail prices for electricity in the industry by employing a unified way to determine total industry revenue requirements tied to measurable performance improvements and standards. The first MYTO was issued by the Commission in July 2008 and has been reviewed regularly with revised versions issued as necessary.

6.2.1 Objectives of the MYTO

The MYTO methodology offers a transparent framework for determining electricity tariff that provides for the clear dis-aggregation and determination of necessary operating costs and overheads and reasonable Return on Investment. Specific objectives of the MYTO include:

- A. Cost recovery/financial viability - regulated entities should recover their (efficient) costs, including a reasonable rate of return on capital.





- B. Certainty and stability of the pricing framework which encourages an efficient level of investment.
- C. Incentives for improving performance – It provides incentives to reduce costs, improve quality of service and encourage efficient use of the network.
- D. Allocation of risk – It promotes the efficient allocation of risks.
- E. Simplicity and cost-effectiveness – It is easy to understand and implement.

6.2.2 Types of tariff reviews

The MYTO provides a 15-year tariff path for the NESI. In 2014, the Commission issued the Regulations on Procedure for Electricity Tariff Reviews in the NESI which provides for the following types of reviews:

- A. Minor review: This is done to consider changes in a limited number of tariff-setting macroeconomic indices such as inflation, interest rates, exchange rates and generation capacity. Based on the regulation, minor reviews are to be conducted at least once in 6 months although minor reviews can be conducted annually, bi-annually or more frequently depending on the stability of macroeconomic indices.
- B. Major review: This is to be conducted once in five (5) years and entails a review of all inputs for tariff setting.
- C. Extraordinary review: This type of review is conducted at the bequest of licensees. The Regulations allows licensees that require changes to their operating parameters to file for extraordinary tariff reviews following which the Commission conducts electricity rate case hearings.





6.3 Tariff setting parameters

The MYTO methodology uses a building blocks approach in setting Transmission and Distribution tariffs which provides the joint benefit of price cap and incentive-based regulation. The three building blocks are:

- A. The allowed return on capital – fair (market-based) rate of return on capital invested
- B. The allowed return of capital – recoup capital over the useful lives of the assets (depreciation)
- C. Efficient operating costs and overheads

While the generation tariff is determined using a benchmark Long Run Marginal Cost (LRMC) of the most economically efficient new entrant, DisCo tariffs are determined by the building blocks to arrive at the utility's revenue requirement and the volume of energy to be traded over a given period. The group of parameters which the Commission considers in determining or reviewing DisCos' tariffs include:

- A. Macroeconomic indices: indices such as inflation rate, interest rate and foreign exchange rates are key assumptions for tariff setting in the MYTO model.
- B. Aggregate Technical and Commercial Loss (ATC&C) targets and trajectories: ATC&C targets set the efficient loss levels that DisCos are expected to operate while still being able to earn their full revenue requirement. Failure to achieve the target ATC&C will negatively affect the DisCo's long-term financial position. The ATC&C trajectory provided in the MYTO envisages that utilities will continually make investments including infrastructure modernisation, metering, etc. which will enable them to operate more efficiently.





- C. Capital Expenditure (CAPEX): this involves the review of the utility's Regulatory Asset Base based on the CapEx investments made by the DisCo pursuant to its approved Performance Improvement Plans (PiPs).
- D. Operational Expenditure (OPEX): OPEX takes into consideration the costs a DisCo incurs in its course of delivering electricity to customers including the wholesale cost of energy. The OPEX of a DisCo can mainly be split into 2 categories – I) Fixed costs including rents, property insurance, property tax, contracts, depreciation and amortisation II) Variable costs including distribution operation and maintenance (labour, metering, line, street lightning etc.), connection costs, service charge, administration and billing costs.
- E. Energy Offtake: based on the revenue requirement of the DisCo, the end-use customer tariffs will be determined by the volume of energy to be traded by the utility. DisCos can enjoy economies of scale - all things being equal, the more energy a utility trades, the lower its price per unit of energy.

6.4 Service-Based Tariff Regime (SBT)

Pursuant to section 116(2)(c) of the EA which mandates the approval of tariffs that incentivise continuous improvement of the quality of service, tariff reviews take into consideration the varying levels of infrastructural development in the utility's network, that is directly attributable to the differential level of supply experienced by customers in the DisCo's network.

In August 2020, the Commission issued the MYTO 2020 which marked the beginning of the Service Based Tariff (SBT) regime in the NESI. This underscores the Commission's commitment to ensuring that rates paid by customers are aligned with the quality of service received.

The MYTO 2020 aimed, amongst other objectives, to:





- A. Create a path towards transitioning to a fully service-based cost-reflective tariff in the NESI
- B. Disaggregate the pre-existing customers' classes and clusters, reclassifying them based on each DisCo's commitment to service quality to them (which comprises such factors as the quantum of energy delivered, its voltage, and the DisCo's average response time to resolving customer complaints)
- C. Ensure that the tariff rates are aligned with the quality and availability of electricity committed to customer clusters by the DisCos.

The customer clusters/classes specified in MYTO 2020 and expected service delivery are contained in Table 14.

Table 14: Customer cluster and expected service delivery

Service Band	Minimum hours of supply
A	20
B	16
C	12
D	8
E	4

6.5 Tariff subsidies

In the absence of cost-reflective tariffs, the Government undertakes to cover the resultant gap (between the cost-reflective and allowed tariff) in the form of tariff shortfall funding. This funding is applied to the energy invoices that are to be paid by DisCos. The amount to be covered by the DisCo is based on the allowed tariff determined by the Commission and set out as their Minimum Remittance Obligation (MRO) in the periodic tariff Orders issued by the Commission.

In determining the cost-reflective tariffs for each DisCo using the MYTO methodology, the Commission takes into cognisance the distinct operational





parameters for each utility. Similarly, the allowed end-user tariff at each DisCo considers the SBT principle, the rate design adopted by the DisCo and the overarching Government policy on subsidy support. As a result, the tariffs payable by the various customer classes of the different DisCos are not the same.

The 2023 cost-reflective tariffs, average allowed tariffs and the corresponding subsidies required to bridge the revenue shortfall in the NESI are contained in Table 15.

Table 15: Average Tariff for Non-MD customers Across DisCos in 2023

DisCo	CRT(₦/kWh)	Allowed Tariff (₦/kWh)	Subsidy (₦/kWh)
Abuja	83.35	63.24	20.11
Benin	88.04	63.24	24.8
Eko	79.77	60.06	19.71
Enugu	82.01	59.49	22.52
Ibadan	91.89	62.48	29.41
Ikeja	76.77	56.57	20.2
Jos	100.63	60.61	40.02
Kaduna	83.55	57.45	26.1
Kano	87.21	58.82	28.39
PH	88.88	61.4	27.48
Yola	190.55	65.99	124.56

*CRT-Cost Reflective Tariff

In 2023, Yola had the highest cost-reflective tariff compared to other DisCos due to higher operational costs and other unique factors (such as insecurity in parts of the franchise area) which the Federal Government approved as part of the reprivatisation effort in 2021. As a result of the fact that its allowed tariffs were also identical to the rest of the DisCos, YEDC enjoyed the highest subsidy cost per unit of energy delivered.

On the other hand, Ikeja and Eko had relatively lower tariffs and subsidies. At the national level, the average CRT was ₦86.10/kWh, while the average allowed tariff was ₦60.06/kWh, resulting in an average subsidy of ₦26.04/kWh.





In line with the extant FGN policy to reduce subsidy intervention in the NESI and effective from 2020, the Commission undertook minor tariff reviews which translated to an increase in the ratio between the allowed tariff and the CRT from 55% in Jan 2020 to 94% in January 2023. Consequentially, the government's subsidy obligation was reduced from ₦501 billion in 2020 to ₦144 billion in 2022.

However, the FGN policy to unify FX rates in May 2023 combined with the lack of minor reviews for H2 2023 resulted in a significant increase in the subsidy per kWh (₦8.53/kWh in January vs. ₦26.04/kWh in December 2023). As a result, the government's monthly subsidy obligation increased from an average of ₦12.00 billion in 2023/Q1 to an average of ₦84.00 billion by 2023/Q4.

6.6 End-user Tariffs in Nigeria and Other West African Countries

The average allowed end-use customer electricity tariff in Nigeria in 2023 compared to those of selected African countries (predominantly West African countries) is presented in Table 16. On average, across 2023, the average customer tariff in Nigeria was US\$0.09/kWh (approximately ₦69.08) which was the lowest tariff charged across the selected countries representing 48.46% of the average⁷.

Table 16: Average Electricity Tariff in Select African Countries

Country	Average Cost (\$)	Average Cost (₦)
Gambia	0.215	165.03
Benin Republic	0.180	138.17
Burkina Faso	0.210	161.19
Ghana	0.140	107.46
Guinea Bissau	0.310	237.95
Ivory Coast	0.110	84.43
Liberia	0.275	211.09
Mali	0.210	161.19
Mauritania	0.160	122.81
Mauritius	0.132	101.32

⁷ The Cost of electricity for Nigeria was excluded in the computation of average cost





Country	Average Cost (\$)	Average Cost (₦)
Niger	0.180	138.17
Nigeria	0.090	69.08
Senegal	0.230	176.55
Sierra Leone	0.130	99.79
Togo	0.200	153.52
Uganda	0.170	130.49
Gambia	0.215	165.03

Note: ¹ Average rate of tariffs is as of August 2023, at an exchange rate of NGN767.59/\$1

The relatively low 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.

6.7 2023/2024 Extraordinary Tariff Review

The FGN policy to unify exchange rates had a consequential impact on the wider macroeconomic environment, including inflation rate. In a bid to ensure that these changes did not negatively impact their ability to deliver service to customers and pursuant to the provisions of the 2014 Regulations on Procedure for Electricity Tariff Reviews in the NESI, all DisCos filed applications for extra-ordinary tariff reviews with the Commission in June 2023.

6.7.1 Rate Case Hearing Process and Structure

As part of their submissions, the Commission directed DisCos to include all data to justify all assumptions and parameters that had been considered as part of their analyses. Subsequently, the DisCos' rate review applications were published on the Commission's website and notices were published in four (4) national newspapers, soliciting stakeholder comments and participation in a public hearing on the rate case application.

The Commission conducted rate case hearings for all DisCos from 24 July to 08 August 2023, at its Headquarters in Abuja. A panel of three Commissioners





presided over the hearing in compliance with the Business Rules of the Commission, while invitations were extended to critical sector stakeholders⁸ including consumer groups to interrogate the submissions of the DisCos. Each DisCo was afforded sufficient time to present the justification for its proposed tariff review following which the panel, invited stakeholders and intervenors sought clarification and made comments.

The highlights of the comments received on the applications included:

- A. The need to minimise the exposure of electricity tariffs to fluctuations in exchange rates and the international oil and gas market
- B. The slow pace of meter rollout which contributes to higher losses and the cost of the operations of utilities
- C. Low quality of services rendered by utilities and non-adherence to the service-based obligation
- D. Need to ensure that the DisCos exclude assets contributed/procured by customers from their revenue requirement
- E. Concerns over the prudence of DisCos' historic operating expenses (OpEx) and capital expenditures (CapEx)
- F. Concerns over corporate governance practices and internal control policies inhibiting service delivery

The Commission duly considered the comments including the impact of changes in macroeconomic variables, prudence in expenditure, and operational efficiency parameters provided in the DisCos revenue requirement and resultant end-user tariffs. Pursuant to section 116 of the EA 2023 and extant regulations, the

⁸ Federal Competition and Consumer Protection Commission (FCCPC), Nigerian Society of Engineers (NSE), National Union of Electricity Employees (NUEEE), Manufacturers Association of Nigeria (MAN), Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA), the Bureau of Public Enterprise (BPE), Transmission Company of Nigeria Plc (TCN), registered intervenors (Appendix D.2).





Commission considered and approved cost-reflective tariffs for the DisCos with effect from 01 January 2024. Notwithstanding, in line with the policy direction of the FGN on electricity subsidy, the allowed end-user tariffs to be charged by DisCos were frozen at the rates which became effective in January 2023 (Table 17).

Table 17: Cost-Reflective and Allowed Tariffs effective 01 January 2024

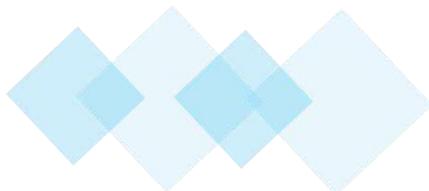
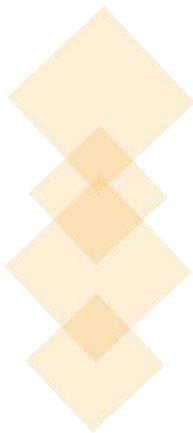
DisCo	CRT(₦/kWh)	Allowed Tariff (₦/kWh)	Subsidy (₦/kWh)
Abuja	120.88	63.24	57.64
Benin	126.00	60.10	65.90
Eko	114.80	59.50	55.30
Enugu	127.70	59.00	68.70
Ibadan	126.10	62.50	63.60
Ikeja	112.10	56.60	55.50
Jos	138.90	60.60	78.30
Kaduna	129.40	57.50	71.90
Kano	128.20	58.80	69.40
PH	127.00	61.40	65.60
Yola	214.10	66.00	148.10

CRT-Cost-reflective tariff





Chapter Seven: State of the Nigerian Electricity Supply Industry (NESI)



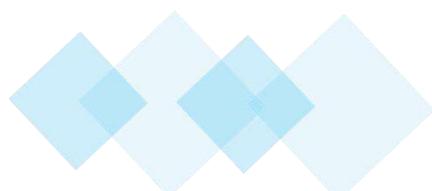


7.1 Operational Report

7.2 Grid Indices

7.2 Metering

7.3 Commercial Report





7.1 Operational Report

The operational performance of the NESI is a measure of how effectively available resources are utilised to generate electricity. Optimum operational performance is essential to ensure adequate, safe electricity generation, transmission, and supply. In evaluating the operational performance of the NESI in 2023 the following Key Performance Indicators (KPIs) were considered:

- A. Available generation
- B. Plant availability factor
- C. Total generation
- D. Generation load factor
- E. Generation mix

7.1.1 Available Generation

In 2023, the average available generation capacity of the twenty-seven (27) grid-connected power plants was 4,544.31MW. A review of monthly data showed that during the year (2023), the average available generation capacity peaked in March, October and November respectively (Figure 7). The increased average available capacity in March was driven by improved mechanical availability of Egbin ST, Sapele, Delta GS, Omotosho, Olorunsogo, and Omotosho NIPP plants, while the increases in October and November were driven by improved availability of the hydropower plants (Shiroro, Kainji, Jebba, and Dadin Kowa) owing to improved water reserves after the rainy season.



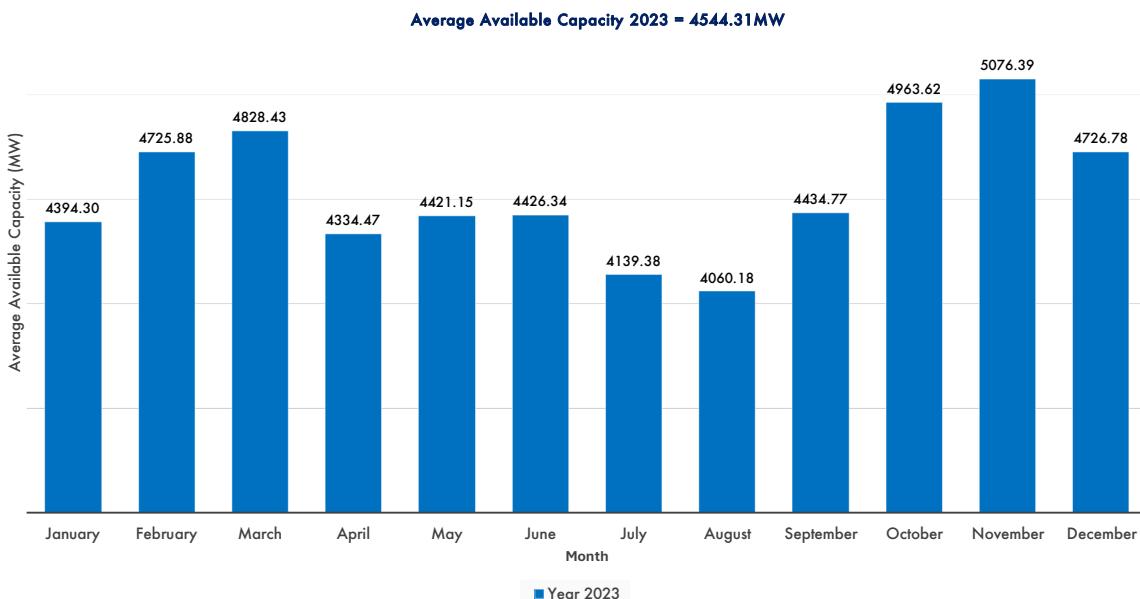


Figure 7: Average Available Capacity (MW) in 2023

7.1.2 Plant availability factor

The availability factor of a plant is measured as a ratio of the maximum rated output of the plant declared by the operator (available capacity) relative to the maximum rated output specified by the manufacturer (installed capacity). The available capacity of a plant may change from time to time due to several factors including i) atmospheric conditions at the plant; ii) mechanical availability of the plant (planned and unplanned outages); iii) feedstock availability, etc. The formula for the plant availability factor (PAF) is represented by equation 7.1.

$$\text{Plant availability factor} = \frac{\text{average available capacity (MW)}}{\text{installed capacity (MW)}} \times 100 \quad (7.1)$$

The plant availability factor is a critical parameter for evaluating the overall health of the upstream segment of the NESI. In 2023, the overall availability factor for all grid-connected plants was 35.90%. This shows that more than 64% of the installed capacity in the NESI was not available. Overall, seven (7) plants had availability





factors above 50% with the Azura IPP plant recording the highest availability factor of 88.94% (Table 18). Conversely, Olorunsogo NIPP had an availability factor of 4.27% and Alaoji NIPP recorded a 1.58% PAF because it was unavailable throughout the fourth quarter due to feedstock (gas) unavailability.

Table 18: Plant Availability Factor (%) in 2023

Plant	Installed Capacity (MW)	Average Availability Capacity 2023	Plant Availability Factor (%) 2023
Azura IPP	461	410.03	88.94
Paras	85	67.03	78.86
Okpai	480	314.08	65.43
Jebba	570	362.78	63.65
Dadin Kowa GTS	40	24.38	60.95
Shiroro	600	335.07	55.84
Kainji	760	407.56	53.63
Geregu	435	211.00	48.51
Egbin ST(GAS)	1320	633.11	47.96
Afam VI	650	311.24	47.88
Odukpani	625	260.91	41.75
Delta GS	900	370.67	41.19
Rivers IPP	180	70.11	38.95
Omotosho	304	117.95	38.80
Ibom	191	72.95	38.20
Olorunsogo	304	95.18	31.31
Omoku	150	42.79	28.53
Trans Amadi	100	20.83	20.83
Omotosho NIPP	500	100.26	20.05
Taopex Energy	60	9.57	15.95
Sapele GT NIPP	452	68.36	15.12
Sapela ST	720	89.94	12.49
Geregu NIPP	435	39.14	9.00
Ihovbor NIPP	450	30.56	6.79
Afam IV – V	726	41.90	5.77
Olorunsogo NIPP	690	29.43	4.27
Alaoji NIPP	472	7.45	1.58
Total	12,660	4,544.30	35.90

The low overall availability factor of the power plants in the NESI is a major source of concern to the Commission. The largest driver of plant unavailability in 2023 was mechanical outages. Approximately 38.04% (4,802.80MW) of the total installed





capacity of grid-connected plants was unavailable due to mechanical outages⁹. The age of many of the power plants (as of December 31 2023, the average plant in the NESI is 21 years old) and challenges with the maintenance of generating units are the biggest driving factors behind the mechanical outages. Other contributory factors to the low PAF experienced in the NESI include:

- Liquidity challenges at the upstream segment of the NESI (*applicable to all GenCos*): this is caused by the gross underpayment of GenCo invoices by DisCos (market shortfall) and the Government (unpaid subsidy costs). Without sufficient cash flows, GenCos cannot maintain their generation units, leading to extended outages. The liquidity challenges have also prevented operators of the privatised generation assets from recovering capacity that had been inoperable before privatisation.
- Gas supply challenges (*applicable to thermal GenCos*): Lack of reliable gas supply to the plants due to gas infrastructure constraints on the national gas network and the absence of fully effective Gas Supply Agreements (GSA). As of the end of December 2023, only five (5) plants out of the total twenty-three (23) thermal plants are operating with fully effective GSAs. This means that the remaining eighteen (18) plants secure gas on a “best endeavour basis¹⁰” which puts them at great risk of having their supply curtailed by the suppliers when there is a reduction in gas production.

