



Global Scientific and Academic Research Journal of Economics, Business and Management

ISSN: 2583-5645 (Online)

Frequency: Monthly

Published By GSAR Publishers

Journal Homepage Link- <https://gsarpublishers.com/journals-gsarjebm-home/>



Corporate Governance, Performance Accountability and the Recapitalisation of Abuja Electricity Distribution Company (AEDC): A Case Study, 2013–2025

By

Godwin Orakpowenri Orovwiroro, PhD, DBA, FIMC, CGEIT

University of Port Harcourt Business School, University of Port Harcourt.



Article History

Received: 21/08/2026

Accepted: 05/09/2026

Published: 07/09/2026

Vol –5 Issue – 9

PP: -20-29

Abstract

The privatisation of Nigeria's electricity distribution sector in November 2013 created a new class of commercially oriented Distribution Companies (DisCos), of which the Abuja Electricity Distribution Company (AEDC) emerged as one of the most strategically significant, serving the Federal Capital Territory (FCT) and three contiguous states. This article presents a longitudinal case study examining AEDC's corporate governance architecture, performance accountability mechanisms, and recapitalisation trajectory between 2013 and 2025. Drawing on transaction-level operational data, regulatory filings with the Nigerian Electricity Regulatory Commission (NERC), published government policy documents, and a systematic review of the extant academic literature, the study documents how AEDC evolved from a loss-saturated, governance-deficient utility with aggregate technical, commercial, and collection (ATC&C) losses exceeding 63% in 2013 to a progressively reformed enterprise recording losses of 36.1% by the third quarter of 2025. The article critically interrogates the interplay between board-level governance reforms, capital injection phases totalling approximately ₦107 billion across four investment tranches, deployment of enabling technologies—including smart metering, advanced metering infrastructure (AMI), customer relationship management (CRM) platforms, and payment digitalisation—and the persistent headwinds of insecurity, regulatory tariff lags, estimated billing disputes, and market obligation shortfalls. A stakeholder accountability lens informed by agency theory and the principal–agent framework structures the analysis. Findings indicate that while measurable governance improvements have occurred, structural accountability gaps, liquidity crises rooted in the multi-market-obligation chain, and the security environment of the North-Central and FCT zones continue to constrain full commercial viability. The article concludes with actionable recommendations for regulators, investors, and DisCo leadership targeting the sector's long-term financial sustainability.

Keywords: Abuja Electricity Distribution Company, corporate governance, ATC&C loss reduction, electricity privatisation, recapitalisation, performance accountability, Nigeria power sector, agency theory, smart metering, insecurity and revenue collection

Introduction

On 1 November 2013, the Federal Government of Nigeria (FGN) transferred the assets and operational control of eleven electricity distribution companies (DisCos) to core investors in what was the most ambitious utilities-privatisation exercise in sub-Saharan Africa's post-independence history. This transaction, facilitated by the Bureau of Public Enterprises (BPE) and regulated by the Nigerian Electricity Regulatory Commission (NERC), sought to end the operational inefficiencies, fiscal haemorrhage, and chronic under-

investment that had accumulated over decades of PHCN-era monopoly management (Iwayemi, 2016; Adenikinju, 2018).

Abuja Electricity Distribution Company (AEDC) emerged as one of eleven successor DisCos from this privatisation exercise, with KANN Consortium as the core investor holding a 60% equity stake, the FGN retaining 40% through the Niger Delta Power Holding Company (NDPHC), and subsequent shareholding adjustments involving Viathan Engineering and other domestic investors. AEDC's franchise area spans the Federal Capital Territory (FCT), Kogi, Niger, and Nasarawa States—a combined landmass of approximately 133,000



square kilometres serving a population estimated at 11.2 million as of 2025 (AEDC, 2024; NPC, 2023).

The imperative of this study derives from three converging realities. First, AEDC's franchise territory encompasses Nigeria's seat of government, rendering its operational credibility a matter of national political economy, beyond simple utility economics. Second, the company's performance trajectory, despite consistent capital injection and governance interventions, remains characterised by persistent ATC&C losses, mounting market obligations, estimated billing controversies, and revenue shortfalls that collectively undermine financial sustainability. Third, the security environment across the North-Central geo-political zone—including terrorism, banditry, communal conflicts, and farmer-herder clashes—has emerged as a quantifiable exogenous variable that disrupts field operations, endangers revenue collection personnel, and depresses customer payment behaviour in ways insufficiently documented in the DisCo governance literature.

This article addresses these gaps through a case study methodology anchored in twelve years of operational data (2013–2025), governance documentation, and a critical engagement with performance accountability theory. The objectives, literature, theoretical framework, and empirical findings are presented in successive sections to provide both analytical rigour and practical utility for sector stakeholders.

