RATE DESIGN AND FILING REPORT

JULY 2023

KEDCO

KANO ELECTRICITY DISTRIBUTION COMPANY PLC

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INTRODUCTION

Further to the ongoing efforts on market reset towards ensuring viability and sustainability in the Nigeria Electricity Supply Industry (NESI), Kano Electricity Distribution Company Plc, has carried out review of the input Assumptions in the MYTO Model. The review has provided KEDCO the opportunity to design a Cost-reflective Tariff that will guarantee cost recovery and financial sustainability of the Company in particular and the industry at large.

The review focused on the company's current revenue requirement, performance levels, and market remittances, while ensuring End-user tariffs are fair and affordable. On the input assumptions, the efficiency parameters were reviewed by way of replacing the projected ATC&C losses in the MYTO with the actual 2023 loss level and projected loss reduction trajectory for the next five years. Also reviewed were the Admin Operating cost, Fixed O&M, Variable O&M, CAPEX allowance (as approved in the PIP), and customer number where the life-line customers will be phased out by 2026.

This was followed by the development of three (3) rate design scenarios considering full and partial recovery within the five-year tariff path. Also, presented are projected performance targets and commitments, market remittances and envisaged challenges and their impacts on performance commitments. Other input assumptions remained unchanged particularly the macroeconomic parameters: Exchange rate, Inflation rate(for both Nigeria and US), Transmission Loss Factor, Energy allocation (as projected in the current MYTO).

INPUT ASSUMPTIONS

This section presents the review of the input assumptions on ATC&C losses, Admin Operating Cost, Fixed and variable O&M cost, Capital Expenditure and Customer Number.

Efficiency Parameters

Table 1: Efficiency Parameters

Description	2022	2023	2024	2025	2026	2027
Projected ATC&C Losses Reduction Trajectory Based on 2023 Actual Loss Level	**15.85%**	**53.07%**	**50.42%**	**42.85%**	**30.00%**	**20.40%**

Table 1 shows the aggregate technical, commercial and collection losses (ATC&C Losses) from the current MYTO trajectory of 15.85% to the actual loss level of Kano Disco of 53.07%. This is expected to be reduced aggressively to closed at 20.40% by the end of 2027. We are optimistic that our investment plan, as set out in the PIP will support the five-year loss reduction trajectory as projected.

Admin Operating Cost, Fixed and Variable Operation & Maintenance Cost, and Capital Expenditure

Table 2: Operating Costs

Line Item	Current (2023)	Proposed Review (2023)
Fixed O&M Cost	**1,096,389**	**3,824,346**
Variable O&M Cost	**8,667,331**	**15,893,465**
Admin Operating Cost	**7,991685**	**12,256,175**

Table 2 shows the operating expenses both the current and the proposed. We are proposing an upward review of admin operating cost as well as the fixed and variable O&M costs. This is inline with our correspondences on the need to review these costs upward as the current admin operating cost that is made available to KEDCo which is being used for both admin and O&M costs is grossly inadequate thereby impeding our operational efficiency. Furthermore, we are proposing and appealing to the commission to avail us a fraction of the O&M costs (both Fixed and Variable) for a more effective network reinforcement and preventive maintenance.

Capex Provision

Table 3: Capital Expenditure Schedule

Naira Million	2023	2024	2025	2026	2027
Projected Capex Provision as Approved in the PIP	**14,010**	**12,611**	**12,611**	**12,611**	**12,611**

Table 3 depicts the capital expenditure schedule as approved in the performance improvement plan (PIP) and December 2022 MYTO. However, we are considering 2023 as year 1 for this tariff plan and in line with our aggressive loss reduction trajectory.

Customer Numbers

Table 4: Customer Number Projections

Category	2022	2023	2024	2025	2026	2027	2028
Life-line	16,518	17,344	867	43	2	0	0
A - Non MD	97,759	104,602	111,924	119,759	128,142	137,112	146,710
A - MD1	947	1,013	1,084	1,160	1,241	1,328	1,421
A - MD2	219	234	250	268	287	307	328
B - Non MD	95,513	102,199	109,353	117,008	125,199	133,963	143,340
B - MD1	364	390	417	446	477	511	546
B - MD2	27	29	31	34	36	39	41
C - Non MD	231,220	247,405	264,724	283,255	303,082	324,298	347,000
C - MD1	923	987	1,057	1,130	1,210	1,294	1,385
C - MD2	34	37	39	42	45	48	52
D - Non MD	241,665	258,581	276,682	296,050	316,774	338,948	362,675
D - MD1	155	165	177	189	203	217	232
D - MD2	10	11	12	13	14	14	15
E - Non MD	73,055	78,169	83,641	89,496	95,760	102,464	109,636
E - MD1	8	9	9	10	11	11	12
E - MD2	6	6	7	7	8	8	9
Total Customers	**758,422**	**811,181**	**850,274**	**908,909**	**972,489**	**1,040,562**	**1,113,401**

We plan to phase out the life-line customer category by 2026 and to grow the total customers on our database to over a million customers by 2027, as show on table 4. This will help us reduce the impact of cross subsidy on customers on bands A & B, thus making our tariffs fair and affordable.