Improving the liquidity flows to the GenCos through greater enforcement of payment discipline on DisCos as well as the timely payment of subsidies by the Federal Government are essential to allow GenCos to fund much-needed capital expenditure

⁹ Any capacity that has not been operated in the past 1 year due to mechanical faults falls into this category

¹⁰ Best endeavour basis refers to a situation where parties (i.e., GenCos and Gas suppliers) transact without a fully effective contract, therefore there are limited service requirements and obligations between parties.





to reclaim units that have been inoperable for extended periods as well as fund the preventive maintenance of operable units to prevent long-term outages.

To manage the overall availability of plants on the grid, the System Operator (SO) must implement the provisions of section 22.3 of the Grid Code on scheduling outages in a way that does not put the grid at risk of low gross availability. Furthermore, GenCos must engage with the gas subsector to align outages on the gas infrastructure (e.g. pipeline maintenance activities) with planned plant outages.

7.1.3 Total Generation

The hourly output produced by all the units in a power plant fluctuates based on grid demand, mechanical operability of the unit(s), and the availability of feedstock. Plants are only dispatched when the load on the grid is sufficient to offtake the energy while operating within acceptable technical limits. The factors that determine the dispatch of a plant include:

- A. Plant availability (mechanical and feedstock)
- B. Load offtake on the grid
- C. Financial competitiveness of the plant in the economic merit order dispatch

The gross generation on the National Grid in 2023 was 36,710.38GWh, which translates to an average hourly generation of 4,190.68MWh/h (equation 7.2).

$$\text{Total generation} = \text{Ave. hourly generation (MWh)} \times 24 \times \text{total number of days in the year} \quad (7.2)$$

The average hourly generation was higher in the first quarter (Jan – March) and the fourth quarter (October – December) 2023, which is consistent with the expectations that the reservoir feeding the hydropower plants is sufficiently refilled during the rainy season (Figure 8).





2023 continued a trend of relatively low average hourly generation in Q3 in spite of the fact that it is the period when the rainy season commences. The reason why the grid cannot utilise the increased hydropower plant availability during this period is the fragility of the distribution network. When it rains, many of the DisCo's feeders often trip due to old age as well as non-compliance with the necessary engineering standards.

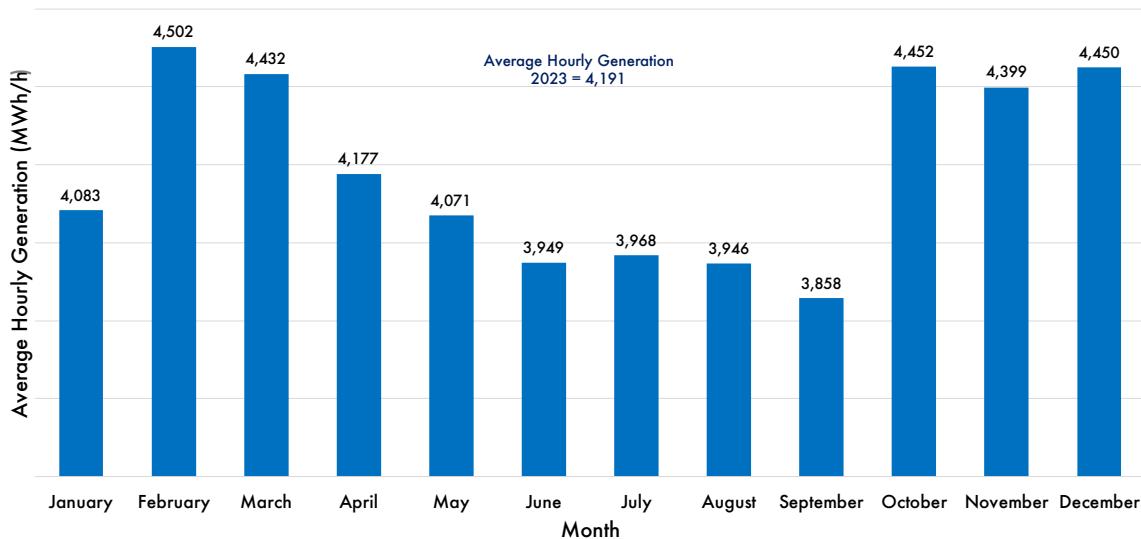


Figure 8: Average Hourly Generation (MWh/h) in 2023

7.1.4. Average Share (%) of Generation Output

The generation share is a percentage (%) of the total energy generated within a specified period. The generation share of a power plant is affected by its size (installed capacity), feedstock, and mechanical availability within the year as well as its rank within the merit dispatch order.

The contribution of eighteen (18) power plants out of the twenty-seven (27) grid-connected power plants, which account for 94.48% of the total electricity generated in 2023 is presented in Figure 9. Egbin power plant had the highest average share of generation output (14.09%) compared to the other power plants. Kainji, Azura IPP, Delta GS, and Jebba power plants had more than 8% average share of





generation output respectively. Conversely, Sapele GT accounted for the lowest share of output contributing 1.30% of the total energy generated within the year.

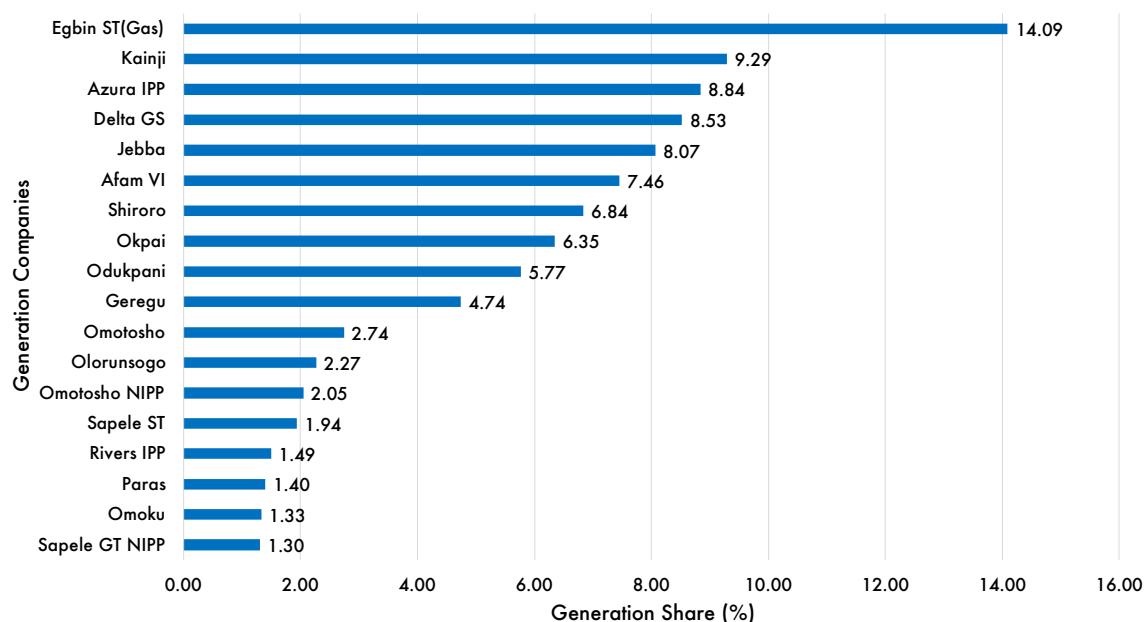


Figure 9: Average Share (%) of Generation Output by Power Plants in 2023

7.1.5 Generation Load Factor

The load factor is a measure of the utilisation of a power plant's available capacity, calculated as the ratio of the average electricity generated over a period to the maximum possible generation (assuming all the available capacity is utilised all the time over the period). A higher load factor means better capacity utilisation thereby reducing the cost per unit of energy and increasing profitability, as fixed costs are spread over a larger amount of dispatched energy. The load factor (also known as the dispatch rate) reflects both the demand for energy and a plant's ability to supply it. The formula for load factor is represented by equation 7.3.

$$\text{Load Factor} = \frac{\text{Total Energy Generated (MWh)}}{\text{Ave. Available Capacity (MW)} \times 24\text{hrs} \times \text{period (in days)}} \times 100 \quad (7.3)$$





The overall load factor for all grid-connected power plants in 2023 was 92.22%; meaning that only 7.88% of available energy (MWh) was not dispatched during the year. In the absence of a Supervisory Control and Data Acquisition (SCADA), and provisioning for spinning reserve, the SO and DisCos do not operate the system to its limit to allow for some inherent protection against grid disturbances. Therefore, it is almost impossible for grid-connected power plants to record load factors above ~95%.

The load factors of the seven (7) power plants with the highest dispatch rates in 2023 are represented in Figure 10. Four (4) power plants (Omoku, Trans Amadi, Afam VI, and Olorunsogo) recorded dispatch rates of 100% while eighteen (18) power plants recorded dispatch rates above 90%. All hydropower plants except Shiroro (86%) recorded dispatch rates above 90% pursuant to the Commission's Order ([Order No: NERC/182/2019](#))¹¹ on mandatory and priority dispatch of hydropower plants.

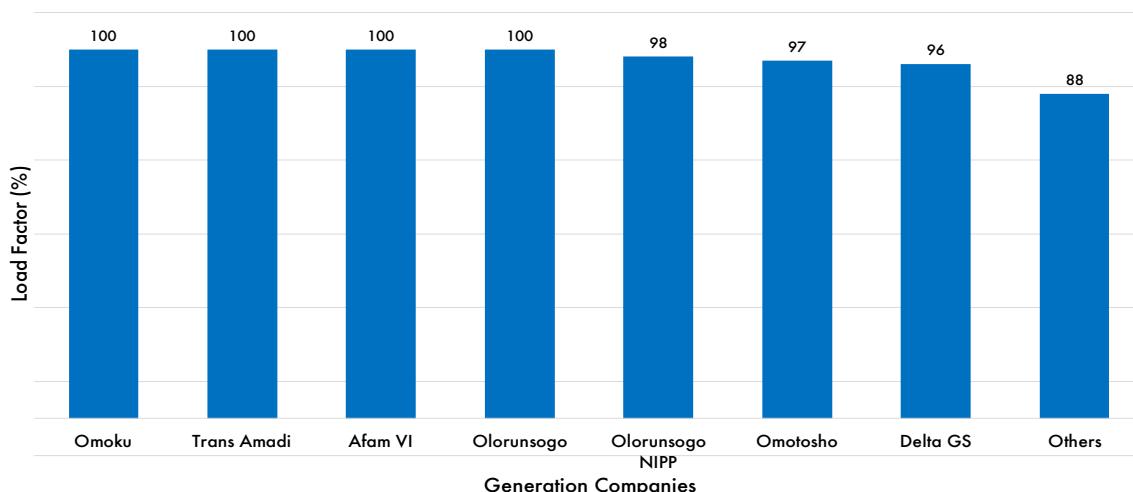


Figure 10: Plant Load Factor (%) in 2023

¹¹ The order stipulates that hydropower plants which are the cheapest energy generation source, should be dispatched with priority to reduce wholesale energy costs for consumers.





7.1.6 Generation Mix

The electricity generation mix refers to the combination of fuels used to generate electricity over a period. The composition of the generation mix varies across countries and is influenced by factors such as natural resource availability, government policies, environmental considerations, type of power plants, energy demand, and seasonal fluctuations. An ideal energy mix must balance the three key elements of the energy trilemma:

- A. Energy Security¹²
- B. Energy Sustainability¹³
- C. Energy Affordability/Equity¹⁴

The formula for the share of electricity generated by fuel source is given by equation 7.4.

$$\text{Share of fuel}_i = \frac{\text{Total electricity generated from fuel } i (\text{MWh})}{\text{Total electricity generated from all fuel sources (MWh)}} \times 100 \quad (7.4)$$

The contribution from hydropower plants to total generation in 2023 was 24.75% (9,086.90GWh). The NCC tracks the daily water levels at all hydropower plants and manages the dispatch of the plants to ensure that there is sufficient water in the plants' reservoirs to allow them to run during the peak of the dry season albeit with limited output compared to the wet season. This is critical to grid stabilisation as it allows for year-round security of supply from the hydropower plants which are all located in the northern part of the Country.

¹² This reflects a nation's capacity to meet current and future energy demands reliably, withstand, and bounce back from system shocks with minimum disruption to supplies.

¹³ This represents the transition of a nation's energy system towards mitigating and avoiding potential environmental harm and climate change impacts.

¹⁴ This reflects a nation's ability to provide universal access to affordable, fairly priced and abundant energy for domestic and commercial use.





7.2 Grid Indices

The Transmission Company of Nigeria (TCN) which has the responsibility of transporting energy from power plants to distribution substations holds two licenses; Transmission Service Provider (TSP) and System Operator (SO). The TSP owns and maintains the transmission infrastructure while the SO is responsible for maintaining system stability, load balance, load dispatch and undertaking market operations responsibilities. To assess the performance of the grid, the Commission focuses on the following four (4) Key Performance Indicators (KPIs) that relate to power transmission:

- A. Transmission loss factor
- B. Stability of grid frequency
- C. Voltage fluctuation
- D. Incidence of system collapse

7.2.1 Transmission Loss Factor

Transmission Loss Factor (TLF) refers to the proportion of the total energy sent out by the power plants that was either lost in transmission or utilised in the transmission station i.e., neither delivered to the DisCos nor exported to local and international bilateral customers. There is an inverse relationship between the TLF and the efficiency of the transmission system; i.e. a decline in the TLF indicates an improvement in transmission efficiency over a given period. The formula for TLF is represented by equation 7.5.

$$\text{TLF} = \left(1 - \frac{\text{Energy delivered to all DisCos} + \text{Energy Exported}}{\text{Energy Sent out by all GenCos}} \right) \times 100 \quad (7.5)$$

The average TLF In 2023 was 8.17%, as shown in Figure 11. A TLF of 8.17% indicates that for every 100MWh of energy injected into the grid, 8.17MWh of the





energy was undelivered to DisCos and international customers due to losses in the transmission network or consumption at the transmission substation.

The average TLF of 8.17% recorded in 2023 represents an under-performance of -0.92pp relative to the MYTO target for 2023 (7.25%). The 7.25% TLF target set by the Commission for 2023 represents the maximum efficient transmission loss, which is to be paid by the customers. Exceeding the TLF target means that the Transmission Service Provider (TSP) will not earn its full revenue requirement because there is no provision to recover revenues needed to cover excess (inefficient) losses.

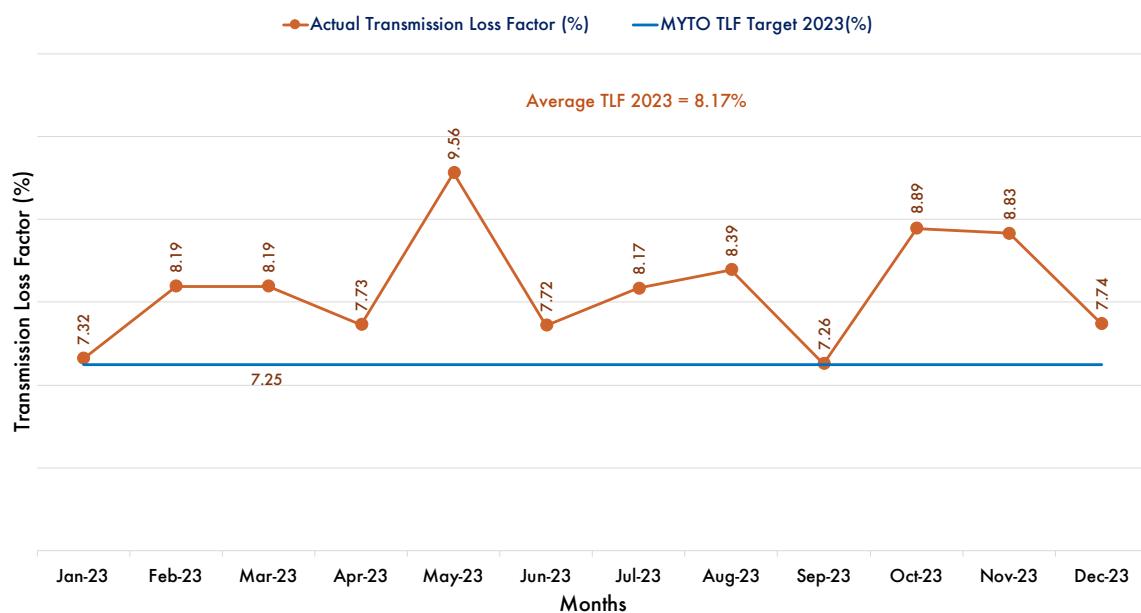


Figure 11: Actual TLF (%) vs. MYTO TLF Target (%) in 2023

The Commission has directed TCN (TSP and SO) to work on a mechanism to identify the drivers of TLF so that they can develop solutions to maintain the TLF on the grid within the limits approved in its tariff.

7.2.2 Grid Frequency

Frequency is a crucial power quality parameter that industrial customers are particularly concerned about due to the sensitivity of their heavy-duty machinery. In





industrial production assembly lines, the machines are designed to operate only within pre-set frequency tolerance limits and therefore often have a low tolerance for frequency fluctuations. As specified in section 10.1.2 of the Grid Code, the standard frequency for operation on the Grid is 50Hz.

The code provides that under normal circumstances, the grid can operate within a deviation of $\pm 0.5\%$ i.e. between a lower limit of 49.75Hz and an upper limit of 50.25Hz. Section 10.1.2 of the Grid Code further provides that in extreme circumstances, the grid may operate within a deviation of $\pm 2.5\%$ i.e. system frequency may reach a lower bound stress limit of 48.75Hz and an upper bound stress limit of 51.25Hz.

A system's stability over a given period is measured by its ability to operate as close as possible to the 50Hz benchmark set in the Grid Code; this means that the lower the range between the average upper daily system frequency and the average lower daily system frequency, the more stable the system has been. In 2023, the average upper daily system frequency was 50.81Hz, while the average lower daily system frequency was 49.04Hz, which translates to a range of 1.77Hz.