Statement of the Problem

More than a decade after the transfer of technical and commercial management to private core investors, AEDC's operational and financial performance remains structurally compromised. Several interconnected problems define this performance deficit.

First, despite successive rounds of recapitalisation, ATC&C losses remain more than double international best-practice benchmarks of 10–15% for urban distribution utilities (World Bank, 2023). While losses have declined from 63.2% in 2013 to 36.1% by mid-2025, the reduction trajectory is insufficiently steep to meet NERC's performance improvement plan targets or attract additional institutional capital on competitive terms.

Second, a systemic market obligation crisis persists. AEDC, like other DisCos, sits at the downstream end of the electricity value chain and is contractually obligated to remit payments to bulk supplier NBET (Nigerian Bulk Electricity Trader) and the transmission company, TCN. These remittances are predicated on collections achieved, but tariff-cost shortfalls, subsidies, and metering gaps mean that actual collections consistently fall short of bulk-purchase obligations, creating a circular debt dynamic that Babatunde et al. (2022) estimate has accumulated to over ₦1.8 trillion sector-wide by 2023.

Third, governance accountability gaps are evident in board composition, performance contracting, and regulatory compliance. The principal–agent tensions between the core investor (agent) and both the FGN minority shareholder and the regulator NERC (principals) have produced strategic

misalignment, information asymmetry, and incentive distortions that hinder optimal performance (Abdulkarim & Oke, 2021).

Fourth, the insecurity challenge across AEDC's coverage area—spanning the FCT and three states subject to banditry, herder-farmer violence, and occasional insurgency-related disruptions—has generated measurable collection losses, infrastructure vandalism, and operational constraints that are inadequately recognised in existing performance accountability frameworks.

These interlocking challenges motivate the present investigation.

Research Objectives

The specific objectives of this study are to:

1. Trace the evolution of AEDC's corporate governance framework from privatisation in 2013 to 2025, assessing structural improvements and residual deficits;
2. Analyse transaction-level billing, collection, loss, and remittance performance data across the twelve-year study period;
3. Evaluate the relationship between successive recapitalisation tranches and quantifiable operational performance outcomes;
4. Examine the impact of insecurity and operational disruptions on revenue collection efficiency within the AEDC franchise area;
5. Assess AEDC's technology adoption strategy, including smart metering, digitalisation of payments, and customer engagement platforms;
6. Identify lessons from AEDC's experience relevant to DisCo governance, regulatory design, and sector financial sustainability in Nigeria; and
7. Formulate evidence-based recommendations for investors, regulators, and DisCo management.

Conceptual Framework

1. Corporate Governance in Regulated Utilities

Corporate governance in the electricity sector differs from general corporate governance in critical respects: the simultaneous presence of multiple principals (private investors, the state, the regulator, and consumers), the public-good dimension of electricity access, and the capital intensity that creates long investment horizons with uncertain returns (Tricker, 2019; World Bank, 2020). Monks and Minow (2011) define corporate governance as the system by which companies are directed and controlled, encompassing board composition, executive accountability, shareholder rights, and stakeholder management. For regulated utilities in developing economies, this framework must be augmented by regulatory compliance, tariff governance, and service obligation dimensions (Gupta et al., 2019).

Post-privatisation DisCo governance in Nigeria has attracted growing scholarly attention. Iwayemi and Adenikinju (2016) document that the transfer of ownership without adequate institutional capacity building reproduced the inefficiencies of

the pre-privatisation era in new corporate clothing. Abubakar and Mohammed (2020) argue that Nigeria's DisCos exhibit classic symptoms of weak corporate governance: board capture, inadequate disclosure, performance contract evasion, and excessive dependence on government regulatory forbearance. Udomboso and Okoro (2022) specifically examine AEDC's governance structure and conclude that while formal governance instruments (board charter, audit committee, annual reports) have been established, their functional effectiveness remains constrained by ownership disputes, investor-regulator tensions, and capacity gaps.

2. Performance Accountability in Distribution Companies

Performance accountability in electricity distribution encompasses technical, commercial, and financial dimensions. The ATC&C loss metric—adopted as the primary performance indicator by NERC—aggregates distribution technical losses, billing efficiency, and collection efficiency into a single composite measure (NERC, 2022). International experience with utility performance accountability suggests that ATC&C losses below 20% are achievable within a decade of privatisation when governance, metering, and customer engagement reforms are implemented systematically (Kessides, 2012).

Nigeria's DisCos have generally underperformed these benchmarks. Electricity Distribution sector data compiled by NERC (2024) indicates that the sector-wide weighted average ATC&C loss stood at 43.7% in 2024, compared to a target of 28% set under the Multi-Year Tariff Order (MYTO) 2022. Multiple studies attribute this gap to the estimated billing regime—under which customers without functional meters are billed based on assumed consumption averages—which incentivises non-payment and disputes (Nwosu et al., 2021; Lawal & Bello, 2023).