PROJECTED PERFORMANCE TARGETS AND COMMITMENTS

An analysis of Kano Electricity Distribution Company (KEDCO)'s projected performance and targets, with focus on key performance indicators (KPIs) derived from the Multi-Year Tariff Order (MYTO) and the Nigerian Electricity Regulatory Commission's (NERC) Order on Performance Monitoring Framework, covers four essential areas: Energy Offtake, Commercial Performance, Operational Efficiency, and Loss Reduction Trajectory.

Our historical performance, from January 2022 to May 2023 indicates a slightly stable Energy Offtake with a decline in mid-2022 and recent months attributed mainly to drop in energy allocation and TCN Network issues. The Commercial performance within the same period followed the same trend with a major improvement in Collection from July 2022 to Q1 2023, attributed to increase in operational efficiency and reduction in both commercial and collection losses.

Energy offtake is a crucial KPI that measures the total electricity consumed by KEDCO's customers. To make projection on Energy Offtake, we consider factors such as the growth in customer base expected to be around 7% annually, energy demand patterns and growth of average of 11% annually for the next five years. Improvement in supply availability and reliability through a combination of grid reinforcement, capacity additions, and enhanced transmission and distribution infrastructure and deployment of quick response teams to minimize downtime and improve reliability.

KEDCO’s Commercial performance indicators will focus on improving billing efficiency and revenue collection, which are critical for financial sustainability and improving the overall performance of the company. To achieve this, we will put more emphasis on Economic Dispatch of energy, optimizing our Billing Process and reducing commercial losses (averaging an annual growth of 2% in Billing Efficiency), reducing the Metering Gap by 10% annually and implementing smart metering solutions and revenue protection systems like AMI and DT Metering. Also, we plan to enhance customer engagement and communication which is expected to impact on customer experience and willingness to pay for electricity consumed. With the successful implementation of these strategies, KEDCO aims for a steady annual revenue growth of 8% - 10% over the next five years.

MARKET REMITTANCES

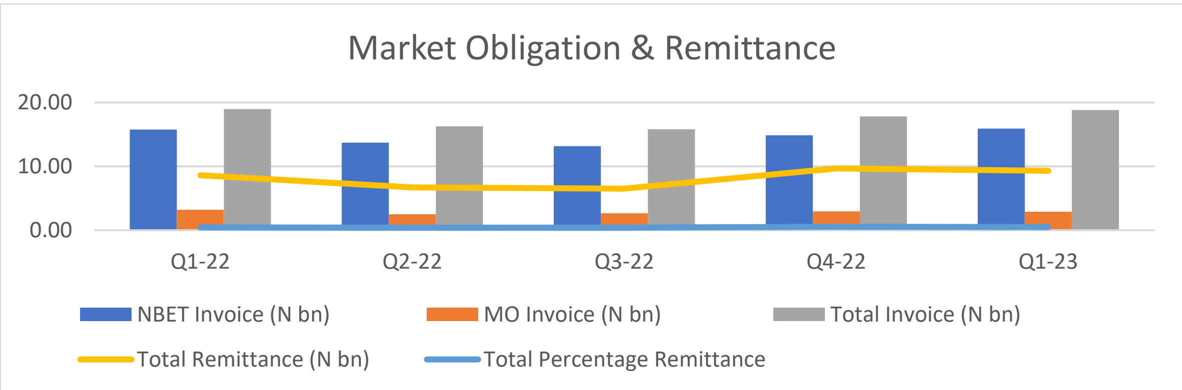
KEDCO like every other DISCO in the NESI, have specific market remittance expectations mainly payments to the Market Operator to cover the cost of energy, capacity charges, and other market-related fees and payments to NBET for the electricity received and sold to end-user customers. Poor revenue collection, hight ATC&C, Non-Reflective Tariffs and other operational inefficiencies has affected KEDCO's ability to meet full market obligation, further leading to liquidity challenges in NESI.

1. **Historical Market Remittance**

Between Q1 2022 & Q1 2023, KEDCO average Market Remittance stands at about 46% with an improvement of about 20% from Q3 2022 to Q1 2023 as indicated in the table and chart below.