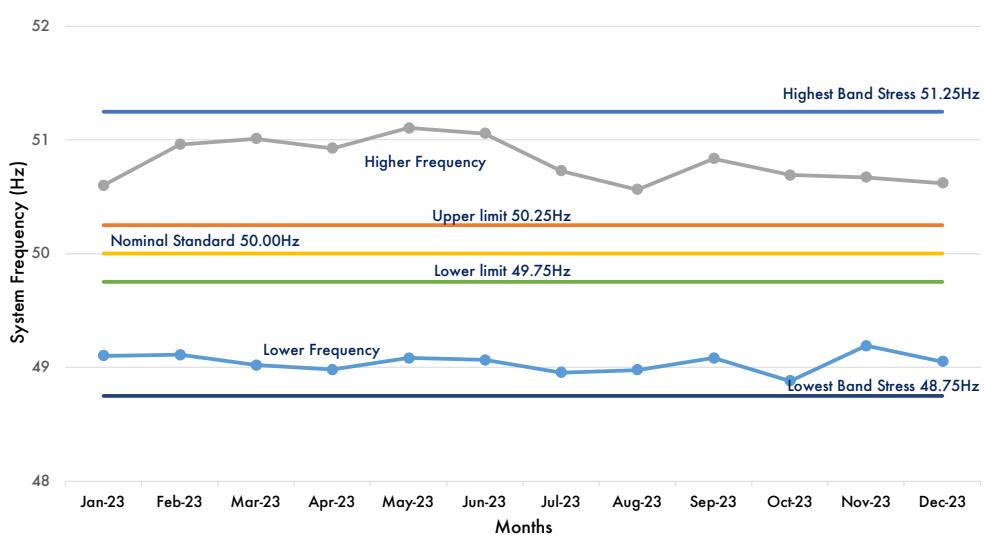


Figure 12: Monthly System Frequency (Hz) from Jan – Dec 2023





Figure 12 shows that the monthly average upper and lower bounds of the system frequency were all outside the normal operation limits but within the stress limits throughout 2023. The consistent operation of the grid outside the normal frequency limits during the year 2023 indicates an imbalance in the supply and demand of electricity on the grid which is primarily caused by the lack of a Supervisory Control and Data Acquisition (SCADA) system.

The System Operator (SO) has invested in an IoT-based solution to improve real-time visibility into the operations of the Grid. However, the inability to remotely operate the entire system as would be possible under the SCADA system continues to pose challenges to the SO's ability to operate the grid within the normal operational frequency limits.

7.2.3 Voltage Fluctuation

To guarantee the quality of electricity delivered to end users, the Grid Code specifies a nominal system voltage of 330kV with a tolerance range of $\pm 5\%$ (313.50kV to 346.50kV in the lower and upper bounds respectively). Fluctuations in grid voltage, including spikes, dips, flickers, and brownouts, can cause significant harm to consumers and result in substantial commercial losses. Extreme cases of voltage fluctuations, particularly at the distribution network level can cause severe damage to industrial machines.

The system voltage pattern for 2023 is illustrated in Figure 13. The average lower and upper operating voltage bounds for the transmission network in 2023 were 298.23kV and 352.22kV respectively (range of 54.00kV); both values are outside the respective allowable limits which shows that the grid performance did not comply with the standard specified in the Grid Code.





The Commission continues to engage with TCN and other stakeholders to ensure sustained efforts at keeping the system voltage within the regulated limits, providing a safe and reliable electricity supply to end users.

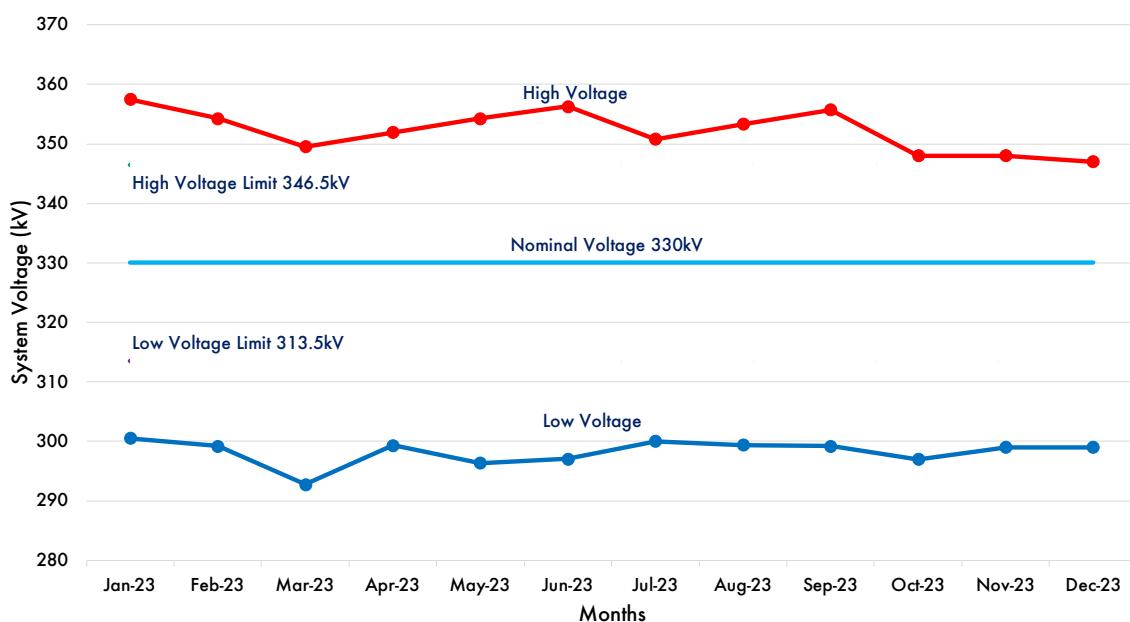


Figure 13: Monthly System Voltage (kV) from Jan – Dec 2023

7.2.4 System Collapse

The national power grid is a vast network of electrical transmission lines that link power stations to end-use customers across the nation and it is designed to function within specific stability boundaries, including voltage ($330\text{kV} \pm 5.0\%$) and frequency ($50\text{Hz} \pm 0.5\%$). Any deviation from these stability ranges can result in decreased power quality and, in severe cases, cause widespread power outages ranging from a partial collapse of a section of the grid to a full system collapse.

While the SO is responsible for ensuring that all parameters are maintained within their respective tolerance thresholds, the primary parameter that the SO tracks to avoid system disturbances is frequency. When the electricity demand is higher than the supply, the grid frequency drops. Conversely, if supply surpasses demand, the





frequency increases. In reaction to the grid operating at a frequency outside of the normal operation range (especially when the frequency is too low), safety settings on generation units may cause the units to shut down. This often exacerbates the frequency imbalance on the grid thereby causing more generation units to shut down resulting in a full or partial system collapse.

There were three (3) incidents of system collapses in 2023. Two of the incidents occurred in the third quarter after three consecutive quarters (2022/Q4 to 2023/Q2) without any system collapse. The third incident occurred in the fourth quarter. The details of grid collapse incidents between 2019 and 2023 are contained in Table 19 and the summary of the causes of the three (3) incidents recorded in 2023 are contained in Table 20.

Table 19: System Collapses in 2019 – 2023

Category of Collapse	No. of Collapses				
	2019	2020	2021	2022	2023
Partial Collapses	1	0	2	2	0
Total Collapses	10	4	2	4	3





Table 20: System collapse incidents in 2023

SN	Date	Immediate Cause	Remote Cause	Inference
1	19 th of September, 2023 (11:31hours)	The immediate cause was due to the tripping of some Generating Units of Kainji, Jebba, and Dadin Kowa Power Stations under frequency protection.	The loss of lines G3B and S4G isolated Delta power station generating units which led to a decrease in system frequency from 50.20Hz to 48.21Hz. This was the remote cause of the system collapse.	When lines G3B and S4G were lost, this isolated some generating units at Delta Power Station. A load of 346MW was lost and that resulted in a sharp decline in system frequency from 50.20Hz to 48.21Hz.
2	14 th of September, 2023 (00:41hours)	The immediate cause of the system collapse was due to the tripping of Kainji and Shiroro generating units on the grid resulting in the frequency-load imbalance.	The remote cause was the explosion of the Kainji and Jebba Line 2 blue phase Capacitor Voltage Transformer and the burning of the blue isolator of Kainji and Jebba 330kV line 1 which made the Jebba units to be on full speed no load condition	At 00:40hours two generating units of Shiroro Power Station tripped and lost 224MW of power
3	11 th of December, 2023	Between 13:48hrs & 13:49hrs, there was a simultaneous tripping of four (4) 330kV circuits (Olorunsogo/Ikeja West, Osogbo/Ihovbor, Osogbo/Ikeja First, and Afam/Alaoji). This interconnected 330kV circuits resulted in the loss of 878.13MW suspected to be a result of relay due to the separation of Egbin, maloperation or poor coordination.	Investigations indicate that the incident was potentially triggered by two (2) remote causes:	The multiple tripping of interconnected 330kV circuits and the simultaneous tripping of Egbin, Olorunsogo I & 2, and Paras power plants resulted in the loss of 878.13MW of power causing the system to collapse.





SN	Date	Immediate Cause	Remote Cause	Inference
		Olorunsogo Ph I, & II, and Paras power plants located on the western axis of the grid. As a result, the grid frequency dropped from 50.25Hz to 48.01Hz which led to the cascaded tripping of several thermal and hydropower plants and the eventual collapse of the grid.	Second, the simultaneous tripping of Egbin, Olorunsogo I & 2, and Paras power plants would have resulted from a disruption in gas supply via the western axis of the ELPS gas pipeline.	





7.3 Metering

The status of the metering of end-use customers is presented in Table 21. The total number of registered customers as of December 2023 was 13,162,572 with 5,842,726 (44.39%) of the customers metered.

Table 21: Metering Progress as of December 2023

DisCos	Total No. of Registered Customers 2023	No. of Metered Customers 2023	Metering Progress (%) 2023	Metering Gap (%) 2023
Aba	191,405	54,462	28.45	71.55
Abuja	1,414,356	856,435	60.55	39.45
Benin	1,324,373	659,511	49.80	50.20
Eko	736,146	431,336	58.59	41.41
Enugu	1,396,440	616,210	44.13	55.87
Ibadan	2,401,864	1,046,873	43.59	56.41
Ikeja	1,238,295	898,202	72.54	27.46
Jos	730,402	243,049	33.28	66.72
Kaduna	864,128	206,076	23.85	76.15
Kano	872,656	210,338	24.10	75.90
Port Harcourt	1,179,194	494,246	41.91	58.09
Yola	813,313	125,988	15.49	84.51
Total	13,162,572	5,842,726	44.39	55.61

A total of 672,539 meters were installed across all DisCos in 2023. Ikeja (149,713), Ibadan (125,759), and Abuja (105,154) DisCos had the highest number of meter installations representing 22.26%, 18.70% and 15.63% respectively of the total installations. Conversely, Kano DisCo had the lowest number of installations (2,056) accounting for 0.31% of the total installations (Table 22).

**Table 22: Meter Deployment by DisCos in 2023**

DisCo	No. of Metered Customers as of December 2023	No. of Customers Metered in 2023	% of total installations
Aba	54,462	54,462	8.10%
Abuja	856,435	105,154	15.64%
Benin	659,511	34,338	5.11%
Eko	431,336	36,838	5.48%
Enugu	616,210	73,256	10.89%
Ibadan	1,046,873	125,759	18.70%
Ikeja	898,202	149,713	22.26%
Jos	243,049	12,680	1.89%
Kaduna	206,076	10,039	1.49%
Kano	210,338	2,056	0.31%
Port Harcourt	494,246	48,989	7.28%
Yola	125,988	19,255	2.86%
Total	5,842,726	672,539	100%

The five (5) frameworks that are available for DisCos to meter their customers are contained in the Meter Asset Provider and National Mass Metering Regulations (NERC-R-113-2021) which was issued in 2021. Descriptions of the frameworks are contained below -

- A. **Meter Asset Provider:** This framework aims to provide for the provision and maintenance of end-user meters as a service by third-party investors on which customers benefitting from such meters pay a Metering Service Charge (MSC) to cover the cost of metering service.
- B. **National Mass Metering Programme:** This is a policy intervention with support from the CBN for the provision of long-term (10-year tenure) single-digit interest loans to DisCos strictly for the provision of locally manufactured/assembled meters to customers.
- C. **Vendor Financed:** This is a mutual agreement between a DisCo and a Local Meter Manufacturer/Assembler (LMMA) or Meter Asset Provider (MAP) on





a deferred payment arrangement where the base cost of meters shall not exceed the regulated price approved by the Commission.

- D. DisCo Financed: This involves the procurement of meters from other sources outside the MAP and NMMP framework. The allowable costs of meters, accessories, installation and warranties should not exceed the regulated pricing approved by the Commission and the terms of supply should not be in conflict with terms of existing MAP and NMMP contracts.
- E. Other External Efficient Meter Financing: The Commission has also approved other external meter financing that are efficient, cost-effective, and in tune with the terms of existing MAP and NMMP contracts.

Table 23: Meter installations under the metering frameworks

S/N	Framework	Meter Installations in 2023
1	NMMP	25,847
2	MAP	585,265
3	DisCo Financed	53
4	Vendor Financed	6,912

A total of 25,847 meters were installed under the NMMP framework in 2023 (Table 23). Yola (16,574), Eko (6,324), and Benin (2,314) DisCos had the highest number of meter installations representing 64.12%, 24.47% and 8.95% respectively of customers metered under the framework in 2023. Jos (529), Kaduna (99), and Ibadan (7) DisCos recorded the least meter installations. Abuja, Enugu, Ikeja, Kano and Port Harcourt DisCos have achieved 100% meter installations from the meters allocated for customers within their franchise area under the framework.

The MAP framework accounted for a total of 585,265 meter installations In 2023. The increase in the number of meters installed in 2023 under the MAP framework can be attributed to the winding down of the NMMP phase zero which has led DisCos to intensify metering through the MAP framework in an attempt to further close the metering gap in the NESI. Ikeja (147,604; 25.22%), Ibadan (125,752;





21.49%), Abuja (103,200; 17.63%), Enugu (73,256; 12.52%), and Port Harcourt (48,989; 8.37%) DisCos that have completed their meter installations under the NMMP framework, recorded the highest number of meters installed under the MAP framework in 2023. Kaduna (9,887; 1.69%), Yola (2,681; 0.46%), and Kano (2,056; 0.35%) recorded the lowest meter installations under the MAP in 2023.

A total of 6,912 meters were installed under the Vendor Finance metering framework in 2023. Only three (3) DisCos; Benin (2,849), Ikeja (2,109), and Abuja (1,954) DisCos installed meters under the vendor-financed metering framework in 2023. A total of 53 customers were metered under the DisCo Financed framework by Kaduna DisCo in 2023.





7.4 Commercial Report

The commercial performance of the NESI is a measure of the flow of funds from customers to upstream electricity industry players. The financial performance is critical because funds are required for all the players along the value chain to sustain their operations. In evaluating the commercial performance of the NESI in 2023, the following parameters have been considered:

- A. Energy offtake performance
- B. Energy billed and billing efficiency
- C. Revenue and collection efficiency
- D. Aggregate Technical, Commercial and Collection (ATC&C) loss
- E. Remittances to the Market Operator (MO) and the Nigerian Bulk Electricity Trading Company (NBET)

7.4.1 Energy offtake performance

Effective July 1, 2022, the NESI transitioned into the Partial Activation of Contract (PAC) regime which enabled the DisCos to determine their unconstrained power requirements in absolute Megawatt (MW) known as their Partially Contracted Capacity (PCC). This marked a change from the previous regime under which energy was allocated to DisCo based on the % contained in the vesting contracts signed with NBET – “MYTO load allocation”. When the gross available generation is below the total PCC of the DisCos, the SO shall allocate capacities to the DisCos in line with the guidelines for the implementation of the Economic Merit Order of Dispatch (EMOD).

The PAC regime set out a framework to enable GenCos to earn capacity payments i.e., payments for making an agreed generation capacity available irrespective of whether it is dispatched by the SO or not. This is in line with international best





practices in power procurement contracting and it increases the predictability of revenue flows for GenCos, thus allowing for critical routine maintenance activities to improve the availability of their plants.

The PAC regime reinforces the DisCos capacity payment scheme which took effect on 1st January 2020 and acts as a deterrent against discretionary non-offtake of energy. To further improve contract discipline along the upstream segment of the NESI, the PAC regime provides for Liquidated Damages (LD) to be paid by GenCos to the DisCos in situations where the DisCo does not receive the contracted capacity due to challenges at the generation and/or transmission sub-segments¹⁵. In July 2022, updated Service Level Agreements (SLA) were signed between DisCos and TCN to institutionalise the compensation mechanism for DisCos when TCN's limitations prevent them from getting their contracted energy.

Each DisCo's load offtake performance for 2023 is presented in Table 24. Cumulatively, the DisCos' offtake performance in 2023 was 95.50%. Ten (10) DisCos took less energy than their PCC, and only Eko DisCo took more energy (107.69% offtake performance; offtake of 433.90MWh/h against PCC of 402.93MWh/h) than its allocation. Yola (92.77%), Enugu (89.91%) and Jos (87.19%) DisCos recorded the lowest energy offtake performances.

Table 24: Energy Offtake Performance in 2023

DisCos	Offtake (MWh/h)	PCC (MWh/h)	Offtake Performance (%)
Abuja	511.76	545.69	93.78%
Benin	291.28	306.62	95.00%
Eko	433.90	402.93	107.69%
Enugu	287.69	319.99	89.91%
Ibadan	405.97	417.24	97.30%
Ikeja	533.49	559.58	95.34%

¹⁵ Liquidated Damages (LD) are only due when issues are not Force Majeure i.e. the issues are within the control of the TCN/GenCo.





DisCos	Oftake (MWh/h)	PCC (MWh/h)	Oftake Performance (%)
Jos	177.94	204.08	87.19%
Kaduna	210.38	219.22	95.97%
Kano	213.56	226.68	94.21%
Port Harcourt	249.61	266.48	93.67%
Yola	106.74	115.06	92.77%
All DisCos	3,422.31	3,583.57	95.50%

7.4.2 Energy Billed and Billing Efficiency

Billing Efficiency measures the proportion of energy billed to customers (including metered and unmetered customers) relative to the total energy supplied to a given area over a period. The formula for billing efficiency is represented by equation 7.6.

$$\text{Billing Efficiency (\%)} = \frac{\text{Total Units Billed (kWh)}}{\text{Total Energy Received by the Network (kWh)}} \times 100 \quad (7.6)$$

The amount of energy received by DisCos at their trading points in 2023 was 29,979.46GWh, out of which 23,747.75GWh was billed to the end-users, resulting in a billing efficiency of 79.21%. Billing Efficiency covers the technical and commercial loss components in the Aggregate, Technical, Commercial and Collection (ATC&C) loss. Some of the major factors that contribute to billing losses are detailed below.

- A. Poor customer enumeration: this is the inability of DisCos to identify all electricity consumers.
- B. Inaccurate meters/outdated meters: this is the inability of DisCos to accurately measure the electricity consumed by end users due to the unavailability of meters or the use of obsolete meters at user sites.
- C. Energy theft: this is the deliberate action by some electricity consumers to consume electricity without making payments.
- D. Technical loss: this is the energy loss to wires and transformers (technical losses) which also contributes to DisCos' billing inefficiency and this is





particularly relevant for areas of the network with substandard or aged infrastructure.

The billing efficiency performance of all DisCos contained in Table 25 shows that Eko and Ikeja had the highest billing efficiencies of 89.50% and 87.82% respectively for 2023. Conversely, Kaduna recorded the lowest billing efficiency of 53.18%, indicating that Kaduna DisCo lost 46.82% of the energy received to technical and commercial inefficiencies in 2023.