Okafor and Ugochukwu (2022) conducted a longitudinal analysis of collection efficiency across five DisCos between 2015 and 2020 and found that DisCos with higher smart meter penetration recorded measurably superior collection efficiency, confirming the technology–governance–performance nexus. AEDC's own data, as presented in this study, corroborates these findings.

3. Recapitalisation and Financial Sustainability

The question of whether recapitalisation of Nigeria's DisCos can produce sustainable financial performance absent tariff reform is extensively debated in the literature. Nnaji (2020) argues that DisCos are caught in a cost-recovery trap: tariffs set below cost-reflective levels ensure that even technically efficient utilities cannot generate returns sufficient to service recapitalisation investment or fund maintenance capex. The MYTO framework, while designed to progressively raise tariffs toward cost-reflectivity, has been suspended or moderated multiple times in response to political economy pressures, creating chronic revenue shortfalls (Ayoade, 2021).

Bankole et al. (2023) examine recapitalisation outcomes across four DisCos and conclude that capital injection without accompanying tariff adjustment and governance reform

produces marginal and unsustainable performance improvements. This finding has direct relevance to AEDC, which has received four distinct tranches of equity and debt capital since 2013 but continues to carry market obligation arrears exceeding ₦180 billion as of mid-2025.

4. Insecurity and Revenue Collection

The intersection of insecurity and utility revenue collection in sub-Saharan Africa remains an underdeveloped area of the literature. Adeyinka et al. (2022) present evidence from Northern Nigeria showing that security incidents in DisCo operational areas are significantly correlated with reduced field-agent effectiveness, infrastructure vandalism rates, and collection disruption days. Their panel data analysis of the 2015–2021 period attributes approximately 8–12% of DisCo collection shortfalls in conflict-affected zones to insecurity-related operational disruptions.

Specifically within AEDC's franchise area, the Nigerian Institute of Peace and Conflict Resolution (NIPCR, 2023) documents an escalation in farmer-herder conflicts in Niger and Nasarawa States during the 2016–2020 period, and periodic security incidents in the FCT's satellite towns. The Rural Electrification Agency (REA, 2022) notes that insecurity has delayed network expansion into parts of Kogi and Nasarawa States, constraining AEDC's customer base growth and revenue diversification potential.

Theoretical Framework

This study is principally anchored on two theorems—Agency Theory and Principal-Agent Dynamics and the Stakeholder Theory Complement. The agency theory as developed by Jensen and Meckling (1976) and subsequently applied to regulated industries by Laffont and Tirole (1993) is the primary framework. Agency theory posits that when one party (the principal) delegates decision-making authority to another (the agent), information asymmetry and divergent incentive structures create governance problems, including moral hazard and adverse selection, that generate efficiency losses and require governance mechanisms to mitigate.

In the AEDC context, multiple principal–agent relationships operate simultaneously. The core investor (KANN Consortium and subsequent investors) acts as agent to the FGN and NDPHC as co-principals. AEDC management acts as agent to the board. The board acts as agent to all shareholders. NERC acts as regulator–principal to AEDC as a licensed utility agent. Each dyad generates distinct agency costs—monitoring, bonding, and residual loss—that collectively define the governance efficiency of the enterprise.

Critically, the multi-principal problem in Nigerian DisCos—where the FGN's developmental objectives, NERC's regulatory mandate, the core investor's commercial return objectives, and consumers' affordability and reliability interests are frequently in conflict—creates a governance environment more complex than the classic bilateral agency model. This complexity is reflected in AEDC's performance data: governance reforms that serve the regulator's ATC&C targets may conflict with investors' return requirements, while

tariff increases that serve cost recovery may undermine the FGN's political economy goals.

Agency theory is complemented by Freeman's (1984) stakeholder theory, which extends the governance lens beyond shareholder-manager relationships to encompass all parties affected by the firm's conduct. For AEDC, relevant stakeholders include customers across four states, labour unions, the host communities whose security environment shapes collection performance, technology vendors, and international development finance institutions whose concessional facilities have co-funded recapitalisation. A stakeholder governance approach implies that AEDC's performance accountability cannot be evaluated solely through financial metrics but must incorporate service quality, consumer protection, and community impact dimensions.

Methodology

This study adopts a single-organisation longitudinal case study design, consistent with Yin's (2018) methodology for examining complex contemporary phenomena within their real-life context where the boundaries between phenomenon and context are not clearly distinct. The case study is the appropriate design given the need to trace causal mechanisms linking governance interventions, recapitalisation decisions, and performance outcomes across a twelve-year period.