Table 8: Historical Quarterly Minimum Remittance

Description	Q1-22	Q2-22	Q3-22	Q4-22	Q1-23
NBET Invoice (N bn)	15.77	13.72	13.15	14.86	15.91
MO Invoice (N bn)	3.20	2.52	2.65	2.94	2.89
Total Invoice (N bn)	18.97	16.24	15.80	17.80	18.80
Total Remittance (N bn)	8.63	6.73	6.51	9.68	9.31
Total Percentage Remittance	**45%**	**41%**	**41%**	**54%**	**50%**



2. **Projected Market Remittance**

With the successful implementation of KEDCO's strategic initiatives, we expect a steady increase in annual Market Remittance of about 56%, 50% and 36% for scenarios A, B, and C respectively. The table below show our expected growth in revenue and improvement in market remittance.

Table 9: Projected Annual Minimum Remittance Schedule 2023-2027

Description	2023	2024	2025	2026	2027
Scenario A	37.74%	68.98%	82.44%	135.95%	100%
Scenario B	29.96%	43.90%	63.27%	100.00%	100%
Scenario C	37.74%	59.93%	76.04%	92.03%	100%

PIP FUNDING PLAN

According to our assumptions in all the scenarios, KEDCO's expected funding sources for the period 2023 to 2027 will include various options. The company plans to generate 10% of the required funding from retained revenue surplus. KEDCO also plans to secure 15% of the funding from Equity Investment.

The envisage to secure another 10% of the required CAPEX funding from International Finance Corporation (IFC) and Federal Government through the Central Bank of Nigeria. This funding is likely to come in the form of long-term loans with single digit interest rate.

The Distribution Sector Recovery Program (DISREP) which is a World Bank initiative and intervention program aimed to support the implementation of DISCOs' Performance Improvement Plan (PIP). The Program will provide concessional lending to KEDCO via shareholder loans from BPE, to support the implementation of our approved PIPs and Metering (NMMP Phase 2) through the Investment Project Financing. The expected funds will cover 40% of our approved PIP and metering plan.

Finally, KEDCO is expecting 25% for our capex provision to come from Meter Acquisition Fund to finance NMMP Phase 1.

Overall, the expected total funding for KEDCO during the period 2023 to 2027 is N64.5bn.

Table 10: Planned Sources of Funding

Source of Funds	%	Year 1	Year 2	Year 3	Year 4	Year 5	Total
		2023	2024	2025	2026	2027	
Retained Surplus (₦m)	10%	1,401	1,261	1,261	1,261	1,261	6,445
Equity Investment (₦m)	15%	2,102	1,892	1,892	1,892	1,892	9,668
IFC/CBN/FG Loan (₦m)	10%	1,401	1,261	1,261	1,261	1,261	6,445
World Bank [DISREP/IPF] - (Nm)	40%	5,604	5,044	5,044	5,044	5,044	25,782
MAF (Nm)	25%	3,503	3,153	3,153	3,153	3,153	16,114
Total (₦m)		14,010	12,611	12,611	12,611	12,611	**64,454**

CHALLENGES MILITATING AGAINST MEETING PERFORMANCE OBLIGATIONS

1. **Interest Charges on Market Shortfall**

The lack of cost-reflective tariffs and the resultant growth in tariff shortfalls, the revenues of the Discos have been unable to support the full settlement of market invoices as well as the necessary investments in the Discos to improve revenue and service reliability. W hile NBET has been allowed to charge interest on the amounts owed by the Discos on their market shortfall, the Discos have not been allowed to charge interest on the accrued tariff shortfalls or charge interest on customers outstanding amount for nonpayment. The resultant impact of the NBET and MO interest cost is allowed to remain on our books which further widens the gap in our cashflow.

2. **Capping Order and its Impact on Market Remittances**

The continuous existence of estimated billing is due to the inability of the Meter Asset Providers (MAP) to provide the Disco customers with meters at the pace originally envisaged by the commission. By capping the billable amount to Disco's customers, the Order is essentially restricting the allowable revenue and is further compounding the liquidity and cashflow challenges, as well as worsening the ability of the Discos to settle market obligations in full.

3. **TCN Interface Constraints**

KEDCO distributes power to customers through its 189 Feeders (both 33kV and 11kV), via 53 Injection Sub-stations having a total installed capacity of 705 MVA. The Company receives power from the TCN through three sources; 330kV Kano-Kaduna Line, 132kV Funtua Line, and 132kV Kwanar Dangora line. The Company has one 330/132kV Transmission Sub-Station and thirteen 132/33kV Transmission Sub-Stations.

TCN interface constraints within Kano DISCO is a well-known issue that has been lingering for a while now. These issues have affected our ability to take full load allocation and significantly limited our ability to supply customers, particularly at our Load Centers of Dakata, Dan'agundi and Katsina. Some of the major TCN interface constraints issues are listed below.