Table 25: Energy Received and Billed by DisCos in 2023

DisCos	Total Energy Received (GWh)	Total Energy Billed (GWh)	Billing Efficiency (%)
Abuja	4,483	3,239	72.25
Benin	2,552	2,179	85.40
Eko	3,801	3,402	89.50
Enugu	2,520	1,868	74.13
Ibadan	3,556	2,824	79.41
Ikeja	4,673	4,104	87.82
Jos	1,559	1,266	81.19
Kaduna	1,843	980	53.18
Kano	1,871	1,326	70.89
Port Harcourt	2,187	1,808	82.73
Yola	935	750	80.25
All DisCos	29,979	23,747	79.21

The Commission continues to engage DisCos on regulatory interventions to address the factors driving DisCos' billing inefficiency. The key driver of technical losses is infrastructure inadequacy. DisCos must therefore implement projects contained in their respective Performance Improvement Plans (PIP) as approved by the Commission in 2021. To address the commercial component of billing inefficiency, DisCos must undertake holistic asset mapping and customer enumeration process which will facilitate the identification of illegal electricity consumers.





7.4.3 Revenue and Collection Efficiency

Collection efficiency is the ratio of the amount that is collected from customers compared to the amount billed to them by the DisCos. The significant under-recovery of the bills issued to customers by DisCos is driven by a lack of willingness of customers to pay bills when due, unsatisfactory DisCos' services and inadequate customer metering among other challenges. The formula for collection efficiency is represented by equation 7.7.

$$\text{Collection Efficiency (\%)} = \frac{\text{Revenue Collected}}{\text{Billed Amount}} \times 100 \quad (7.7)$$

The total revenue collected by the DisCos from customers in 2023 was ₦1,077.51 billion out of the total bill of ₦1,463.24 billion to customers, leaving an outstanding balance of ₦385.73 billion. This translates to a collection efficiency of 73.64% which implies that for every ₦100.00 worth of energy billed to customers by DisCos in 2023, approximately ₦26.36 was not recovered from customers. The low collection efficiency combined with billing inefficiency has continued to adversely impact the financial liquidity of the industry, ultimately limiting the NESI's ability to grow and attract investment.

In 2023, only Ikeja had a collection efficiency above 90% which can be partly attributable to the fact that it leads the DisCos in terms of overall metering rate (72.54%) as of the end of 2023. This was followed by Eko and Abuja DisCos with collection efficiencies of 84.31% and 80.19% respectively, conversely, Yola DisCo had the lowest collection efficiency of 43.56% (Table 26).





Table 26: Revenue Performance of DisCos in 2023

DisCos	Total Billings (₦'Billion)	Revenue Collected (₦'Billion)	Collection Efficiency (%)
Abuja	212,253	170,203	80.19
Benin	132,117	84,927	64.28
Eko	211,241	178,091	84.31
Enugu	111,667	83,282	74.58
Ibadan	164,917	113,474	68.81
Ikeja	236,899	222,431	93.89
Jos	89,308	40,346	45.18
Kaduna	58,160	32,730	56.28
Kano	83,848	54,086	64.50
Port Harcourt	110,084	74,963	68.10
Yola	52,745	22,976	43.56
All DisCos	1,463,239	1,077,509	73.64

7.4.4 Aggregate Technical, Commercial and Collection (ATC&C) Loss

The Aggregate Technical, Commercial and Collection (ATC&C) loss is the measure of the gross losses incurred by a DisCo in supplying electricity to end-use customers; it measures the revenue shortfall a DisCo suffers arising from a combination of billing (technical and commercial) as well as collection losses. The ATC&C loss comprises the following components:

- A. Technical Loss: heat loss due to load flow in electrical lines and transformation loss in transformers.
- B. Commercial Loss: due to discrepancy in meter reading, erroneous billing, unmetered consumption, or energy theft.
- C. Collection Loss: unpaid bills.

The formula for ATC&C loss is represented by equation 7.8.

$$\text{ATC\&C Loss} = [1 - (\text{Billing Efficiency} \times \text{Collection Efficiency})] \times 100 \quad (7.8)$$





The ATC&C loss is a critical performance parameter for tariff determination because it is used to set efficiency targets for the DisCos; the ATC&C rate provided in the tariff represents the efficient losses which the DisCos are allowed to recover from customers. The Tariff Orders issued to DisCos make allowance for specific ATC&C loss level targets for each DisCo. Just as the case of TLF explained in section 7.2.1, the Commission has the responsibility of constantly reviewing the allowed ATC&C for each DisCo to reflect the maturity of the market and investments being made by the DisCo.

The average ATC&C loss for all the DisCos in 2023 was 41.67% comprising 20.79% technical and commercial losses, and 26.36% collection loss. Collection losses (including unpaid bills from sensitive customers, disputed bills, etc.) continue to form a substantial part of the ATC&C loss. This reinforces the need for DisCos to intensify efforts in revenue collection to improve their cash flow and meet market obligations. Non-payment of bills by Federal/State Ministries, Departments and Agencies (MDA) also continues to contribute to the ATC&C loss incurred by DisCos. To avoid a moral hazard that may hinder regulatory action on underperforming DisCos, the government across all tiers must pay their bills fully and promptly.

Table 27: ATC&C Loss of DisCos in 2023

DisCos	MYTO Targets	Average ATC&C Loss	Variance; target-actual (pp)
Abuja	19.27%	42.06%	-22.79
Benin	17.37%	45.11%	-27.74
Eko	14.18%	24.54%	-10.36
Enugu	11.31%	44.72%	-33.41
Ibadan	15.47%	45.36%	-29.89
Ikeja	11.37%	17.54%	-6.17
Jos	27.27%	63.32%	-36.05
Kaduna	10.65%	70.07%	-59.42
Kano	15.85%	54.27%	-38.42
Port Harcourt	21.45%	43.66%	-22.21
Yola	64.12%	65.04%	-0.92





DisCos	MYTO Targets	Average ATC&C Loss	Variance; target-actual (pp)
Overall MYTO Level	20.75%		
Aggregate technical, commercial & collection Loss	-	41.67%	
Technical & Commercial Losses	-	20.79%	
Collection Losses	-	26.36%	

The overall ATC&C loss of 41.67% in 2023 was substantially higher than the efficient ATC&C loss provided in the MYTO for 2023 (20.75%). The inability of the DisCos to meet their allowed loss targets and the consequential inability to meet revenue requirements compromises their long-term financial position.

In absolute terms, Ikeja maintained its record of having the lowest ATC&C in the market (17.54%) for the sixth consecutive year (Table 27). Conversely, Kaduna was the worst performing DisCo with an ATC&C of 70.07% in 2023, this means that for every ₦100.00 worth of energy delivered by the DisCo in 2023, it only collected ₦29.93 in revenue from customers.

Although none of the DisCos met their MYTO ATC&C targets, Yola and Ikeja were the closest to attaining their MYTO target for the year with variances of -0.92pp (target of 64.12% vs 65.04%) and -6.17pp (target of 11.37% vs 17.54%) respectively. Kaduna, Kano, and Jos DisCos had the widest variances relative to their allowed MYTO targets for the year with -59.42pp (target of 10.65% vs 70.07%), -38.42pp (target of 15.85% vs 54.27%), and -36.05pp (target of 27.27% vs 63.32%) respectively.

7.4.5 Market Remittance

In the absence of cost-reflective tariffs, the Government commits to cover the resultant gap (difference between the cost-reflective and allowed tariff) in the form of a "tariff shortfall" subsidy which is applied to the NBET invoices that are to be paid by





DisCos. The Commission is responsible for determining each DisCo's Minimum Remittance Obligation (MRO) based on its allowed tariff – the MRO is contained in the periodic Tariff Orders issued by the Commission. For ease of administration of the subsidy, the MRO is only applied on the NBET invoice and represents the share (in percentage) of an NBET invoice which the DisCo is expected to pay. DisCos are required to pay 100% of the invoice issued to them by the MO for transmission and other services.

The implementation of the MRO sought to end the discretionary remittances by DisCos, ensure transparency and equity in the disbursement of market funds for the benefit of all participants in the industry and ultimately address the liquidity crisis facing the industry¹⁶. The applicable MRO (%) for each DisCo to NBET in 2023 is contained in Table 28. The cumulative MRO for DisCos was 52.92% (₦685.69 billion out of ₦1,295.75 billion NBET invoices), meaning that the government incurred a subsidy obligation of ₦610.06 billion (47.08% of total NBET invoices).

Table 28: Minimum Remittance Obligation of DisCos to NBET & MO in 2023

DisCos	Minimum Remittance Obligation (NBET)	Minimum Remittance Obligation (MO)	Remittance Obligation (NBET & MO)
Abuja	65.17%	100%	69.17%
Benin	48.27%	100%	54.47%
Eko	57.45%	100%	62.52%
Enugu	57.30%	100%	62.33%
Ibadan	46.99%	100%	53.37%
Ikeja	60.37%	100%	64.96%
Jos	35.99%	100%	43.97%
Kaduna	44.00%	100%	50.70%
Kano	48.70%	100%	54.77%
Port Harcourt	52.95%	100%	58.46%
Yola	13.19%	100%	21.39%
All DisCos	52.92%	100%	58.44%

¹⁶Specifically, low remittance in the industry adversely affects the ability of NBET to honour its financial obligations to GenCos, while service providers (i.e., TSP, SO, MO, NBET and NERC) struggle with paucity of funds which adversely impacts their ability to discharge their functions optimally.





An MRO-adjusted invoice of ₦858.03 billion was issued by NBET and MO for energy costs and administrative services to DisCos in 2023. The DisCos remitted a total of ₦706.73 billion, resulting in a deficit of ₦151.30 billion during the year – this underpayment is known as “market shortfall”. Based on the above, the gross DisCo remittance rate to the upstream segment for 2023 was 82.37%.

A comparative analysis of DisCos’ market invoice (NBET + MO) and remittance in 2023 is presented in Figure 14. Eko DisCo recorded remittance performance above 100% (102.91%)¹⁷ while 3 DisCos; Yola, Benin, and Ibadan recorded remittance performances above 90% (98.71%, 92.12% and 90.19% respectively). Kaduna DisCo recorded the lowest remittance rate of 15.97% in 2023 due to its significant ATC&C losses, as mentioned in earlier section 7.4.4.

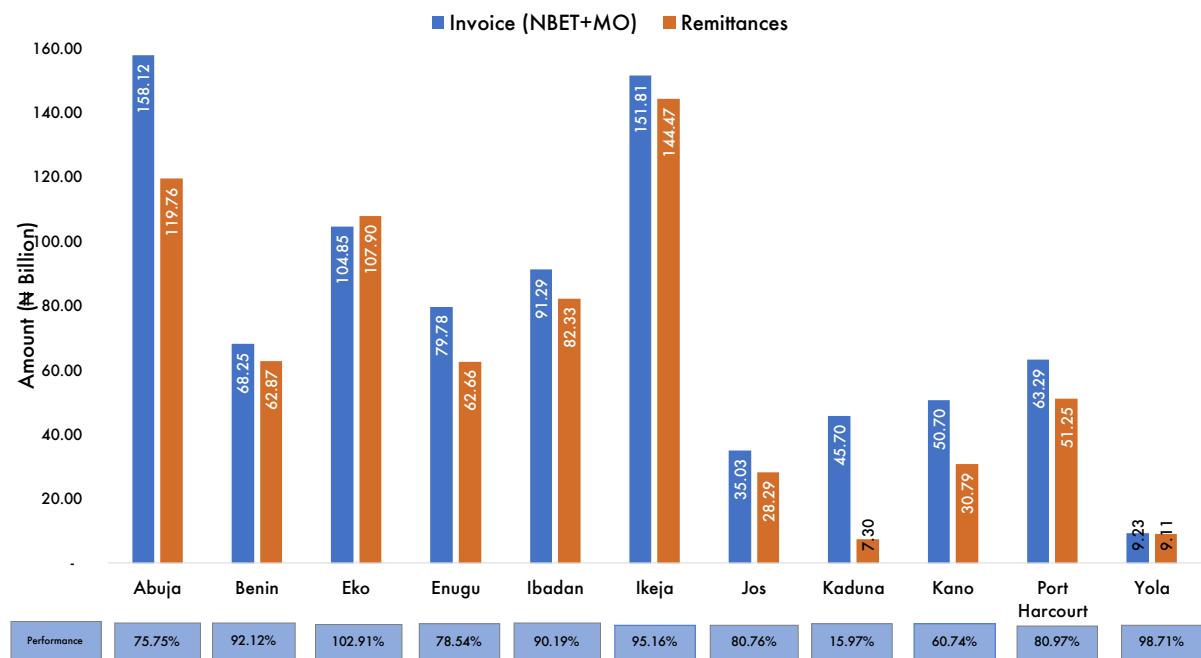


Figure 14: DisCos’ Remittance Performance to NBET and MO in 2023

¹⁷ Remittance performance above 100% is due to payment of outstanding invoices.



The DisCos' disaggregated remittances to NBET and MO are summarised in Table 29. Out of the ₦685.69 billion invoice issued by NBET in 2023, DisCos remitted ₦578.43 billion translating to a remittance performance of 84.34%. The top-performing DisCos were Eko (105.76%), Yola (105.24%)¹⁸, Ikeja (96.20%), Benin (95.15%) and Ibadan (93.11%). Conversely, Kaduna DisCo recorded the lowest remittance performance to NBET in 2023 (17.59%).

The MO invoice in 2023 was ₦172.33 billion, and the DisCos remitted ₦128.40 billion, translating to a 74.51% remittance performance rate. The top-performing DisCos were Yola (90.91%), Eko (90.85%) and Ikeja (90.38%) with remittances above 90% to the MO in 2023. Conversely, Kaduna DisCo recorded the lowest remittance (10.75%) to MO in 2023.

Table 29: DisCos Remittance Performance to NBET and MO in 2023

DisCos	NBET (₦' Billion)			MO (₦' Billion)		
	Invoice 2023	Remit. 2023	Performance 2023	Invoice 2023	Remit. 2023	Performance 2023
Abuja	131.92	98.96	75.02%	26.20	20.79	79.35%
Benin	53.22	50.64	95.15%	15.03	12.23	81.37%
Eko	84.86	89.75	105.76%	19.99	18.16	90.85%
Enugu	64.70	52.80	81.61%	15.08	9.86	65.38%
Ibadan	70.72	65.85	93.11%	20.56	16.49	80.20%
Ikeja	124.77	120.03	96.20%	27.04	24.44	90.38%
Jos	25.09	21.82	86.97%	9.94	6.47	65.09%
Kaduna	34.91	6.14	17.59%	10.79	1.16	10.75%
Kano	39.79	25.20	63.33%	10.95	5.60	51.14%
Port Harcourt	50.61	41.74	82.47%	12.68	9.50	74.92%
Yola	5.15	5.42	105.24%	4.07	3.70	90.91%
All DisCos	685.69	578.34	84.34%	172.33	128.40	74.51%
Special Customer: ('Million) (₦)						
Ajaokuta Steel	2,260.10	0.00	0.00%	297.07	0.00	0.00%

1. NBET and MO are Nigeria Bulk Electricity Trader and Market Operator respectively.

2. Remittances above 100% are due to payment of outstanding invoices.

¹⁸ Yola DisCo was privatised in 2021 and had its ATC&C allowance reset with an expectation that it would enjoy FGN subsidy to cover the gap between the allowed tariffs and the resultant cost-reflective tariffs. Consequentially, it continues to enjoy very low remittance obligations to NBET which explains its relatively high remittance rate.





It is clear from the remittance figures above that challenges persist with the upstream market liquidity. With the payment assurance waterfall¹⁹ in place, DisCos' inability to remit also confirms that they were unable to earn their entire revenue requirement, which would have prevented them from having the funds to undertake necessary operational/capital investments. DisCos are the last mile in the energy trading value chain and should implement measures to improve revenue recovery to guarantee the flow of funds to upstream sector participants as well as sustain their own operations and long-term financial sustainability.

On its part, the Commission is committed to ensuring full compliance with MROs for which failure to comply will result in appropriate sanctions. In this regard, to enforce market discipline and compliance with payment obligations, the Commission has directed NBET to exercise its contractual rights on the payment security cover provided by DisCos in accordance with the provisions of the Market Rules.

Ajaokuta Steel Co. Ltd and the host community did not make any payment with respect to the ₦2.26 billion and ₦0.29 billion energy invoices and service charges received from NBET and MO respectively, in 2023. As detailed in the quarterly reports, the Commission has escalated the issue of continual non-payment of electricity bills by Ajaokuta to the relevant federal ministries to find a lasting solution. Failure to settle the obligations may put the Ajaokuta complex at risk of being disconnected from its service providers (NBET and MO) on the grounds of gross indebtedness.

¹⁹ In June 2020, the remit of the fund manager responsible for the escrow was expanded to include the implementation of the payment waterfall framework which was designed by the Commission to increase upstream market remittance to NBET and TCN. This was to cover the cost of energy taken from GenCos, transmission charges (payable to the TSP) and the MO's administrative charges.





The remittance performance of local and international bilateral customers to MO in 2023 is contained in Table 30. The international bilateral customers (i.e., Societe Nigerienne d'electricite – NIGELEC, Societe Beninoise d'Energie Electrique – SBEE and Compagnie Energie Electrique du Togo – CEET) received a total invoice of \$53.55 million from the MO in 2023 and made a total payment of \$50.36 million corresponding to a remittance performance of 94.04%. The local bilateral customers received a total invoice of ₦10,320.84 million from MO in 2023 and made a payment of ₦8,766.15 million corresponding to a remittance performance of 84.94%.

The Commission has requested the MO to enforce the payment assurance mechanisms provided in the Market Rules when bilateral customers default in settling their invoices. Pursuant to this, all bilateral customers are expected to post the relevant guarantees with the MO and these are to be drawn down by the MO when the customers do not make necessary payments within the approved timelines.