Data sources for this study include: (a) AEDC operational performance reports submitted to NERC under the quarterly monitoring framework; (b) NERC Annual Electricity Market Reports (2014–2024); (c) BPE transaction documents and performance contract frameworks; (d) published and grey literature on Nigeria's electricity distribution sector; (e) security incident databases maintained by NIPCR and the Armed Conflict Location and Event Data (ACLED) project; and (f) Central Bank of Nigeria (CBN) and National Bureau

of Statistics (NBS) data on macroeconomic variables affecting sector performance, including foreign exchange rates and inflation indices.

Data analysis proceeds through triangulated qualitative and quantitative methods. Quantitative analysis involves descriptive statistics, compound annual growth rates (CAGR), trend analysis, and efficiency ratio calculations drawn from the transaction dataset presented in Table 1. Qualitative analysis involves thematic interpretation of governance documentation, regulatory correspondence, and comparative benchmarking against international DisCo performance standards. The study period spans Q1 2013 (post-privatisation) through Q3 2025, providing 50 quarterly data points for trend analysis.

Ethical considerations are addressed through reliance on publicly available data sources, anonymisation of personnel-level information, and acknowledgment of data limitations arising from inconsistencies in NERC regulatory filings, particularly for the 2013–2015 transition period.

Results and Discussion

1. Operational Performance Data: 2013–2025

Table 1 presents AEDC's consolidated operational performance across thirteen annual periods from 2013 to 2025. The data reveals a consistent upward trend in absolute revenue metrics (billing and collections) consistent with network expansion, customer growth, and tariff adjustments under successive MYTO orders. However, the collection-to-billing ratio—a direct measure of commercial efficiency—has improved only incrementally, from approximately 60.9% in 2013 to 71.0% by Q3 2025, highlighting the persistence of commercial loss even as technical loss reduction has been more pronounced.

Table 1: AEDC Operational Performance Summary, 2013–2025

Year	Billing (₦Bn)	Collection (₦Bn)	ATC&C Loss (%)	Customers (000)	Remittance (₦Bn)	Collection Eff. (%)
2013	18.4	11.2	63.2	498	7.8	60.9
2014	22.7	14.1	61.4	512	9.6	62.1
2015	27.3	17.9	58.9	531	12.3	65.6
2016	31.6	19.4	57.3	549	13.1	61.4
2017	38.2	24.7	55.1	568	16.8	64.7
2018	46.5	31.2	52.4	591	21.4	67.1
2019	54.8	37.6	49.7	618	25.3	68.6
2020	61.3	40.9	50.2	634	27.8	66.7
2021	74.6	51.2	47.8	658	34.9	68.6

2022	89.4	62.7	44.6	681	43.2	70.1
2023	108.2	74.9	41.3	712	51.6	69.2
2024	134.7	94.1	38.4	748	65.3	69.9
2025 (Q1–Q3)	112.4	79.8	36.1	763	55.9	71.0

Source: NERC Annual Electricity Market Reports (2014–2024); AEDC Quarterly Operational Reports; Author's Compilation

The ATC&C loss trajectory from 63.2% in 2013 to 36.1% in Q3 2025 represents a 27.1 percentage-point reduction over twelve years, equivalent to an average annual improvement of approximately 2.26 percentage points. While directionally positive, this pace falls short of the NERC Performance Improvement Plan (PIP) target of 3.0 percentage points per annum, and significantly below the recovery trajectory achieved by reformed utilities such as Kenya Power and Eneo Cameroon, which achieved comparable ATC&C reductions within six years of privatisation (World Bank, 2023).

Customer base growth from 498,000 registered customers in 2013 to 763,000 by Q3 2025 represents a 53% expansion,

though the metered proportion of this customer base remains below NERC's 80% target. The metering gap—estimated at 42% of registered customers still on estimated billing as of 2024 (NERC, 2024)—is a primary driver of collection efficiency shortfalls, as unmetered customers systematically under-remit and generate billing disputes that delay revenue realisation.

2. Corporate Governance Framework: Evolution and Assessment

Table 2 maps AEDC's corporate governance evolution across key dimensions from the pre-privatisation baseline through successive reform phases.

Table 2: AEDC Corporate Governance Evolution, 2013–2025

Governance Dimension	Pre-2013 Status	2013–2019 Progress	2020–2025 Status
Board Independence	Non-existent	Partial – 40% independent directors	Improved – 55% independent
Audit Committee	Government-controlled	Established per NERC guidelines	Functional with external auditors
Performance Contracts	Absent	Introduced 2014	Embedded in MYTO framework
Regulatory Reporting	Ad hoc	Quarterly NERC submission	Monthly data reporting
Shareholder Transparency	Opaque	Annual general meetings begun	Published annual reports
CEO Accountability	Political appointment	Performance-linked tenure	KPI-based contract renewal

Source: BPE Transaction Documents; NERC Regulatory Filings; Udomboso and Okoro (2022); Author's Assessment

The governance trajectory documented in Table 2 reflects meaningful structural improvement since 2013. Board independence has progressed, an audit committee consistent with NERC's corporate governance guidelines has been established, and performance contracts—initially absent—are now embedded within the MYTO framework binding management KPIs to tariff adjustment entitlements. These developments align with the prescriptions of Tricker (2019) for utility governance reform and represent substantive progress from the opacity of PHCN-era management.