I. Kumbotso 4x150MVA, 330/132kV, 2x30MVA+40MVA+60MVA, 132/33KV TS: The Kaduna (Mando) – Kano Single Circuit (SC) line cannot be loaded beyond 350MW comfortably at any given time. This is a major drawback on power evacuation in our coverage area. All the four 150 MVA, 330/132 are currently overloaded and there is no availability of 33kV bay to evacuate power from Kumbotso TS;

II. Dan'agundi 3x60MVA, 132/33KV TS: The 132KV line from Kumbotso TS to Dan'agundi is under sized and over-loaded. The line feeds half of the entire Kano Metropolis and is already overstretched. This has made the available capacity of 3x60MVA effectively under-utilized as the line can only accommodate 70MW safely and unavailability of bay to radiate more feeder is another bottleneck. Furthermore, all the existing power transformers are currently overloaded.

III. Dakata 2x60MVA+30MVA, 132/33KV TS: The 132KV line from Kumbotso TS to Dakata has similar issue with that of Dan'agundi line, it is under sized and overstretched. This has also made the available capacity of 2x60MVA + 30MVA under-utilized as the line can only accommodate 70MW safely and unavailability of bay to radiate more feeder is another bottleneck. Furthermore, all the existing power transformers are currently overloaded.

IV. Kankia 2x30MVA, 132/33KV TS: Only one power transformer is operational while the other power transformer is out since inception. The existing power transformer is overloaded.

V. Kano - Kankia – Katsina - Daura 132KV line is in critical need of re-conducting. The line has a history of low voltage at full load due to under sized conductor. The feeders have a combined load demand of about 100MW.

VI. Kwanar Dangora 1x30/40 MVA, 132/33kV TS: The existing power transformer is overloaded and additional power transformer is required.

VII. Kano-Hadejia 132/33kV line has undersized conductor and currently overloaded. Line has a limitation of 50MW.

VIII. Walalambe 2x40MVA, 132/33KV TS: The transmission substation has been on-going for the last fifteen (15) years. It was proposed to be connected to 132KV Hadejia line that needs re-conducting.

4. Security Challenges and Forbearance

The operation of the KEDCO is affected by insecurity particularly in Katsina State. The security challenges like Insurgency, Terrorism and Banditry in communities around Funtua, Kankiya, Dandume, Faskari and Sabuwa among others have significantly affected KEDCO's ability to supply electricity to customers, leading to high cases of Vandalism, Theft, Safety concerns for our personnel operating within the areas, limited access to carryout network maintenance and Bill payment resistance and unwillingness of some customers to pay for electricity consumed further aggravating the revenue shortfall of the company.

To mitigate the security challenges, KEDCO have been implementing several measures including collaborating with Security Agencies, Community Engagement, deployment of flexible billing and payment solutions and recently exploring the use of alternative energy solutions such as Mini-grids or Distributed Energy Resources to provide localized power supply and reduce dependence on the main grid infrastructure existing the areas that are prone to attack and vandalism.

CONCLUSION AND PRAYERS

1. The review of the efficiency parameters particularly the ATC&C levels has become imperative due to the wide variance between the current level as projected in the MYTO and actual loss level. Other reviewed parameters like the Admin Opex and O&M cost were necessitated by the gross inadequacy of the current provision. We are appealing

to the Commission, to approve Admin Opex as proposed in the rate design and an approval to access a fraction of the O&M cost as provided in the MYTO.

2. Interest charges on the market shortfall over the years have worsen our liquidity situation and thus making it practically impossible to settle our market invoices in full. The situation is more precarious as KEDCO is not allowed to charge customers interest on their outstanding balances. As such, we are appealing to the Commission to direct NBET and MO to discontinue charging interest on the market shortfall, also expunge the interest components on our outstanding market obligations.

3. We understand the rationale behind the capping order but with the creation of the meter acquisition fund in the MYTO, the metering intervention funds from the federal government and the world bank, and the metering deployment plan in our PIP, we are positive the metering gap in our franchise will be aggressively closed. Thus, we are appealing for the Commission's consideration towards suspending the Capping Order to allow for full billing and recovery of revenue requirement of the entire value chain.

4. Though TCN has awarded contracts to address some of interface and network constraints challenges, almost all the projects are yet to commence or halted due to pending Right-of-Way (ROW) and Exchange rate issues. We urge the Commission and the Government at both State and Federal to intervene on the ROW issues and provide lasting solutions.

5. To further alleviate the security challenges and its impact on our operations and revenue, we appeal to the Commission to consider a concessionary rate on market remittance for the supplied to the affected areas. This will reduce our market shortfall and the corresponding pressure on customers to pay bills in full.