Table 30: Bilateral Customers (International & Local) Invoices & Remittances in 2023

International Customers	Invoice (\$'million)	Remittance (\$'million)	Performance (%)
Paras - SBEE	11.67	11.67	100.00
Transcorp/SBEE	13.58	13.58	100.00
Mainstream/NIGELEC	12.44	12.45	100.08
Odukpani/CEET	15.86	12.66	79.82
Total	53.55	50.36	94.04
Bilateral Customers	Invoice (₦' million)	Remittance (₦' million)	Performance (%)
Egbin Ikeja	0.00	0.00	0.00
Mainstream/Inner Galaxy			
Mainstream /Kam Industries			
Mainstream / Kam Integrated			
Mainstream /PRISM	4,422.55	4,455.78	100.75
Mainstream /ZERBERCED			
Mainstream /Kam Steel Shagamu			
Mainstream /Adefolorunsho Venture			





Odukpani / Sunflag	155.43	29.14	18.75
Omotosho 11/Pulkit			
Omotosho II /Weewood	214.05	138.65	64.77
North South/ Star Pipe	124.67	124.67	100.00
Trans-Amadi/FMPI			
Trans-Amadi/ OAU	131.98	110.60	83.80
Omotosho 11/EKOEDC	3,287.60	3,287.60	100.00
Alaoji GenCo/APLE (₦)	1,515.02	230.00	15.18
Taopex/Kam Steel Shagamu	440.90	389.71	88.39
Taopex/Kam Integrated			
Jebba/Quantum Steel	28.64	0.00	0.00
Total	10,320.84	8,766.15	84.94

1. Remittances above 100% are due to payment of outstanding invoices.





Appendix



A. Human Resource Management

Table A.1: Forum Secretaries of the Commission as of 31st December 2023

S/N	Name	Forum Office
1	Emeka Stanley Anako	Abakaliki Forum Office, Ebonyi State
2	Adesoji Oluwo	Abeokuta Forum Office, Ogun State
3	Grace Ekpenyong	Abuja Forum Office, FCT
4	Nnabuife J. Ogana	Asaba Forum Office, Delta State
5	Princess Agwu	Awka Forum Office, Anambra State
6	Akiti Wilson Barguma	Bauchi Forum Office, Bauchi State
7	Victor O. Odiase	Benin Forum Office, Edo State
8	Blessing Ikharo Abua	Calabar Forum Office, Cross River State
9	Ado Jamilu	Dutse Forum Office, Jigawa State
10	Chikaeze Osakumi	Eko Forum Office, Lagos State
11	Anuoluwapo Akintayo	Ekiti Forum Office
12	Henrietta Ene	Enugu Forum Office, Enugu State
13	Abubakar Yuguda	Gombe Forum Office
14	Bashir Adam	Damaturu Forum Office, Gombe State
15	Aminu Dauda	Gusau Forum Office, Zamfara State
16	Olaiya O. Abe	Ibadan Forum Office, Oyo State
17	Damilola Akintokunbo	Ikeja Forum Office, Lagos State
18	Chukwunonso Joachim	Ikeja Forum Office, Lagos State
19	Oluwakemi Mary Iyanda	Ilorin Forum Office, Kwara State
20	Ja'afar Ibrahim*	Jigawa Forum Office, Jigawa State
21	Samuel Andzenge	Jos Forum Office, Plateau State
22	Mansur Abdullahi	Kaduna Forum Office, Kaduna State
23	Ja'afar Ibrahim	Kano Forum Office, Kano State
24	Abubakar Kurna	Katsina Forum Office, Katsina State
25	Umar Khalifa	Kebbi, Forum Office
26	Samuel Negedu	Lafia Forum Office, Nasarawa State
27	Nebo Joseph	Lokoja Forum Office, Kogi State
28	Pamela Ishaya Zakari	Makurdi Forum Office, Benue State
29	Afaoma Ubani	Owerri Forum Office, Imo State
30	Azeez Mutiu Akofe	Osogbo Forum Office, Osun State
31	Daniel Osumawei	Port-Harcourt Forum Office, River State
32	Kabiru. U. Musa	Sokoto Forum Office, Sokoto State
33	Chioma Okechukwu	Umuahia Forum Office, Abia State
34	Peter A. Dickson	Uyo Forum Office, Akwa Ibom State
35	Sydney W. Maksha	Yola Forum Office, Adamawa State





B. Licence, Permit and Certification

Table B.1: Licences issued and renewed by the Commission in 2023

S/N	Applicants	Capacity (MW)	Licence Type	Location	Fuel Type
A. New Issue					
1	Alausa Power Limited	23.00	Off-Grid Generation	Oregun, Lagos	Gas
2	ABV Utility Limited	20.00	IEDN	Lekki, Lagos	NA
3	Waltersmith Industrial Park Electricity Distribution Company Limited	NA	IEDN	Ohaji-Egbema, Imo	NA
4	Waltersmith Ugamma Power Company Limited	200.00	IEDN	Ohaji-Egbema, Imo	Gas
5	Zungeru Hydro Electricity	700.00	On-Grid Generation	Kaduna River, Niger State	Hydro
6	Electric Utility Nigeria Limited	NA	Trading License	NA	NA
7	Onction Services Limited	NA	Trading License	NA	NA
8	Daybreak Power Solutions Limited	1.40	Off- Grid Generation	Lagos State	Solar
9	Daybreak Power Solutions Limited	1.50	Off- Grid Generation	Abia State	Solar
10	Daybreak Power Solutions Limited	1.58	Off- Grid Generation	Borno State	Solar
11	Daybreak Power Solutions Limited	1.60	Off- Grid Generation	Kano State	Solar
12	Daybreak Power Solutions Limited	2.73	Off- Grid Generation	Lagos State	Solar
13	Ekiti IPP Limited	5.00	Embedded Generation	Ekiti State	Gas
14	Olokiti Power Distribution Limited	NA	IEDN	Ekiti State	NA
15	Ember Power Limited	NA	Trading License	Lagos State	NA
16	Ibadan Hybrid Power Limited	30.00	Embedded Generation	Oyo State	Gas
17	Alaro Power Free Zone Enterprise	10.00	Embedded Generation	Lagos State	Gas
18	Ibadan Hybrid Distribution Limited	NA	IEDN	Oyo State	NA
19	Isolo Power Supply Company Limited	NA	IEDN	Lagos State	NA
20	Zeta Technical Services Limited	NA	IEDN	Lagos State	NA
21	Rensource Commercial and Industrial Limited	5.00	Off-grid Generation	Abuja	Solar
22	CrossBoundary Nigeria Limited	2.50	Off-grid Generation	Oyo State	Solar
23	Adefolunsho Energy Network Limited	NA	Trading License	NA	NA
24	Midbelt Energy Company Limited	NA	Trading License	NA	NA
B. Renewal					
25	Island Power Limited	10.00	Embedded generation	Lagos State	Gas
26	Energy Company of Nigeria Limited	NA	IEDN	Lagos State	NA
27	Isolo Power Generation Limited	20.00	Renewal	Lagos State	Gas
C. License Amendment					
28	Daybreak Power Solutions Limited	3.50 to 5.70	Amendment	Kano State	Gas
29	Daybreak Power Solutions Limited	1.60 to 2.70	Amendment	Oyo State	Gas
30	Daybreak Power Solutions Limited	1.50 to 2.10	Amendment	Abuja	Gas

*IEDN is an acronym for an Independent Electricity Distribution Network





Table B.2: Captive power generation Permits granted by the Commission in 2023

S/N	Applicants	Location	Capacity (MW)
A. Permit Issued			
1	E.T Energy Enterprises Global Limited	Obiowo Ezeaba Nkamu, West, Enugu State	8.00
2	Rack Centre Nigeria Limited	18 Jagal Close Oregun, Lagos State	10.00
3	Saipem Contracting Nigeria Limited	JV Camp, Rivers State	5.14
4	Saipem Contracting Nigeria Limited	Workers Village Camp, Rivers State	10.05
5	CHI Limited	14 Chivita Avenue, Ajao Estate, Lagos State	23.59
6	Tower Alloys Industries Limited	Ota Industrial Estate, Ota, Ogun State	10.00
7	Junaid Synergy Limited	Kudirat Abiola Way, Ikeja, Lagos State	1.20
8	Okomu Oil Palm Limited	Okomu, Ovia South, Edo State	8.86
9	British American Tobacco Company Limited	Ibadan, Oyo State	1.40
10	Pardee Foods Nigeria Limited	Sango Otta, Ogun State	3.87
11	Geeta Plastic Products Nigeria Limited	Mushin, Lagos State	1.80
12	First Global Commerce Solutions Limited	Lagos State	77.00
13	Wacot Rice Argungu Limited	Kebbi State	1.58
14	Mangal Industries Limited	Kogi State	50.00
15	Open Access data centre Limited	Lagos State	3.20

* CPG is an acronym for Captive Power Generation





Table B.3: Mini-grid registrations and Permits approved by the Commission in 2023

S/N	Name	Location	Capacity (Kw)
A. Approved Registration			
1	Zylab Technology Nigeria Limited	Ankpa, Kogi	100.00
2	Solonic Energy Limited	Bakonu Community, Nasarawa	100.00
3	ACOB Lighting Limited	Oretedo, Odigbo, Ondo	40.00
4	ACOB Lighting Tech Limited	Sule, Ovia Southwest, Edo	60.00
5	Powergen Nigeria Assets Limited	Idanre, Ondo State	860.00
6	Darway Coast Nigeria Limited	Ifo, Ogun State	698.00
7	Bagaja Renewable Limited	Kumbosto, Kano State	450.00
8	Bagaja Renewable Limited	Kumbosto, Kano State	550.00
9	Solmenz Engineering Venture Nigeria Limited	Gbako, Niger State	147.00
10	A4&T Projects Limited	Fagbo, Ondo State	169.00
11	GVE Projects Limited	Bakin Ciawa, Plateau State	630.00
12	GVE Projects Limited	Kwande, Plateau State	340.00
13	Everlink Telesat Network Limited	Akugbene, Delta State	950.00
14	Everlink Telesat Network Limited	Ogbidubudu, Delta State	460.00
15	Maskh Nigeria Limited [#]	Bauchi State	190.00
16	Acob Lightning Technology Limited ⁺	Kaduna State	350.00
17	NxtGrid Nigeria Limited	Edo State	13.65
18	NxtGrid Nigeria Limited	Edo State	50.05
19	NxtGrid Nigeria Limited	Ondo State	77.35
20	Sholep Energy Limited	Osun State	100.00
21	Orahachi Investment Limited	Kogi State	50.00
22	Ochuvus Nigeria Limited	Niger State	100.00
23	Ochuvus Nigeria Limited	Enugu State	100.00
24	Community Energy Social Enterprises Limited	Osun State	74.00
25	Community Energy Social Enterprises Limited	Osun State	74.00
26	Community Energy Social Enterprises Limited	Osun State	49.00
27	Community Energy Social Enterprises Limited	Osun State	49.00
28	Sandstream Nigeria Limited	Kano State	169.00
B. Approved Permits			





29	Darway Coast Nigeria Limited	Ijoko, Ogun	993.80
30	Nayo Tropical Technical Limited	Rafin Zurfi Community, Gwagwalada	40.00
31	Everlink Telecast Limited	Tamigbe, Burutu	360.00
32	Ventura Logistics Services Limited	Amaechi Okposo, Ohaozara, Ebonyi	75.00
33	Vaya Energy Solutions Limited	Belel Community, Maiha, Adamawa	200.00
34	A4 & T Power Solutions Limited	Lagos State	880.00
35	Ashipa Electric Limited	Bayelsa State	200.00
36	Eauxwel Nigeria Limited	Abia State	100.00
37	Prado Power Limited	Benue State	470.00
38	Havenhill Energy Limited	Kwara State	150.00
39	A4 & T Power Solutions Limited	Ondo State	339.00
40	A4 & T Power Solutions Limited		979.00
41	Metikon Engineering Limited	Ondo State	278.40
42	Metikon Engineering Limited	Cross River State	278.40
43	Husk Power Energy System Nigeria Limited	Cross River State	100.00
44	Independent Energy Projects Financial Limited	Nasarawa State	169.00
45	Independent Energy Projects Financial Limited	Plateau State	169.00
46	International Energy Services Limited	Plateau State	186.00

*Registration certificates were approved for nine (9) sites within Itas, Gadau, Ganjuwa & Katogun local governments of Bauchi State.

*Registration certificates were approved for ten (10) sites within Kauru local government of Kaduna State.





Table B.4: Meter service providers certified by the Commission in 2023

S/N	Applicant	Application Type
1	Dexta Integrated Global Services Limited	Installer A2
2	Zelectric Engineering Nigeria Limited	Installer A1
3	B.M.W	Installer C1
4	Visotek Nigeria Limited	Installer C1
5	Zelectric Engineering Nigeria Limited	Installer A1
6	Morgan Energy Limited	Installer A1
7	Brylali Engineering Services Limited	Installer A1
8	Powerdrones Engineering Limited	Installer A1
9	Pontes Monnies Consult Limited	Installer A1
10	Yisconfen International Company Limited	Installer A1
11	Emdee Engineering Limited	Installer A1
12	Empic Engineering Company Limited	Installer A1
13	Adeq Global Resources Limited	Installer A1
14	Primepro Power Limited	Installer A1
15	Fulenell Nigeria Limited	Installer A1
16	Beresford Integrated Services Ltd	Installer A1
17	Goldengates options Ltd	Installer C1
18	J. Marine Logistics Limited	Manufacturer
19	Paktim Metering Nigeria Limited	Manufacturer
20	Pactim Metering Nigeria Limited	Manufacturer
21	Direct Credit E- Solution Nigeria Limited	Manufacturer
22	Metering Solutions Manufacturing Services Limited	Manufacturer
23	Direct Credit E- Solution Nigeria Limited	Manufacturer
24	Maskh Nigeria Limited	Importer
25	Kayz Consortium Limited	MAP Permit
26	Crestflow Energy Limited	MAP Permit
27	Chris-Ejik International Agencies Limited	MAP Permit
28	Crestflow Energy Limited	MAP Permit
29	Aries Electric Limited	MAP Permit
30	Klartek Nigeria Limited	MAP Permit
31	Integrated Resources Limited	MAP Permit
32	G. Unit Engineering Limited	MAP Permit
33	KAYZ Consortium Limited	MAP Permit

Class "A1" Certification authorises a holder to undertake installations of (i) Low Voltage single-phase and three-phase Metering systems for installation exceeding 750 metering Systems/Contract, and (ii) Installations at grid voltages exceeding 5 Metering Systems.¹ Class "C1" Certification authorises a holder to undertake installations of Low Voltage Distribution single-phase and three-phase Metering Systems exceeding 500 Metering Systems/Contract.



C. Customer Complaints

Table C.1: Customer complaints received and resolved by DisCos in 2023

DisCos	2023/Q1			2023/Q2			2023/Q3			2023/Q4			2023		
	Customers' Complaints ('000)			Customers' Complaints ('000)			Customers' Complaints ('000)			Customers' Complaints ('000)			Customers' Complaints ('000)		
	Received	Resolved	Unresolved	Received	Resolved	Unresolved									
Abuja	26.10	25.68	0.41	29.83	29.43	0.40	30.75	30.46	0.28	30.05	29.73	0.31	116.73	115.31	1.42
Aba	-	-	-	-	-	-	1.91	1.28	0.63	2.11	1.13	0.97	4.02	2.42	1.60
Benin	5.87	5.57	0.29	23.36	22.79	0.56	12.18	12.01	0.17	8.89	8.58	0.30	50.30	48.96	1.34
Eko	24.59	22.60	1.99	48.39	47.10	1.29	51.36	47.30	4.05	52.56	50.04	2.51	176.92	167.06	9.85
Enugu	41.58	39.06	2.52	42.54	39.37	3.17	47.55	43.90	3.65	42.36	39.80	2.55	207.21	195.26	11.94
Ibadan	37.98	34.53	3.45	55.11	52.74	2.36	59.90	56.67	3.22	54.21	51.31	2.90	110.22	93.90	16.31
Ikeja	28.34	18.74	9.60	28.77	26.39	2.37	28.24	25.63	2.61	24.85	23.13	1.72	81.17	77.39	3.78
Jos	14.69	13.80	0.89	27.73	26.90	0.82	20.46	19.49	0.96	18.28	17.19	1.09	30.22	28.47	1.74
Kaduna	7.17	6.77	0.40	7.52	7.04	0.48	8.01	7.52	0.48	7.50	7.12	0.37	52.38	52.18	0.19
Kano	13.23	13.15	0.08	11.90	11.87	0.03	13.98	13.94	0.04	13.25	13.21	0.04	205.05	201.66	3.38
P/H	47.77	46.90	0.87	48.05	47.14	0.90	55.76	55.15	0.60	53,467	52.47	0.99	11.93	11.73	0.19
Yola	2.30	2.25	0.04	2.66	2.63	0.03	3.81	3.77	0.03	3.14	3.07	0.07	207.21	195.26	11.94
Average	22.69	20.82	1.87	29.62	28.49	1.13	27.82	26.43	1.39	25.89	24.73	1.15	101.68	96.37	5.30
Total	249.68	229.10	20.58	325.89	313.44	12.45	333.94	317.17	16.76	310.71	296.83	13.88	1,220.24	1,156.55	63.69





Table C.2: Category of customer complaints received by DisCos, 2018-2023

Complaint Categories	2023 ('000)					2022 ('000)					2021 ('000)				
	/Q1	/Q2	/Q3	/Q4	Annual	/Q1	/Q2	/Q3	/Q4	Annual	/Q1	/Q2	/Q3	/Q4	Annual
Metering	118.99	149.71	191.36	177.52	638.32	79.63	111.95	117.26	122.80	431.66	50.32	50.65	55.28	53.30	209.58
Interruption	23.01	23.61	26.94	24.55	98.13	37.18	23.43	21.75	24.23	106.60	43.61	48.21	45.06	38.45	175.34
Voltage	4.27	4.33	4.49	4.80	17.80	16.27	9.98	4.13	4.34	34.74	22.89	29.32	30.23	26.07	108.53
Load Shedding	1.51	2.43	1.66	0.86	6.48	14.71	5.33	1.30	1.46	22.82	17.79	18.22	14.36	14.14	64.52
Billing	56.72	53.36	43.02	42.86	195.97	41.64	32.93	49.92	61.02	185.52	38.92	42.76	48.54	39.39	169.62
Disconnection	4.11	4.69	4.91	4.26	17.98	26.99	7.25	7.34	4.84	46.43	34.36	31.31	31.01	28.12	124.82
Connection Delay	3.69	3.06	2.07	0.52	9.35	12.79	2.99	1.28	2.95	20.02	19.22	15.98	14.82	14.76	64.79
Others	37.17	65.80	59.45	55.30	218.24	14.14	38.01	38.22	39.43	129.81	9.80	4.97	7.78	8.37	30.92
Total	249.68	325.89	333.94	310.71	1,220.24	243.38	231.90	241.24	261.10	977.64	236.93	241.47	247.11	222.63	948.17
Complaint Categories	2020 ('000)					2019 ('000)					2018 ('000)				
	/Q1	/Q2	/Q3	/Q4	Annual	/Q1	/Q2	/Q3	/Q4	Annual	/Q1	/Q2	/Q3	/Q4	Annual
Metering	44.66	48.01	71.89	41.45	206.03	37.12	46.43	38.83	41.54	163.94	18.20	43.89	35.87	32.67	130.60
Interruption	41.38	39.86	34.19	37.63	153.08	14.39	12.92	22.09	24.92	74.33	13.65	21.97	28.56	23.60	87.80
Voltage	15.21	17.58	17.62	14.89	65.32	7.11	6.48	7.83	10.09	31.52	6.62	7.08	4.76	4.54	23.01
Load Shedding	16.05	20.34	16.49	16.68	69.57	1.37	8.33	21.62	7.74	39.08	1.38	1.16	1.95	0.81	5.32
Billing	45.74	45.89	40.48	46.39	178.52	39.94	46.19	47.05	48.23	181.41	45.99	59.74	32.87	31.11	169.73
Disconnection	21.42	22.85	20.41	24.66	89.36	7.79	9.32	18.06	17.69	52.87	6.08	8.20	7.14	4.81	26.24
Connection Delay	10.30	14.49	12.40	13.38	50.59	0.51	5.87	7.23	9.15	22.77	0.09	0.22	2.26	2.10	4.70
Others	8.31	9.93	16.97	9.39	44.61	37.70	16.36	10.09	18.42	82.58	16.83	10.93	15.34	36.71	79.82
Total	203.11	218.98	230.49	204.50	857.10	145.95	151.93	172.83	177.80	648.53	108.87	153.22	128.79	136.39	527.28