However, two governance dimensions remain critically underdeveloped. First, shareholder transparency, while improved through the introduction of annual general meetings

and published annual reports, continues to be compromised by disputes between the core investor consortium and minority shareholders, as well as regulatory proceedings regarding performance contract compliance. Second, CEO accountability, while structurally linked to KPI-based contract renewal, has been inconsistently applied: between 2013 and 2025, AEDC experienced four CEO transitions, two of which were associated with governance disputes rather than planned succession, suggesting residual instability in the principal–agent accountability chain at the apex leadership level.

3. Recapitalisation Trajectory and Technology Investment

Four distinct recapitalisation tranches have been identified across the study period, as documented in Table 3. Cumulatively, approximately ₦107 billion in capital has been

deployed, spanning infrastructure investment, technology procurement, and working capital support.

Table 3: AEDC Recapitalisation and Technology Investment, 2013–2025

Period	Capital Injection (₦Bn)	Primary Focus	Technology Deployed	Outcome / KPI Impact
2013–2015	12.6	Metering & network stabilisation	Prepaid meters, GIS mapping	ATC&C fell from 63% to 59%; customer base grew 6%
2016–2018	19.4	Revenue assurance & IT backbone	CRM, ERP, smart meters Phase 1	Collection efficiency up 6.2 ppts; e-payment share 31%
2019–2021	28.7	Digital transformation	SCADA, mobile apps, payment APIs	Collections up ₦13.6Bn; digital payments 58%
2022–2025	46.3	Network modernisation & AMI	AMI, IoT sensors, AI billing analytics	ATC&C to 36.1%; revenue CAGR 22%; 763,000 customers

Source: AEDC Investment Reports; BPE Documentation; Author's Compilation from Public Records

The 2013–2015 tranche prioritised prepaid metering and geographic information system (GIS) mapping—foundational investments that established the data infrastructure for subsequent commercial reforms. The 2016–2018 tranche introduced a customer relationship management (CRM) platform and enterprise resource planning (ERP) system, enabling the disaggregation of billing disputes by customer category and feeder location, a capability that proved critical in targeting the highest-loss feeders in Kogi and Nasarawa States.

The 2019–2021 tranche, the largest to that point, funded a SCADA deployment that provided real-time feeder monitoring, alongside a mobile customer service application and integration with major payment processors including Remita, Interswitch, and emerging fintech platforms such as Flutterwave and Paystack. This digitalisation of the payments ecosystem produced the most measurable commercial outcome of any single investment phase: the share of collections received via digital channels rose from approximately 12% in 2018 to 58% by 2021, with digital payment customers recording materially superior average payment compliance rates compared to cash-paying customers.

The 2022–2025 tranche represents the most ambitious technology commitment, deploying advanced metering infrastructure (AMI) across selected high-density residential and commercial zones in the FCT, integrating IoT-enabled distribution transformers, and applying AI-driven billing anomaly detection. Early results from these deployments are reflected in the accelerated ATC&C improvement observed between 2022 and 2025.

4. Market Obligation Servicing and Liquidity Crisis

Notwithstanding capital injection and performance improvements, AEDC's liquidity profile remains structurally stressed. The market obligation framework established under the Nigerian Electricity Supply Industry (NESI) requires DisCos to remit payments to NBET based on contracted volumes, irrespective of actual collections. This 'take-or-pay' dynamic creates a persistent funding gap when collection efficiency falls below the 80–85% threshold required to meet bulk purchase obligations from collection revenue alone.

AEDC's remittance-to-collection ratio (remittance as a percentage of total collections) averaged approximately 65% across the study period, implying that the balance of collections was consumed by operational expenditure, debt service, and capital investment—leaving insufficient surplus to meet full NBET obligations. The resulting arrears, estimated at ₦180 billion cumulatively by mid-2025, are partly offset by government-administered payment assurance mechanisms (Payment Assurance Guarantee, PAG) under the Nigerian Electricity Liability Management Company (NELMCO), but these mechanisms have provided only partial and intermittent relief (Ayoade, 2021; NERC, 2024).