Table C.3: Appeals received and resolved by forum offices 2023

S/N	Forum Offices	2023/Q1				2023/Q2				2023/Q3				2023/Q4				2023			
		Received	Resolved	Pending	Resolution Rate	Received	Resolved	Pending	Resolution Rate	Received	Resolved	Pending	Resolution Rate	Received	Resolved	Pending	Resolution Rate	Received	Resolved	Pending	Resolution Rate
1	Abakaliki	54	0	54	0%	88	8	80	9%	117	85	31	64%	67	52	15	78%	326	145	180	44%
2	Abeokuta	67	21	1	31%	27	1	26	4%	133	64	19	43%	122	17	42	14%	349	103	88	30%
3	Abuja	47	27	19	57%	43	29	14	67%	51	31	20	61%	52	44	8	85%	193	131	61	68%
4	Ado-Ekiti	-	-	-	-	-	-	-	-	-	-	-	-	3	1	2	33%	3	1	2	33%
5	Asaba	90	59	31	66%	86	71	15	83%	65	52	13	93%	68	22	44	32%	309	204	103	66%
6	Awka	80	40	40	50%	116	87	29	75%	116	93	23	62%	97	83	14	86%	409	303	106	74%
7	Bauchi	5	5	0	100%	7	7	0	100%	5	3	2	80%	4	4	0	100%	21	19	2	90%
8	Benin	11	0	10	0%	75	64	11	0%	90	67	23	56%	66	45	21	0%	242	176	65	73%
9	Calabar	54	36	18	67%	41	28	12	68%	35	27	7	23%	37	30	7	81%	167	121	44	72%
10	Dutshe	15	0	15	0%	15	1	14	7%	17	17	0	0%	6	5	1	83%	53	23	30	43%
11	Eko	33	4	29	12%	73	19	54	26%	136	90	46	76%	156	101	55	65%	398	214	184	54%
12	Enugu	112	72	25	64%	89	59	22	66%	94	31	52	87%	125	78	26	62%	420	240	125	57%
13	Gombe	16	4	12	25%	23	22	1	96%	10	0	7	92%	9	7	2	78%	58	33	22	57%
14	Gusau	7	0	7	0%	7	0	7	0%	11	7	4	81%	8	4	4	50%	33	11	22	33%
15	Ibadan	110	63	47	57%	123	84	39	68%	124	81	43	66%	209	144	64	69%	566	372	193	66%
16	Ikeja	793	546	247	69%	572	320	252	56%	632	331	301	40%	692	470	222	68%	2689	1667	1022	62%
17	Ilorin	43	37	6	86%	59	43	16	73%	98	69	29	23%	77	70	7	91%	277	219	58	79%
18	Jos	5	5	0	100%	9	7	2	78%	12	11	1	93%	9	9	0	100%	35	32	3	91%
19	Kaduna	46	34	4	74%	30	26	2	87%	14	11	2	60%	16	6	9	38%	106	77	17	73%
20	Kano	26	13	0	50%	82	16	66	20%	91	83	8	45%	23	16	2	70%	222	128	76	58%
21	Katsina	3	2	1	67%	4	1	3	25%	10	3	7	44%	15	14	1	93%	32	20	12	63%
22	Kebbi	20	3	17	15%	20	0	20	0%	22	2	18	-	26	21	5	81%	88	26	60	30%
23	Lafia	8	8	0	100%	0	0	0	0%	12	8	4	63%	13	7	6	54%	33	23	10	70%
24	Lokoja	0	0	0	0%	4	2	2	0%	8	7	1	88%	5	3	2	0%	17	12	5	71%
25	Makurdi	22	11	4	50%	12	2	9	58%	11	5	0	50%	7	0	4	0%	52	23	10	44%
26	Osogbo	197	79	118	40%	288	128	47	56%	402	120	282	48%	483	358	125	74%	1370	717	653	52%
27	Owerri	19	3	16	16%	40	5	5	85%	32	15	16	50%	26	22	4	85%	117	74	41	63%
28	P/Harcourt	145	106	39	73%	170	46	38	61%	130	106	9	0%	92	84	5	91%	537	400	99	74%
29	Sokoto	9	0	9	0%	17	17	2	0%	20	15	5	69%	11	8	3	73%	57	23	34	40%
30	Umuahia	25	20	1	80%	13	3	37	77%	10	1	8	52%	14	10	4	71%	62	41	16	66%
	Umuahia 2													3	0	3	0%	3	0	3	0%
31	Uyo	208	124	84	60%	171	26	46	85%	127	97	30	65%	146	84	62	58%	652	450	202	69%
32	Yola	50	38	12	76%	47	23	11	51%	80	49	31	88%	71	42	27	59%	248	153	93	62%
	All Forum Offices	2320	1,360	866	59%	2,351	1,379	937	59%	2,715	1,582	1,042	50%	2,758	1,861	796	67%	10,144	6,181	3,641	61%





Table C.4: List and Addresses of NERC Forum Offices as of December 2023

S/N	Forum Office	Location	Telephone	Email
1	Abakaliki, Ebonyi State	3, Ezekuna Crescent, Off Nsugbe Street, Abakaliki Ebonyi State	9037808590	abakalikiforum@nerc.gov.ng
2	Abeokuta, Ogun State	33, First Avenue, Ibara Housing Estate, Ibar GRA, Abeokuta	9139381008	abeokutaforum@nerc.gov.ng
3	Abuja, FCT	14, Road 131, Gwarinpa, Federal Capital Territory, Abuja	8146862225	abujaforum@nerc.gov.ng
4	Ado-Ekiti, Ekiti State	Km 5, Iwokoro Road, Ado Ekiti, Ekiti State	9169978242	ado-ekitiiforum@nerc.gov.ng
5	Asaba, Delta State	Denis Osadebe Way, Beside Mobil Filling Station, Asaba, Delta State	9062277247	asabaforum@nerc.gov.ng
6	Awka, Anambra State	Plot 80, Aroma Junction Layout, Opp. CBN, Awka, Anambra State	9037808594	awkaforum@nerc.gov.ng
7	Bauchi, Bauchi State	37, Old Jos Road, GRA, Bauchi, Bauchi State	9062924607	bauchiforum@nerc.gov.ng
8	Benin, Edo State	34, Akpakpava Street, Benin City, Edo State	9037808592	beninforum@nerc.gov.ng
9	B/Kebbi, Kebbi State	8, Ahmadu Bello Way, Opp. Kebbi State Govt House, Kebbi State	9062863161	birninkebbiforum@nerc.gov.ng
10	Calabar, C/Rivers State	Plot 109, MCC Road by Ibok Street, Calabar, Cross River State	9062863159	calabarforum@nerc.gov.ng
11	Dutse, Jigawa State	Dutse G.R.A, Dutse, Jigawa State	7031704827	jigawaforum@nerc.gov.ng
12	Eko, Lagos State	61, Odunlami Street, Off Marina, Lagos Island, Lagos State	8106807261	ekoforum@nerc.gov.ng
13	Enugu, Enugu State	John Anichukwu Close, Plot 7 Mkpokiti Pocket Layout, Enugu, Enugu State	8146862230	enuguforum@nerc.gov.ng
14	Gombe, Gombe State	Government Layout GDP/2, Along Ministry of Education Road, Gombe State	8140440079	gombeforum@nerc.gov.ng
15	Gusau, Zamfara State	2 Canteen Daji, J. B. Yakubu Road, Gusau, Zamfara State	9062863163	gusauforum@nerc.gov.ng
16	Ibadan, Oyo State	Jibowu Str, Opp. Magara Police Station, Iyaganku, G.R.A, Ibadan, Oyo State	8146862252	ibadanforum@nerc.gov.ng
17	Ikeja, Lagos State	199, Obafemi Awolowo Way, Alausa, Ikeja, Lagos State	8106807298	ikejaforum@nerc.gov.ng
18	Ilorin, Kwara State	30, Stadium Road, Off Taiwo Road, Ilorin, Kwara State	9062924603	ilorinforum@nerc.gov.ng
19	Jos, Plateau State	5a, Ray-field Road, Jos, Plateau State	9037808597	josforum@nerc.gov.ng
20	Kaduna, Kaduna State	22, Ahmadu Bello Way, Opposite NNDC Building, Kaduna, Kaduna State	8106807299	kadunaforum@nerc.gov.ng
21	Kano, Kano State	2, Miller Road, Bompai, Nasarawa G.R.A, Kano, Kano State	8146862222	kanoforum@nerc.gov.ng
22	Katsina, Katsina State	7, Abuja Crescent, Off Hassan Usman Katsina Road, Katsina, Katsina State	7031704821	katsinaforum@nerc.gov.ng
23	Lafia, Nasarawa State	Manyi Street, Off Jos Road, Bukan Sidi, Lafia, Nasarawa State	9062924599	lafiaforum@nerc.gov.ng
24	Lokoja, Kogi State	Hassan Kastina Rd, Opp. State Civil Service Commission, Zone 8 Police HQ, Lokoja, Kogi State.	9062924601	lokojaforum@nerc.gov.ng
25	Makurdi, Benue State	Hephzibah Plaza, Atom Kpera Road, Opp. Makurdi Int'l School, Benue State	9062277249	makurdiforum@nerc.gov.ng
26	Osogbo, Osun State	51, Isiaka Adeleke Way, Along Okefia-Alekuwodo Rd, Osogbo, Osun State	9062924604	osogboforum@nerc.gov.ng
27	Owerri, Imo State	1, C.B Anyanwu Rd, Housing Area B, Exclusive Garden, Owerri	9062277245	owerriforum@nerc.gov.ng
28	P/Harcourt, Rivers State	The Vhelberg Imperial Hotel, Plot 122 & 122a, Bank Anthony Avenue, Off Ordinance Rd, P/Harcourt	8146862223	phforum@nerc.gov.ng
29	Sokoto, Sokoto State	1, Garba Duba Road, Sokoto, Sokoto State	9062863157	sokotoforum@nerc.gov.ng
30	Umuahia, Abia State	House 2, Adelabu Str., Amaokwe Housing Estate, Umuahia Ibeku, Abia State	9062277251	umuhiaforum@nerc.gov.ng
31	Uyo, Akwa Ibom State	63, Osongama Road, Off Oron/Uyo Airport Road, Uyo, Akwa Ibom State	9062863165	uyoforum@nerc.gov.ng
32	Yola, Adamawa State	5, Nguroje Str., Karewa Extension, Jimeta, Yola, Adamawa State	9037808535	yolaforum@nerc.gov.ng





D. Rate Case Hearing

Table D.1: DisCos representatives at the Rate Case Hearings

DisCos	Lead Representative	Designation	Date
Abuja	Engr. Adeoye Fadeyibi	MD/CEO	24 July, 2023
Benin	Mr. Deolu Ijose	MD/CEO	24 July, 2023
Eko	Dr. Tinuade Sanda	MD/CEO	24 July, 2023
Kano	Mr. Ahmed Dangana	MD/CEO	25 July, 2023
Ikeja	Mrs. Foluke Soetan	MD/CEO	25 July, 2023
Enugu	Mr. Praveen Chorgade	MD/CEO	25 July, 2023
Jos	Engr. Abdu Bello Mohammed	MD/CEO	26 July, 2023
Port Harcourt	Dr. Benson Uhweru	MD/CEO	26 July, 2023
Ibadan	Engr. Kingsley Achife	MD/CEO	26 July, 2023
Kaduna	Mr. Yusuf Usman Yahaya	MD/CEO	27 July, 2023
Yola	Mr. Abubakar Jibrin	Ag.MD/CEO	27 July, 2023
Aba Power	Mr. Patrick Umeh	MD/CEO	08 August, 2023





Table D.2: List of Intervenors at the Rate Case Hearings

S/N	Name	DisCo
1	Pastor Nwokocha Anozie Innocent	APLE
2	Eleweke Ikenna Austin	APLE
3	Michael Ahunanya	APLE
4	Godwin Nwaigwe	APLE
5	Jonathan Giama (CHDR Delta State)	Benin
6	Andrew Pinneh	Benin
7	Olabayo Balogun	Eko
8	Adeola Samuel-ilori	Eko
9	Ugochukwu Ugwoeje	Enugu
10	Rasaki Fabayo	Ibadan
11	Azeez Bisilimi	Ibadan
12	Adesina Edwards (Asabari Consultative Council)	Ibadan
13	Adeshola Sylvester	Ibadan
14	Ola-Olamide Emmanuel	Ibadan
15	Oloyede fatai Ayinde	Ibadan
16	Alh. Salihu Imam	Ibadan
17	Akinbodunse Shadrack	Ibadan
18	Hon. Sunday Moses Oladapo	Ikeja
19	Idris Akano	Ikeja
20	Adeola Samuel-ilori	Ikeja
21	Jamila M. Umar	Jos
22	Almustapha Abdulkarim	Kaduna
23	Jamila M. Umar	Kaduna
24	Bassey Inyang	Port Harcourt
25	Chidike Okoro	Port Harcourt
26	Engr. Tony Nwobo	Port Harcourt





E. Electricity Generation

Table E.1: Available Capacity, Energy Generated and Energy Delivered 2020-2023

	Installed Available Capacity (MW)				Energy Generated (MWh)				Energy Delivered to the Grid (MWh)			
	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020
Period												
January	4,394	4,783	5,103	5,663	4,083	4,265	4,495	3,817	4,021	2,836	4,424	3,732
February	4,726	4,863	5,513	5,755	4,502	4,317	4,561	4,114	4,441	2,675	4,482	4,008
March	4,828	4,491	5,601	5,275	4,432	3,728	4,410	3,912	4,346	2,655	4,328	3,858
April	4,334	5,099	5,023	6,315	4,177	3,813	4,308	4,099	4,095	2,659	4,229	4,031
May	4,421	4,608	5,002	6,421	4,071	3,630	4,149	4,168	4,029	2,288	4,075	4,100
June	4,426	3,845	4,505	6,341	3,949	3,224	3,774	3,726	3,863	2,674	3,705	3,660
July	4,139	4,092	4,858	6,301	3,968	3,634	3,940	3,821	3,911	2,882	3,866	3,757
August	4,060	4,575	5,593	6,673	3,946	3,939	4,003	4,045	3,891	2,825	3,934	3,981
September	4,435	4,456	5,453	6,048	3,858	4,047	3,867	3,863	3,808	2,903	3,801	3,806
October	4,964	4,233	5,764	6,710	4,452	3,976	4,138	4,155	4,399	3,043	4,078	4,088
November	5,076	4,537	5,432	5,893	4,399	4,304	4,336	4,424	4,338	3,252	4,275	4,358
December	4,450	4,740	5,200	5,888	4,450	4,265	4,495	3,817	4,021	2,836	4,424	3,732
Average	4,521	4,527	5,254	6,107	4,191	4,317	4,561	4,114	4,096	2,675	4,482	4,008

Table E.2: Plants' Average Load Factor, 2020-2023

GenCos	Load Factor (%)			
	2023	2022	2021	2020
Afam IV-V	93.69	78.90	75.69	62.84
Afam VI IPP	100.00	97.72	92.91	68.79
Alaoji NIPP	88.35	80.10	51.29	40.06
Azura Edo IPP	90.31	93.23	88.90	79.74
Dadin Kowa	95.93	97.93	-	-
Delta	96.39	87.69	82.27	67.77
Egbin	93.28	91.48	81.59	65.36
Gbarain NIPP	NA	-	-	42.91
Geregu	94.17	83.57	76.14	64.04
Geregu NIPP	91.88	88.03	64.91	64.84
Ibom Power IPP	54.57	52.37	80.69	55.02
Ihovbor NIPP	81.16	84.02	50.60	36.79
Jebba	93.18	98.44	85.08	78.73
Kainji	95.52	98.09	95.05	83.6
Odukpani NIPP	92.63	72.70	72.88	61.62
Okpai IPP	84.72	81.37	78.52	59.02
Olorunsogo	99.83	84.90	75.45	61.87
Olorunsogo NIPP	98.26	82.60	65.11	60.54
Omoku IPP	100.00	100.00	87.26	55.6
Omotosho	97.40	89.66	84.07	65.69
Omotosho NIPP	85.51	87.19	52.76	60.5
Paras Energy IPP	87.39	82.84	79.20	73.87
Rivers IPP	89.23	92.03	71.72	72.92
Sapele	90.29	68.67	51.87	55.98
Sapele NIPP	79.90	66.91	77.37	33.71
Shiroro	85.53	89.63	74.54	67.59
Trans-Amadi IPP	100.00	99.05	79.12	65.98
Total	92.22	85.94	79.92	61.74





Table E.3: Annual Electricity Output and Share by Fuel Type, 2020-2023

Period	Fuel Type	Total Electricity Output (GWh)				Fuel Share of Electricity Output (%)			
		2023	2022	2021	2020	2023	2022	2021	2020
Q1	Thermal	6,979	6,497	7,683	6,327	74	73	77	73
	Hydro	2,370	2,350	2,227	2,286	25	26	22	26
Q2	Aggregate	9,350	8,848	9,910	8,613	100	100	100	100
	Thermal	7,068	6,324	7,373	7,121	79	81	81	81
Q3	Hydro	1,798	1,442	1,628	1,613	20	18	18	18
	Aggregate	8,867	7,766	9,001	8,734	100	100	100	100
Q4	Thermal	6,456	6,027	6,729	6,318	74	70	77	76
	Hydro	2,208	2,512	1,962	1,946	25	29	22	23
Annual	Aggregate	8,664	8,850	8,692	8,265	100	100	100	100
	Thermal	7,087	6,438	6,832	7,248	72	70	72	75
	Hydro	2,702	2,926	2,648	2,379	27	31	27	24
	Aggregate	9,789	9,365	9,481	9,628	100	100	100	100
	Thermal	27,623	25,613	28,619	27,016	75	73	77	76
	Hydro	9,086	9,328	8,466	8,213	24	26	22	23
	Aggregate	36,710	34,942	37,086	35,230	100	100	100	100

Table E.4: Plant Share of Total Electricity Output, 2020-2023

		Electricity Output by Plant (GWh)				Electricity Output by Plant (%)			
		2023	2022	2021	2020	2023	2022	2021	2020
GenCos									
AES Barge IPP	0	0	0	0	0	0	0	0	0
Afam IV-V	344	432	585	450	0.94	1.24	1.59	1.29	
Afam VI IPP	2,737	853	2,404	2,248	7.46	2.44	6.53	6.36	
Alaoji NIPP	58	579	505	544	0.16	1.66	1.37	1.53	
ASCO IPP	0	0	0	0	0	0	0	0	0
Azura Edo IPP	3,244	3,454	3,252	2,925	8.84	9.89	8.84	8.27	
Dadin Kowa	205	234	0	-	0.56	0.67			
Delta	3,130	3,341	112	2,688	8.53	9.56	7.53	7.56	
Egbin	5,173	3,800	2,769	4,780	14.09	10.87	15.29	13.54	
Gbarain NIPP	0	0	0	84	0	0	0	0.24	
Geregu	1,741	1,619	5,626	2,039	4.74	4.63	6.70	5.76	
Geregu NIPP	315	734	2,463	816	0.86	2.1	1.85	2.31	
Ibom Power IPP	349	309	681	322	0.95	0.88	0.30	0.93	
Ihovbor NIPP	217	529	111	195	0.59	1.51	0.40	0.53	
Jebba	2,961	2,859	149	2,725	8.07	8.18	8.37	7.68	
Kainji	3,410	3,202	3,078	2,946	9.29	9.16	7.70	8.31	
Odukpani NIPP	2,117	1,925	2,834	2,461	5.77	5.51	6.90	6.99	
Okpai IPP	2,331	2,066	2,537	1,588	6.35	5.91	6.40	4.46	
Olorunsogo	832	953	2,356	1,139	2.27	2.73	2.94	3.2	
Olorunsogo NIPP	253	349	1,080	132	0.69	1	0.17	0.37	
Omoku IPP	487	424	64	556	1.33	1.21	1.03	1.78	
Omotosho	1,006	918	377	1,062	2.74	2.63	2.77	2.99	
Omotosho NIPP	751	722	1,018	660	2.05	2.07	0.76	1.85	
Paras Energy IPP	513	420	281	485	1.40	1.2	1.09	1.37	
Rivers IPP	548	993	400	922	1.49	2.84	1.74	2.37	
Sapele	478	433	640	311	1.30	1.24	0.72	0.87	
Sapele NIPP	711	290	266	251	1.94	0.83	0.92	0.71	
Shiroro	2,510	3,035	340	2,587	6.84	8.69	6.45	7.32	
Taopex	79	NA	NA	NA	0.21	NA	NA	NA	
Trans-Amadi IPP	203	472	2,374	499	0.55	1.35	1.31	1.4	
Total	36,710	34,942	36,784	35,423	100	100	100	100	