The liquidity crisis has feedback effects on governance and performance: cash-constrained DisCos defer maintenance capex, reduce collection field force staffing, and deprioritise network rehabilitation, each of which worsens the technical and commercial loss profile, creating a self-reinforcing deterioration dynamic. Breaking this cycle requires simultaneous tariff reform, improved collection efficiency, government-arrears clearance, and strategic capital injection—a policy coordination challenge that remains unresolved at the sector level.

5. Impact of Insecurity on Collection Performance

Table 4 presents a subset analysis of the security–revenue nexus across selected high-incident years within the study period.

Table 4: Security Incidents and Revenue Impact in AEDC Franchise Area, Selected Years

Year	Security Incidents (DisCo Area)	Revenue at Risk (₦Bn)	Collections Disruption Days	Estimated Loss (₦Bn)	Recovery Rate (%)
2014	47	2.1	18	1.4	33.3
2016	83	4.6	31	3.1	32.6
2018	124	7.8	44	5.2	33.3
2020	109	8.3	52	5.8	30.1
2022	97	9.4	38	5.1	45.7
2024	71	8.1	27	3.9	51.9

Source: NIPCR Security Incident Database; ACLED (2024); AEDC Operational Reports; Author's Compilation

The data in Table 4 reveal three significant patterns. First, security incidents across the DisCo coverage area—spanning both direct physical attacks on infrastructure and operational disruptions caused by communal conflicts—have generated measurable revenue losses ranging from ₦1.4 billion in 2014 to a peak of ₦5.8 billion in 2020. The 2020 peak reflects the compounding effect of COVID-19 movement restrictions on AEDC's already insecurity-constrained field operations, as collection agents in Kogi and Nasarawa States faced simultaneous pandemic-related and security-related operational constraints.

Second, a progressive improvement in the recovery rate—from 33.3% in 2014 to 51.9% in 2024—reflects the positive impact of digital payment adoption on revenue resilience. As an increasing proportion of collections migrate to mobile and online channels, the dependence on field-agent cash collection in security-compromised areas diminishes, partially decoupling revenue performance from the physical security environment. This finding aligns with the broader literature on mobile money and utility revenue collection resilience in sub-Saharan Africa (Aker & Mbiti, 2010; GSMA, 2022).

Third, the declining absolute number of security incidents between 2020 and 2024 reflects partially improved security conditions in parts of the franchise area, particularly the FCT, even as incidents in Niger and Kogi States remain a persistent operational constraint. AEDC's response has included deployment of mobile collection teams with security escorts in high-risk areas, installation of anti-vandal concrete-encased distribution equipment, and community liaison programmes designed to reduce infrastructure sabotage motivated by payment disputes.

6. Marketing Strategy, Technology Leadership and Market Positioning

AEDC's commercial strategy over the study period has evolved from a passive billing-and-dispatch model to a more

proactive customer engagement and market segmentation approach. Key marketing strategy elements include:

- **Segmented Tariff Marketing:** Following the introduction of the Incremental Electricity Supply (IES) model and the Eligible Customer regime, AEDC has developed targeted marketing propositions for industrial and commercial customers willing to subscribe to higher-reliability supply tiers at cost-reflective tariffs, decoupling premium revenue from the residential cross-subsidy burden.
- **Digital Onboarding and Self-Service Platforms:** The AEDC mobile application, launched in 2019 and significantly enhanced in 2022, provides customers with real-time account management, token vending, fault reporting, and payment history—reducing the transaction cost of compliance and improving customer satisfaction scores from a net promoter score (NPS) of -12 in 2018 to +24 in 2024.
- **Community Electricity Management Committees (CEMCs):** A model adapted from international practice and operationalised across rural communities in Kogi and Nasarawa States, CEMCs embed local governance into electricity revenue collection, aligning community leadership incentives with supply reliability. Communities with functional CEMCs recorded collection efficiency 14 percentage points above the DisCo average in participating areas.
- **Revenue Assurance Audits:** Annual third-party revenue assurance audits, introduced in 2021, identify billing system leakages, meter tampering patterns, and illegal connection clusters, enabling targeted enforcement that has cumulatively

recovered an estimated ₦18 billion in previously uncollected revenue across 2021–2024.

These marketing innovations position AEDC among the more commercially progressive DisCos in the Nigerian sector, though the full monetisation of this positioning remains contingent on resolution of the macro-level tariff and metering constraints documented above.

Conclusion

This longitudinal case study of AEDC's corporate governance, performance accountability, and recapitalisation from 2013 to 2025 yields four principal conclusions.

First, governance reform is necessary but insufficient. AEDC has made demonstrable progress in establishing formal governance structures—board independence, audit functions, performance contracting, and regulatory reporting—consistent with international standards for regulated utilities. However, these structural improvements have not resolved fundamental principal–agent tensions between investors, the state, the regulator, and consumers, and governance quality remains variable at the operational level.

Second, recapitalisation produces returns commensurate with governance and tariff alignment. The four tranches of capital injection totalling approximately ₦107 billion have generated measurable ATC&C loss reductions and customer base growth. The most productive investments—digitalisation of payment systems and deployment of advanced metering infrastructure—demonstrate that technology-led recapitalisation yields performance returns that exceed equivalent expenditures on physical network assets alone. The critical moderating variable, however, is tariff cost-reflectivity: without tariffs that recover the full economic cost of supply, no level of capital investment can produce a self-sustaining DisCo.

Third, insecurity is a quantifiable governance externality. The documentation of security-related revenue losses totalling an estimated ₦24.5 billion across selected sample years, with recovery rates averaging below 40% in the first half of the study period, establishes insecurity as a material performance variable that must be explicitly incorporated into AEDC's corporate governance risk framework, NERC's regulatory performance benchmarks, and the sector's market obligation settlement calculations.

Fourth, the path to financial sustainability requires systemic policy co-ordination. AEDC's persistent liquidity crisis—reflected in ₦180 billion in accumulated market obligation arrears—cannot be resolved by governance reform or capital injection alone. It requires simultaneous action on cost-reflective tariff implementation, accelerated metering to end estimated billing, clearance of legacy government consumption arrears (estimated at ₦85 billion owed by MDAs within the franchise area), and establishment of an effective payment assurance framework that insulates the sector's financial architecture from political economy disruptions.

Recommendations

1. For NERC and the Federal Government

- a. Implement a fully cost-reflective tariff framework under MYTO 2025–2030, with automatic quarterly adjustments linked to verified cost indices, eliminating the political cycle-driven tariff suspensions that have chronically undermined DisCo revenue certainty.
- b. Mandate completion of the National Mass Metering Programme (NMMP) within thirty-six months, with DisCo-specific metering targets embedded in performance contracts, and establish an independent metering audit function under NERC.
- c. Establish a dedicated Security Impact Allowance (SIA) mechanism within the MYTO framework, recognising quantified collection losses attributable to insecurity as a regulatory cost-pass-through, incentivising DisCos to invest in digital collection systems as security resilience tools.
- d. Clear all verified MDA electricity consumption arrears within the AEDC franchise area within twelve months, using an agreed offset or direct payment mechanism, to restore the receivables integrity of AEDC's billing ledger.

2. For AEDC Board and Management

- I. Strengthen board independence by targeting a minimum 60% independent director composition, recruiting directors with demonstrated expertise in infrastructure finance, technology governance, and consumer protection regulation.
- II. Accelerate AMI deployment to cover not less than 80% of metered customers by 2027, prioritising commercial and industrial feeders with the highest billing volumes and loss concentrations.
- III. Formalise the Community Electricity Management Committee (CEMC) model through a legal framework and performance-linked supply agreement, scaling the model from pilot areas to all rural and peri-urban communities in Kogi, Nasarawa, and Niger States.
- IV. Institute a quarterly integrated risk report to the board that explicitly quantifies security-related operational losses, alongside conventional financial and technical risk metrics, embedding security risk within the enterprise governance framework.

3. For Investors and Development Finance Institutions

- a. Structure future recapitalisation tranches to condition disbursement on verified governance milestones—board independence ratios, audit committee functionality, and regulatory reporting compliance—rather than purely on capital expenditure deployment.
- b. Explore blended finance structures (combining commercial equity, development finance institution debt, and partial risk guarantees) to lower the effective cost of recapitalisation capital and extend

investment horizons to fifteen-year maturities aligned with infrastructure asset life cycles.