Table E.5: Average Monthly Transmission Loss Factor, 2021-2023

	Energy Injected into Grid (GWh)			Energy Delivered to DisCos & Exported (GWh)			Transmission Losses Factor (%)			MYTO Assumption (%)
Month	2023	2022	2021	2023	2022	2021	2023	2022	2021	2023
January	3,263	3,136	3,295	2,755	2,812	3,043	7.32%	8.15%	7.64%	
February	2,974	2,860	3,007	2,744	2,554	2,781	8.19%	8.54%	7.51%	
March	2,983	2,754	3,220	2,982	2,487	2,982	8.19%	7.38%	7.37%	
April	3,247	2,717	3,004	2,720	2,446	2,816	7.73%	8.44%	7.49%	
May	2,948	2,662	3,033	2,715	2,081	2,809	9.56%	8.43%	7.41%	
June	3,002	2,291	2,664	2,562	2,465	2,464	7.72%	8.20%	7.49%	
July	2,776	2,677	2,834	2,664	2,593	2,654	8.17%	8.08%	6.34%	
August	2,897	2,870	2,890	2,670	2,637	2,705	8.39%	7.78%	6.43%	
September	2,912	2,847	2,714	2,544	2,701	2,522	7.26%	7.50%	7.07%	
October	2,742	2,917	3,030	2,977	2,851	2,785	8.89%	7.42%	8.07%	
November	3,266	3,059	3,091	2,944	3,012	2,828	8.83%	6.81%	8.50%	
December	3,229	3,263	3,243	2,998	2,755	2,983	7.74%	7.71%	8.03%	
Average	3,020	2,838	3,005	2,773	2,616	2,781	8.17%	7.87%	7.45%	
Total	36,240	34,054	36,065	33,273	31,393	33,373	8.17%	7.87%	7.45%	7.25%

Table E.6: Number of System Collapses, 2011-2023

Year	Type	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
2011	Total Collapse	0	0	0	0	4	3	1	1	1	2	1	0	13
	Partial Collapse	0	1	1	0	0	0	0	1	0	1	2	0	6
2012	Total Collapse	0	0	2	1	5	2	1	0	0	2	2	1	16
	Partial Collapse	0	0	2	3	0	0	0	0	1	0	1	1	8
2013	Total Collapse	0	1	2	2	3	4	1	1	1	1	4	2	22
	Partial Collapse	0	0	0	0	0	0	0	0	2	0	0	0	2
2014	Total Collapse	2	0	0	2	0	3	1	0	0	1	0	0	9
	Partial Collapse	0	0	0	0	1	0	0	0	0	0	2	1	4
2015	Total Collapse	1	0	1	0	2	0	1	0	0	0	1	0	6
	Partial Collapse	0	0	1	0	2	0	0	0	0	1	0	0	4
2016	Total Collapse	0	0	2	3	6	5	0	0	1	1	2	2	22
	Partial Collapse	0	0	1	0	1	3	1	0	0	0	0	0	6
2017	Total Collapse	5	3	0	3	1	1	0	0	1	1	0	0	15
	Partial Collapse	1	0	1	0	0	0	1	0	3	3	0	0	9
2018	Total Collapse	5	1	0	0	0	1	1	0	2	0	0	2	12
	Partial Collapse	0	0	0	1	0	0	0	0	0	0	0	0	1
2019	Total Collapse	4	1	0	1	1	1	0	1	0	0	0	1	10
	Partial Collapse	0	0	0	0	0	0	0	0	0	0	1	0	1
2020	Total Collapse	1	0	0	1	0	1	0	0	0	0	1	0	4
	Partial Collapse	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	Total Collapse	0	0	0	0	1	0	1	0	0	0	0	0	2
	Partial Collapse	0	1	0	0	0	0	0	1	0	0	0	0	2
2022	Total Collapse	0	0	1	1	0	1	1	0	0	0	0	0	4
	Partial Collapse	0	0	1	0	0	0	0	0	1	0	0	0	2
2023	Total Collapse	0	0	0	0	0	0	0	0	2	0	0	1	3
	Partial Collapse	0	0	0	0	0	0	0	0	0	0	0	0	0





Table E.7: Average Daily System Frequency, 2020-2023

Period	Stress				Nominal Standard	Average system frequency (upper bound)				Average system frequency (lower bound)			
	Upper Limit	Lower Limit	Higher Stress limit	Lower Stress limit		2023	2022	2021	2020	2023	2022	2021	2020
January						50.60	50.68	50.49	50.82	49.10	49.13	49.17	49.67
February						50.96	50.60	50.59	50.7	49.11	49.05	49.38	49.75
March						51.01	50.78	50.62	50.65	49.02	49.07	49.29	49.48
April						50.93	51.12	50.72	50.77	48.98	49.08	49.12	49.63
May						51.10	50.47	50.64	50.67	49.08	49.13	49.13	49.7
June						51.06	50.73	50.70	50.86	49.06	49.09	49.07	49.73
July						50.73	50.63	50.69	50.78	48.96	48.71	49.95	49.83
August						50.56	51.14	50.81	50.74	48.98	48.65	49.35	49.84
September						50.83	50.81	51.00	50.81	49.08	48.76	49.24	49.86
October						50.69	50.66	50.96	50.88	48.88	49.08	49.43	49.7
November						50.67	50.44	50.72	50.58	49.19	49.07	49.32	49.34
December						50.62	50.56	50.59	50.44	49.05	49.09	49.20	49.4
Average						50.81	50.72	50.71	50.73	49.04	48.99	49.30	49.66

Table E.8: Average Daily System Voltage, 2020-2023

Period	Upper Voltage limit (kV)	Lower Voltage limit (kV)	Nominal Standard (kV)	Average system voltage (upper bound) (kV)				Average system voltage (lower bound) (kV)			
				2023	2022	2021	2020	2023	2022	2021	2020
January				357.50	352.90	349.81	355.48	300.50	297.74	298.48	298.19
February				354.28	352.76	348.96	351.52	299.17	297.36	299.21	299.00
March				349.55	351.18	350.87	352.65	292.75	297.00	296.07	299.03
April				351.97	358.00	349.13	356.80	299.34	299.00	297.17	290.97
May				354.30	357.00	351.75	355.29	296.33	300.00	294.78	290.87
June				356.27	358.00	353.47	355.90	297.03	300.00	299.97	297.50
July				350.77	335.42	353.35	355.00	300.00	299.53	300.16	296.93
August				353.32	358.24	352.23	354.47	299.39	299.10	298.74	297.67
September				355.73	353.21	352.90	354.83	299.20	299.83	297.74	300.97
October				348.00	351.03	352.90	353.74	297.00	299.45	297.74	296.16
November				348.00	352.96	352.76	352.37	299.00	299.93	397.36	294.87
December				347.00	352.21	351.18	349.55	299.00	298.73	297.00	298.61
Average				352.22	352.74	351.61	353.97	298.23	298.97	297.87	296.73





Metering

Table E.9: Customers registered, metered, and unmetered, 2023

Distribution Company	Registered Customers (RC) by DisCos							
	2023/Q1 As of 31 March		2023/Q2 As of 30 June		2023/Q3 As of 30 September		2023/Q4 As of 31 December	
	Registered Customers	%	Registered Customers	%	Registered Customers	%	Registered Customers	%
Aba	184,348	1.49	187,274	1.49	189,043	1.47	191,405	1.45
Abuja	1,323,358	10.69	1,353,671	10.78	1,388,325	10.83	1,414,356	10.75
Benin	1,214,377	9.81	1,270,157	10.11	1,291,181	10.07	1,324,373	10.06
Eko	701,083	5.66	708,946	5.64	724,480	5.65	736,146	5.59
Enugu	1,394,664	11.27	1,395,950.00	11.11	1,396,440	10.89	1,396,440	10.61
Ibadan	2,266,168	18.31	2,309,585	18.39	2,350,136	18.32	2,401,864	18.25
Ikeja	1,188,391	9.60	1,206,641	9.61	1,232,688	9.61	1,238,295	9.41
Jos	711,589	5.75	716,774	5.71	722,731	5.64	730,402	5.55
Kaduna	848,568	6.86	854,818	6.81	856,991	6.68	864,128	6.57
Kano	851,550	6.88	857,109	6.82	861,466	6.72	872,656	6.63
Port Harcourt	1,179,194	9.53	1,179,194	9.39	1,179,194	9.19	1,179,194	8.96
Yola	514,953	4.16	520,930	4.15	632,330	4.93	813,313	6.18
Total	12,378,243	100.00	12,561,049	100.00	12,825,005	100.00	13,162,572	100
Distribution Company	Metered Customers by DisCos							
	2023/Q1 As of 31 March		2023/Q2 As of 30 June		2023/Q3 As of 30 September		2023/Q4 As of 31 December	
	Metered Customers	%	Metered Customers	%	Metered Customers	%	Metered Customers	%
Aba	45,509	0.85	47,164	0.85	50,397	0.88	54,462	0.93
Abuja	782,344	14.59	809,268	14.59	835,961	14.65	856,435	14.66
Benin	615,296	11.48	626,241	11.29	639,162	11.20	659,511	11.29
Eko	405,087	7.56	418,437	7.54	424,552	7.44	431,336	7.38
Enugu	562,117	10.49	588,060	10.60	604,405	10.59	616,210	10.55
Ibadan	942,315	17.58	980,296	17.67	1,011,630	17.72	1,046,873	17.92
Ikeja	812,480	15.16	849,413	15.31	887,485	15.55	898,202	15.37
Jos	231,381	4.32	235,850	4.25	239,442	4.19	243,049	4.16
Kaduna	198,972	3.71	201,386	3.63	203,718	3.57	206,076	3.53
Kano	206,471	3.85	207,798	3.75	209,153	3.66	210,338	3.60
Port Harcourt	458,915	8.56	469,073	8.46	483,491	8.47	494,246	8.46
Yola	99,547	1.86	113,497	2.05	118,442	2.08	125,988	2.16
Total	5,360,434	100.00	5,546,483	100.00	5,707,838	100.00	5,842,726	100.00
Distribution Company	Unmetered Customers by DisCos							
	2023/Q1 As of 31 March		2023/Q2 As of 30 June		2023/Q3 As of 30 September		2023/Q4 As of 31 December	
	Unmetered Customers	%	Unmetered Customers	%	Unmetered Customers	%	Unmetered Customers	%
Aba	138,839	1.98	140,110	2.00	138,646	1.95	136,943	1.87
Abuja	541,014	7.71	544,403	7.76	552,364	7.76	557,921	7.62
Benin	599,081	8.54	643,916	9.18	652,019	9.16	664,862	9.08
Eko	295,996	4.22	290,509	4.14	299,928	4.21	304,810	4.16
Enugu	832,547	11.86	807,890	11.52	792,035	11.13	780,230	10.66
Ibadan	1,323,853	18.86	1,329,289	18.95	1,338,506	18.81	1,354,991	18.51
Ikeja	375,911	5.36	357,228	5.09	345,203	4.85	340,093	4.65
Jos	480,208	6.84	480,924	6.86	483,289	6.79	487,353	6.66
Kaduna	649,596	9.26	653,432	9.32	653,273	9.18	658,052	8.99
Kano	645,079	9.19	649,311	9.26	652,313	9.17	662,318	9.05
Port Harcourt	720,279	10.26	710,121	10.12	695,703	9.77	684,948	9.36
Yola	415,406	5.92	407,433	5.81	513,888	7.22	687,325	9.39
Total	7,017,809	100.00	7,014,566	100.00	7,117,167	100.00	7,319,846	100.00





F. Commercial Performance

Table F.1: DisCos' energy received, billed and billing efficiency 2021-2023

DisCos	Total Energy Received (GWh)						
	2023 Quarters				Annual		
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
Abuja	1091	1081	1060	1248	4483	3,906	4,050
Benin	635	649	602	665	2552	2,698	2,683
Eko	927	897	938	1039	3801	3,125	3,591
Enugu	640	616	583	682	2520	2,612	2,841
Ibadan	856	817	894	988	3556	3,450	4,092
Ikeja	1150	1132	1159	1232	4673	4,082	4,548
Jos	409	352	372	426	1559	1,566	1,403
Kaduna	492	389	416	546	1843	2,110	2,324
Kano	506	418	416	531	1871	1,923	1,951
Port Harcourt	548	533	528	578	2187	2,024	2,109
Yola	240	213	217	265	935	856	902
Total	7,495	7,101	7,184	8199	29,980	28,352	30,494
Average	681	646	653	745	2,725	2,577	2,772
Total Energy Billed (GWh)							
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
	783	796	776	884	3,239	2,677	2,682
	546	549	518	566	2,179	2,274	2,246
	824	818	826	934	3,402	2,786	3,141
	463	453	443	509	1,868	1,852	2,035
	667	676	682	800	2,824	2,567	2,920
	984	1044	1007	1070	4,104	3,613	4,081
	332	293	303	338	1,266	1,181	976
	268	250	220	242	980	1,349	1,767
	368	304	292	362	1,326	1,346	1,454
	452	444	439	474	1,809	1,639	1,625
	157	163	176	253	750	486	420
Total	5,844	5,789	5,682	6,432	23,748	21,771	23,348
Average	531	526	517	585	2,159	1,979	2,123
Billing Efficiency (%)							
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
	71.77	73.43	73.21	70.83	72.25	68.54	66.22
	86.03	84.51	85.91	85.19	85.40	84.29	83.73
	88.89	91.19	88.06	89.89	89.50	89.15	87.47
	72.34	73.54	75.99	74.73	74.13	70.90	71.62
	77.89	82.66	76.21	80.95	79.41	74.41	71.37
	85.52	92.17	86.92	86.84	87.82	88.51	89.73
	81.13	83.23	81.45	79.35	81.19	75.40	69.57
	54.43	64.16	52.99	44.37	53.18	63.95	76.03
	72.66	72.79	70.35	68.14	70.89	69.99	74.52
	82.47	83.35	83.18	81.99	82.73	81.00	77.06
	65.55	76.64	81.24	95.67	80.25	56.79	46.56
Total	77.97	81.53	79.09	78.45	79.21	76.79	76.57
Average	76.24	79.79	77.77	78.00	77.89	74.81	73.99





Table F.2: Revenue performance by DisCos, 2021-2023

DisCos	Total Billing (₦' Billion)						
	2023 Quarters				Annual		
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
Abuja	51.28	52.77	50.73	57.47	212.25	154.22	140.63
	32.57	33.77	31.41	34.36	132.12	122.07	105.77
	50.45	49.31	51.81	59.68	211.24	151.31	145.61
	27.77	27.37	25.90	30.63	111.67	101.34	98.00
	38.74	39.95	39.77	46.46	164.92	137.33	139.71
	56.90	58.76	58.35	62.90	236.90	182.42	184.22
	23.95	20.82	21.12	23.42	89.31	73.57	49.32
	17.24	13.95	12.10	14.87	58.16	71.98	89.77
	22.04	19.33	19.15	23.32	83.85	73.79	69.17
	27.55	27.13	26.55	28.85	110.08	90.34	76.23
	10.89	11.46	12.66	17.74	52.75	26.93	18.47
	359.38	354.61	349.56	399.69	1,463.24	1,185.31	1,116.92
	Average	32.67	32.24	31.78	36.34	243.87	107.76
Benin	32.67	32.24	31.78	36.34	243.87	107.76	101.54
Eko	Total Revenue Collected (₦' Billion)						
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
	39.10	43.58	41.29	46.23	170.20	127.80	117.61
	19.54	21.81	21.20	22.38	84.93	69.90	58.16
	40.96	43.25	43.69	50.19	178.09	127.79	120.89
	19.03	20.88	20.04	23.33	83.28	70.93	69.83
	24.85	28.09	28.72	31.82	113.47	95.67	91.37
	49.61	55.82	57.25	59.75	222.43	168.31	157.40
	9.72	9.52	10.14	10.96	40.35	31.01	24.80
	7.63	8.28	7.74	9.07	32.73	28.25	30.64
	14.19	14.64	12.94	14.32	54.09	48.91	47.39
	17.48	18.81	18.50	20.18	74.96	58.77	47.72
	4.98	5.19	6.10	6.71	22.98	14.46	9.54
Total	247.09	267.86	267.61	294.95	1,077.51	841.81	775.34
	Average	22.46	24.35	24.33	26.81	97.96	76.53
Kano	Collection Efficiency (%)						
	/Q1	/Q2	/Q3	/Q4	2023	2022	2021
	76.25	82.59	81.38	80.44	80.19	82.87	83.63
	59.98	64.59	67.49	65.12	64.28	57.26	54.98
	81.20	87.71	84.33	84.10	84.31	84.45	83.02
	68.55	76.29	77.37	76.16	74.58	69.99	71.25
	64.15	70.32	72.20	68.48	68.81	69.67	65.39
	87.19	95.00	98.12	95.00	93.89	92.27	85.44
	40.58	45.71	48.03	46.82	45.18	42.15	50.29
	44.27	59.38	64.00	61.00	56.28	39.25	34.14
	64.36	65.38	67.55	61.40	64.50	66.28	68.51
	63.44	69.32	69.66	69.96	68.10	65.06	62.59
	45.71	45.27	48.16	37.85	43.56	53.71	51.63
Yola	68.75	75.54	76.56	73.79	73.64	71.02	69.42
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Ibadan	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Kaduna	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Port Harcourt	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Jos	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Enugu	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Ikeja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Eko	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Benin	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Abuja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Kano	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Yola	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Ibadan	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Kaduna	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Port Harcourt	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Jos	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Enugu	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Ikeja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Eko	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Benin	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Abuja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Eko	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Benin	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Abuja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Kano	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Yola	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Ibadan	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Kaduna	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Port Harcourt	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Jos	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Enugu	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Ikeja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Eko	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Benin	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Abuja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Eko	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Benin	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Abuja	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Kano	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Yola	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Total	68.75	75.54	76.56	73.79	73.64	71.02
Ibadan	63.24	69.23	70.76	67.85	67.61	65.72	64.63
	Average	63.24	69.23	70.76	67.85	67.61	65.72
Kaduna	63.24						



Table F.3: ATC&C losses performance, 2019-2023

DisCos	2023		2022		2021		2020		2019	
	MYTO Target (%)	ATC&C Losses (%)								
Abuja	19.27	42.06	19.27	43.20	22.80	44.62	22.33	45.8	24	41.07
Benin	17.37	45.11	17.37	51.73	21.71	53.96	23.91	55.41	31	50.52
Eko	14.18	24.54	14.18	24.71	14.70	27.38	11.23	30.85	14	26.22
Enugu	11.31	44.72	11.31	50.38	19.96	48.97	20.56	53.83	29	30.94
Ibadan	15.47	45.36	15.47	48.16	18.55	53.33	19.67	56.74	25	47.74
Ikeja	11.37	17.54	11.37	18.33	12.52	23.34	10.81	28.21	15	23.91
Jos	27.27	63.32	27.27	68.22	35.98	65.02	39.12	67.79	44	60.4
Kaduna	10.65	70.07	10.65	74.90	17.18	74.05	20.12	76.80	32	66.81
Kano	15.85	54.27	15.85	53.61	18.65	48.94	22.06	50.78	29	43.72
PH	21.45	43.66	21.45	47.30	25.85	51.76	29.70	60.80	37	61.62
Yola	64.12	65.04	64.12	69.50	29.44	75.96	23.71	73.24	28	65.08
All DisCos:										
MYTO Level	20.75		20.75		21.58		22.11		26	
ATC&C Losses	-	41.67	-	45.46		46.85		50.57		43.85
ATC Losses	-	20.79	-	23.21		23.43		25.67		17.23
C Losses	-	26.36	-	28.98		30.58		33.50		32.16