References

1. Abdulkarim, M., & Oke, T. O. (2021). Corporate governance deficits in Nigerian electricity distribution companies: Evidence from post-privatisation performance. *Journal of African Business*, 22(3), 412–431. <https://doi.org/10.1080/15228916.2020.1825214>
2. Adenikinju, A. (2018). Energy poverty, access and affordability in Nigeria: Issues and policy options. AERC Research Paper No. 349. African Economic Research Consortium.
3. Adeyinka, A. J., Bello, K. M., & Olatunji, F. R. (2022). Insecurity and electricity revenue collection in northern Nigeria: A panel data analysis. *Energy Policy*, 165, 112984. <https://doi.org/10.1016/j.enpol.2022.112984>
4. AEDC. (2024). Abuja Electricity Distribution Company annual report 2023. Abuja Electricity Distribution Company.
5. Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232. <https://doi.org/10.1257/jep.24.3.207>
6. Armed Conflict Location and Event Data Project (ACLED). (2024). Nigeria conflict event database 2013–2024. ACLED. <https://acleddata.com>
7. Ayoade, M. A. (2021). Tariff reform and financial sustainability in Nigeria's electricity sector: The MYTO dilemma. *Nigerian Journal of Energy and Environment Management*, 7(1), 44–62.
8. Abubakar, S. I., & Mohammed, D. (2020). Corporate governance and operational performance of electricity distribution companies in Nigeria. *African Journal of Economic and Management Studies*, 11(2), 229–246. <https://doi.org/10.1108/AJEMS-06-2019-0238>
9. Babatunde, M. A., Adenikinju, O., & Adenikinju, A. F. (2022). Estimating the circular debt crisis in Nigeria's electricity supply industry. *Energy for Sustainable Development*, 66, 1–14. <https://doi.org/10.1016/j.esd.2021.11.009>
10. Bankole, F. E., Ibrahim, T., & Afolabi, L. (2023). Recapitalisation without reform: Evaluating capital injection outcomes across Nigerian DisCos 2014–2022. *Journal of Infrastructure Development*, 15(1), 23–48. <https://doi.org/10.1177/09749012231145562>
11. Bureau of Public Enterprises (BPE). (2013). PHCN successor companies transaction completion report. Federal Government of Nigeria.
12. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
13. GSMA. (2022). Mobile money and utility payments in sub-Saharan Africa: Evidence and implications. GSMA Intelligence.
14. Gupta, R., Bajaj, M., & Mehta, S. (2019). Regulatory governance and utility performance in developing economies. *Energy Economics*, 84, 104479. <https://doi.org/10.1016/j.eneco.2019.104479>
15. Iwayemi, A. (2016). Nigeria's dual energy problems: Policy issues and challenges. *International Association for Energy Economics*, 2016(4), 17–21.
16. Iwayemi, A., & Adenikinju, A. (2016). Nigeria's electricity supply industry: Issues in transition, regulation, and investment. OIES Paper: EL 18. Oxford Institute for Energy Studies.
17. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
18. Kessides, I. N. (2012). The impacts of electricity sector reforms on the poor. *The Electricity Journal*, 25(6), 81–97. <https://doi.org/10.1016/j.tej.2012.06.003>
19. Laffont, J. J., & Tirole, J. (1993). *A theory of incentives in procurement and regulation*. MIT Press.
20. Lawal, B. A., & Bello, I. (2023). Estimated billing and revenue collection disputes in Nigerian distribution companies: Implications for governance. *Electricity Journal*, 36(4), 107127. <https://doi.org/10.1016/j.tej.2023.107127>
21. Monks, R. A. G., & Minow, N. (2011). *Corporate governance* (5th ed.). John Wiley & Sons.
22. National Bureau of Statistics (NBS). (2024). Nigeria economic report 2024. Federal Government of Nigeria.
23. National Population Commission (NPC). (2023). Nigeria population projection report. Federal Government of Nigeria.
24. NERC. (2022). Multi-year tariff order 2022–2026: Technical methodology and assumptions. Nigerian Electricity Regulatory Commission.
25. NERC. (2024). Annual electricity market report 2023. Nigerian Electricity Regulatory Commission.
26. Nigerian Institute of Peace and Conflict Resolution (NIPCR). (2023). North-Central security assessment report 2022–2023. Ministry of Justice, Federal Government of Nigeria.
27. Nnaji, B. O. (2020). Power sector reform in Nigeria: Path to success? Opportunity and challenge. *Nigerian Academy of Engineering*.
28. Nwosu, C., Okeke, R., & Eze, F. (2021). Estimated billing, consumer trust, and payment compliance in Nigerian electricity distribution: Survey evidence from Abuja. *Energy Research & Social Science*, 74, 101980. <https://doi.org/10.1016/j.erss.2021.101980>
29. Okafor, H. C., & Ugochukwu, J. A. (2022). Smart metering, collection efficiency, and financial

- performance of Nigerian DisCos: Evidence from 2015–2020. *Journal of Energy in Southern Africa*, 33(1), 45–61. <https://doi.org/10.17159/2413-3051/2022/v33i1a12109>
30. Rural Electrification Agency (REA). (2022). Annual report on rural electricity access expansion in Nigeria. Federal Government of Nigeria.
31. Tricker, R. I. (2019). *Corporate governance: Principles, policies, and practices* (4th ed.). Oxford University Press.
32. Udomboso, C., & Okoro, M. (2022). Post-privatisation corporate governance assessment of Abuja Electricity Distribution Company 2013–2021. *Journal of Public Administration and Governance*, 12(1), 88–112. <https://doi.org/10.5296/jpag.v12i1.19547>
33. World Bank. (2020). *Utility of the future: A governance framework for the electricity sector*. World Bank Group.
34. World Bank. (2023). *Tracking SDG7: The energy progress report 2023*. World Bank Group. <https://doi.org/10.1596/978-1-4648-2001-8>
35. Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.