Notes of the table: MYTO is Multi-Year Tariff Order; ATC&C is Aggregate Technical, Commercial and Collection; ATC is aggregate Technical & Commercial losses; and C is Collection loss





Table F.4: NBET and MO invoice to DisCos, 2019-2023

	Jan23	Feb23	Mar23	Apr23	May23	Jun23	Jul23	Aug23	Sep23	Oct23	Nov23	Dec23	2023	2022	2021	2020	2019
NBET Invoice	Amount in (₦'Billion)																
Abuja	11.14	10.93	12.80	11.74	15.08	18.92	19.40	19.43	19.57	22.55	24.23	16.60	202.41	109.61	101.33	89.91	87.88
Benin	6.58	6.45	7.07	6.82	9.31	10.57	10.36	10.19	11.08	12.23	12.74	6.85	110.25	74.89	72.87	64.93	54.28
Eko	8.23	7.40	8.38	7.14	10.24	12.33	13.22	13.60	15.10	18.68	21.00	12.40	147.71	84.43	93.01	84.12	77.99
Enugu	6.81	6.97	7.03	6.87	9.00	10.56	10.15	10.22	10.69	12.90	13.23	8.47	112.91	75.01	75.05	62.88	52.94
Ibadan	8.77	8.77	9.86	8.79	12.03	13.47	13.47	13.99	15.50	17.32	19.38	9.16	150.49	100.45	108.07	97.72	83.21
Ikeja	11.40	11.53	13.15	11.65	15.88	19.34	20.50	20.78	20.50	22.10	24.24	15.67	206.65	117.90	122.51	107.19	89.52
Jos	4.56	4.42	4.67	4.37	5.60	5.45	6.66	6.53	7.06	8.33	8.65	3.43	69.73	45.56	41.33	37.44	29.46
Kaduna	5.23	5.08	5.34	4.56	5.43	5.88	7.34	7.35	7.31	10.12	10.74	4.96	79.34	60.44	63.97	58.34	45.69
Kano	5.34	5.09	5.82	4.84	6.25	6.16	7.02	7.40	8.08	9.77	10.61	5.21	81.60	57.59	58.66	52.43	41.27
Port	5.75	5.93	5.95	5.73	7.90	8.59	8.93	9.44	9.39	10.31	11.15	6.53	95.59	57.28	54.28	48.39	45.77
Harcourt																	
Yola	2.42	2.32	3.11	2.50	3.17	3.09	3.96	3.75	4.02	5.02	5.41	0.28	39.06	25.48	26.38	27.37	26.49
Total	76.23	74.91	83.18	75.01	99.90	114.35	121.02	122.68	128.30	149.23	161.40	89.56	1,295.76	808.65	817.46	730.71	634.47
MO Invoice	Amount in (₦'Billion)																
Abuja	2.04	1.86	2.28	2.20	1.99	2.30	2.09	2.19	2.14	2.17	2.31	2.46	26.20	20.26	25.60	19.66	15.11
Benin	1.30	1.20	1.33	1.29	1.25	1.28	1.16	1.16	1.26	1.18	1.19	1.33	15.03	15.44	20.21	13.51	9.33
Eko	1.60	1.40	1.60	1.36	1.40	1.63	1.55	1.57	1.76	1.90	2.01	2.11	19.99	17.15	23.43	18.02	13.38
Enugu	1.29	1.25	1.16	1.27	1.21	1.28	1.12	1.13	1.18	0.79	1.35	1.47	15.08	15.58	20.42	13.08	9.09
Ibadan	1.73	1.62	1.87	1.58	1.51	1.60	1.54	1.62	1.75	1.78	1.90	2.03	20.56	20.87	29.03	20.81	14.29
Ikeja	2.22	2.14	2.40	2.16	2.08	2.20	2.28	2.27	2.20	2.09	2.34	2.52	27.04	22.28	32.16	21.61	15.3
Jos	0.90	0.85	0.87	0.80	0.76	0.68	0.76	0.76	0.82	0.42	0.86	0.93	9.94	9.97	12.32	7.4	5.07
Kaduna	1.03	0.95	1.02	0.84	0.71	0.63	0.82	0.83	0.82	0.09	1.03	1.02	10.79	10.63	15.85	11.86	7.9
Kano	1.04	0.94	1.08	0.91	0.81	0.71	0.78	0.82	0.89	0.53	0.95	1.04	10.95	11.10	12.84	10.1	7.11
Port	1.10	1.06	1.15	1.08	1.01	0.92	0.97	1.08	1.04	0.85	1.07	1.18	12.68	11.38	13.29	10.14	7.86
Harcourt																	
Yola	0.43	0.37	0.55	0.44	0.42	0.35	0.42	0.40	0.09	0.11	0.10	0.37	4.07	4.11	5.21	5.84	4.58
Total	14.68	13.65	15.33	13.92	13.15	13.58	13.50	13.84	13.96	11.92	16.46	16.46	172.34	158.65	210.37	152.03	109.03

NBET and MO are Nigeria Bulk Electricity Trader and Market Operator respectively.





Table F.5: Remittances to NBET and MO by DisCos, 2019-2023

	Jan23	Feb23	Mar23	Apr23	May23	Jun23	Jul23	Aug23	Sep23	Oct23	Nov23	Dec23	2023	2022	2021	2020	2019
Remittances to NBET	Amount in (₦'Billion)																
Abuja	4.58	8.32	7.11	7.89	9.31	7.60	8.02	7.49	8.52	10.63	9.41	10.10	98.96	83.07	64.90	34.23	34.98
Benin	4.54	5.31	5.58	5.27	5.09	3.84	3.96	2.84	2.07	4.69	3.54	3.90	50.64	46.64	33.09	19.70	14.10
Eko	6.71	5.92	6.85	5.67	8.62	4.87	6.42	6.60	7.33	9.07	10.20	11.50	89.75	72.37	64.12	35.60	31.92
Enugu	4.90	5.50	5.32	5.49	6.51	4.63	2.70	2.74	3.43	3.60	4.01	3.97	52.80	51.08	42.26	19.74	12.45
Ibadan	5.24	6.65	7.01	6.71	7.42	5.04	3.52	3.72	4.50	4.97	4.71	6.37	65.75	64.18	53.36	30.31	22.74
Ikeja	9.81	10.79	9.06	11.27	11.68	8.82	9.69	9.83	9.69	9.74	11.46	8.19	120.03	102.95	93.37	47.99	34.37
Jos	2.26	2.45	2.69	2.25	2.78	1.54	0.78	0.94	1.50	1.16	1.90	1.57	21.82	21.05	13.13	4.66	2.12
Kaduna	0.54	0.97	0.37	0.64	0.92	0.42	0.47	0.09	0.52	0.32	0.42	0.48	6.14	10.11	14.28	12.42	6.92
Kano	2.22	2.30	1.63	2.08	2.06	1.94	1.41	2.36	2.02	2.17	2.59	2.42	25.20	27.72	31.72	13.02	10.20
Port Harcourt	3.88	2.73	2.98	4.36	4.67	1.91	3.69	3.36	2.75	3.53	3.35	4.53	41.74	31.96	24.62	8.93	8.55
Yola	0.31	0.30	0.40	0.32	0.41	0.46	0.52	0.50	0.53	0.67	0.72	0.28	5.42	2.31	2.96	2.76	2.99
Total	44.98	51.22	48.99	51.95	59.46	41.07	41.18	40.47	42.87	50.54	53.50	53.30	578.34	513.43	437.81	229.36	181.34
Remittances to MO	Amount in (₦'Billion)																
Abuja	1.04	1.69	1.53	1.82	1.43	2.13	2.21	1.67	1.84	2.17	1.78	1.50	20.79	17.46	27.78	16.68	11.08
Benin	0.87	1.08	1.33	0.93	0.60	1.09	2.06	0.84	0.62	1.18	0.86	0.76	12.23	10.36	15.23	13.64	7.09
Eko	1.39	1.20	1.38	1.15	1.19	1.42	1.45	1.48	1.67	1.90	1.92	2.02	18.16	15.20	22.93	17.99	12.02
Enugu	0.80	0.94	0.80	0.97	0.80	1.17	0.62	0.63	0.79	0.79	0.85	0.69	9.86	10.01	16.06	13.07	6.76
Ibadan	0.88	1.16	1.00	1.87	0.86	1.47	2.05	1.62	1.26	1.78	1.14	1.41	16.49	18.55	21.25	20.27	11.24
Ikeja	1.82	1.92	1.54	1.94	1.43	3.54	2.20	2.19	2.13	2.09	2.33	1.31	24.44	19.97	23.51	21.61	13.35
Jos	0.57	0.73	0.65	0.72	0.50	0.59	0.29	0.36	0.57	0.42	0.62	0.42	6.47	6.28	9.21	7.04	3.58
Kaduna	0.07	0.17	0.03	0.09	0.10	0.09	0.13	0.03	0.15	0.09	0.10	0.10	1.16	3.27	5.02	9.21	5.70
Kano	0.45	0.45	0.32	0.41	0.27	0.57	0.38	0.63	0.54	0.53	0.56	0.48	5.59	6.46	8.50	9.19	4.92
Port Harcourt	0.92	0.61	0.47	1.25	0.72	0.52	0.91	0.93	0.74	0.85	0.78	0.82	9.50	7.23	10.30	9.46	5.74
Yola	0.47	0.37	0.39	0.50	0.40	0.35	0.42	0.40	0.09	0.11	0.10	0.07	3.69	4.06	1.44	2.82	3.89
Total	9.28	10.32	9.45	11.65	8.29	12.94	12.73	10.79	10.39	11.92	11.05	9.58	128.38	118.82	161.23	140.98	85.36

NBET and MO are Nigeria Bulk Electricity Trader and Market Operator respectively.





Table F.6: Annual shortfalls to NBET and MO by DisCos, 2019-2023

	Jan23	Feb23	Mar23	Apr23	May23	Jun23	Jul23	Aug23	Sep23	Oct23	Nov23	Dec23	2023	2022	2021	2020	2019
Shortfalls to NBET	Amount in (₦'Billion)																
Abuja	-6.56	-2.61	-5.69	-3.85	-5.77	-11.32	-11.38	-11.94	-11.05	-11.92	-14.82	-6.50	-103.41	-26.54	-36.43	-55.68	-52.89
Benin	-2.04	-1.14	-1.49	-1.55	-4.22	-6.73	-6.40	-7.35	-9.01	-7.54	-9.20	-2.95	-59.62	-28.26	-39.77	-45.22	-40.18
Eko	-1.52	-1.48	-1.53	-1.47	-1.62	-7.46	-6.80	-7.00	-7.77	-9.61	-10.80	-0.9	-57.96	-12.06	-28.89	-48.52	-46.07
Enugu	-1.91	-1.47	-1.71	-1.38	-2.49	-5.93	-7.45	-7.48	-7.26	-9.30	-9.22	-4.5	-60.10	-23.93	-32.79	-43.14	-40.49
Ibadan	-3.53	-2.12	-2.85	-2.08	-4.61	-8.43	-9.95	-10.27	-11.00	-12.35	-14.67	-2.79	-84.64	-36.27	-54.72	-67.41	-60.47
Ikeja	-1.59	-0.74	-4.09	-0.38	-4.20	-10.52	-10.81	-10.95	-10.81	-12.36	-12.78	-7.48	-86.71	-14.95	-29.13	-59.20	-55.14
Jos	-2.30	-1.97	-1.98	-2.12	-2.82	-3.91	-5.88	-5.59	-5.56	-7.17	-6.75	-1.86	-47.91	-24.51	-28.20	-32.78	-27.34
Kaduna	-4.69	-4.11	-4.97	-3.92	-4.51	-5.46	-6.87	-7.26	-6.79	-9.80	-10.32	-4.48	-73.18	-50.33	-49.69	-45.92	-38.77
Kano	-3.12	-2.79	-4.19	-2.76	-4.19	-4.22	-5.61	-5.04	-6.06	-7.60	-8.02	-2.79	-56.39	-29.87	-26.94	-39.41	-31.07
Port Harcourt	-1.87	-3.20	-2.97	-1.37	-3.23	-6.68	-5.24	-6.08	-6.64	-6.78	-7.80	-2.00	-53.86	-25.32	-29.66	-39.46	-37.22
Yola	-2.11	-2.02	-2.71	-2.18	-2.76	-2.63	-3.44	-3.25	-3.49	-4.35	-4.67	0.00	-33.63	-23.17	-23.42	-24.60	-23.50
Total	-31.24	-23.65	-34.18	-23.06	-40.42	-73.29	-79.83	-82.81	-85.44	-98.78	-109.07	-36.25	-717.42	-295.21	-379.65	-501.35	-453.13
Shortfalls to MO	Amount in (₦'Billion)																
Abuja	-1.00	-0.17	-0.75	-0.39	-0.56	-0.17	0.12	-0.52	-0.30	-0.16	-0.54	-0.96	-5.41	+2.81	+2.18	2.97	4.03
Benin	-0.43	-0.12	0.00	-0.35	-0.65	-0.18	0.90	-0.32	-0.64	-0.10	-0.33	-0.57	-2.79	+5.08	-4.98	-0.13	2.24
Eko	-0.21	-0.20	-0.21	-0.21	-0.21	-0.10	-0.10	-0.09	-0.10	-0.09	-0.09	-0.10	-1.83	+1.95	-0.50	0.04	1.36
Enugu	-0.49	-0.31	-0.36	-0.29	-0.41	-0.11	-0.50	-0.50	-0.39	-0.57	-0.50	-0.78	-5.22	+5.57	-4.36	0.01	2.34
Ibadan	-0.85	-0.46	-0.87	0.29	-0.65	-0.13	0.51	-0.00	-0.49	-0.03	-0.76	-0.62	-4.08	+2.33	-7.79	0.55	3.05
Ikeja	-0.40	-0.22	-0.86	-0.22	-0.65	1.34	-0.08	-0.08	-0.08	-0.14	-0.01	-1.20	-2.60	+2.35	-8.65	0.01	1.95
Jos	-0.33	-0.12	-0.22	-0.08	-0.26	-0.09	-0.47	-0.40	-0.25	-0.51	-0.24	-0.50	-3.47	+3.51	-3.11	0.36	1.49
Kaduna	-0.96	-0.78	-0.99	-0.74	-0.61	-0.54	-0.69	-0.81	-0.67	-0.99	-0.93	-0.92	-9.63	+7.36	-10.84	2.64	2.19
Kano	-0.58	-0.49	-0.77	-0.50	-0.54	-0.14	-0.40	-0.19	-0.35	-0.46	-0.39	-0.56	-5.36	+4.66	-4.35	0.90	2.18
Port Harcourt	-0.18	-0.46	-0.68	0.17	-0.29	-0.40	-0.06	-0.15	-0.30	-0.17	-0.29	-0.36	-3.17	+4.14	-3.00	0.68	2.13
Yola	0.04	-0.00	-0.17	0.05	-0.02	-0.00	0.00	0.00	-0.00	-0.00	-0.00	-0.29	-0.38	+0.08	-3.76	3.01	0.69
Total	-5.40	-3.33	-5.88	-2.28	-4.85	-0.63	-0.77	-3.05	-3.57	-3.23	-4.08	-6.87	-43.96	+39.84	-49.14	11.05	23.66

Notes of the table:

1. NBET and MO are Nigeria Bulk Electricity Trader and Market Operators respectively.





Table F.7: Market invoice, remittance and shortfall by DisCos, 2019-2023

DisCos	Invoice (₦' Billion)					Remittances (₦' Billion)				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Abuja	158.12	118.96	126.93	109.57	102.99	119.76	100.53	92.68	50.91	46.07
Benin	68.25	78.00	93.08	78.44	63.61	62.87	57.01	48.32	33.34	21.19
Eko	104.85	89.64	116.44	102.14	91.37	107.90	87.55	87.05	53.58	43.94
Enugu	79.78	82.33	95.47	75.96	62.03	62.66	61.10	58.32	32.81	19.21
Ibadan	91.29	101.76	137.1	118.53	97.50	82.33	82.72	74.61	50.58	33.98
Ikeja	151.81	123.19	154.67	128.80	104.82	144.47	122.90	116.88	69.60	47.72
Jos	35.03	38.53	53.65	44.84	34.52	28.29	27.33	22.34	11.70	5.70
Kaduna	45.70	60.65	79.82	70.20	53.58	7.30	13.39	19.3	21.64	12.62
Kano	50.70	58.61	71.5	62.52	48.38	30.79	34.18	40.22	22.21	15.12
Port Harcourt	63.29	57.76	67.57	58.53	53.63	51.25	39.18	34.92	18.39	14.28
Yola	9.23	6.81	31.59	33.20	31.07	9.11	6.37	4.4	5.59	6.88
Total	858.03	816.25	1,027.83	882.73	743.50	706.73	632.25	599.04	370.34	266.71
Average	78.00	74.20	93.44	80.25	67.59	64.25	57.48	54.46	33.67	24.25
	Shortfalls (₦' Billion)					Remittance Performance (%)				
DisCos	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Abuja	-38.36	18.43	-34.25	58.66	56.92	75.74	84.51	73.02	46.46	44.73
Benin	-5.38	21.00	-44.75	45.10	42.42	92.12	73.08	51.91	42.51	33.31
Eko	3.05	2.09	-29.39	48.56	47.43	102.91	97.67	74.76	52.46	48.09
Enugu	-17.12	21.23	-37.15	43.15	42.82	78.54	74.21	61.09	43.20	30.96
Ibadan	-8.96	19.04	-62.51	67.96	63.52	90.19	81.29	54.42	42.67	34.85
Ikeja	-7.34	0.29	-37.78	59.21	57.10	95.17	99.76	75.57	54.03	45.52
Jos	-6.74	11.20	-31.31	33.14	28.82	80.76	70.93	41.64	26.09	16.50
Kaduna	-38.40	47.27	-60.53	48.57	40.96	15.97	22.07	24.18	30.82	23.56
Kano	-19.91	24.43	-31.29	40.31	33.25	60.73	58.32	56.25	35.52	31.26
Port Harcourt	-12.04	18.57	-32.66	40.14	39.35	80.98	67.84	51.68	31.42	26.63
Yola	-0.12	0.44	-27.18	27.61	24.19	98.70	93.51	13.93	16.83	22.14
Total	-151.30	184.00	-428.79	512.39	476.79	82.37	77.46	58.28	41.95	35.87
Average	13.76	16.73	-38.98	46.58	43.34	79.51	74.84	58.28	38.36	32.51

Notes of the table:

1. NBET and MO are Nigeria Bulk Electricity Trader and Market Operator respectively.
2. 2023 and 2022 market data are based on MRO.





NIGERIAN ELECTRICITY REGULATORY COMMISSION

Plot 1387 Cadastral Zone A00, Central
Business Disreict, PMB 136, Garki Abuja