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ELECTRICITY SECTOR REFORMS AND POWER SUPPLY RELIABILITY IN NIGERIA: POST-PRIVATIZATION REALITIES AND PROSPECTS

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Abstract

Nigeria's electricity sector underwent major restructuring following the Electric Power Sector Reform Act and the 2013 privatisation of generation and distribution companies, which unbundled the former National Electric Power Authority under the Power Holding Company of Nigeria and established the Nigerian Electricity Regulatory Commission to oversee the market. Despite these reforms, electricity supply remained unreliable, characterised by frequent outages, grid instability, low-capacity utilisation and persistent ATC&C losses, raising concerns about whether reform objectives had been achieved. This study examined the extent to which post-2013 reforms improved reliability, identified structural and regulatory constraints, evaluated regulatory oversight, and proposed measures to align outcomes with long-term energy transition goals. The study adopted a qualitative design. Findings showed that although installed capacity was about 13,000 MW, available generation rarely exceeded 5,000 MW, reflecting significant utilisation gaps driven by gas constraints, weak maintenance and hydrological variability. Transmission bottlenecks, distribution losses exceeding 40%, tariff–service mismatches and limited regulatory enforcement further undermined reliability. While privatisation increased nominal investment and revenue, governance weaknesses, political interference and institutional capacity deficits constrained performance. The study recommended that ownership reform alone was insufficient; reliability depended

on integrated sector planning, stronger regulatory independence, reduced ATC&C losses, cost-reflective yet socially sensitive tariffs, renewable energy expansion, and enhanced public–private collaboration to achieve sustainable and equitable electricity supply improvements.
Keywords: Electricity sector reforms, privatization, electricity market regulation, electricity access

Introduction

Socioeconomic development depends on a steady supply of electricity, but Nigeria's power industry has long had trouble supplying homes, companies, and industries with regular, sufficient electricity. The industry was dominated by a state-run monopoly prior to reform, which was marked by persistent underinvestment, ineffective operations, and subpar service delivery. This led to one of the lowest rates of electricity access worldwide and had a major detrimental impact on economic productivity (Momoh et al., 2018; Ebube, 2025). These difficulties led decision-makers to undertake all-encompassing reform plans meant to improve efficiency, draw in private investment, and liberalise the industry.

By separating the former National Electric Power Authority (NEPA) into successor organisations under the transitional Power Holding Company of Nigeria (PHCN) and creating the Nigerian Electricity Regulatory Commission (NERC) to offer independent oversight, the Electric Power Sector Reform (EPSR) Act of 2005, succeeded by the Electricity Act of 2023, signalled the start of structural change (Okoroigwe, 2014). The 2013 privatisation program, which gave private investors ownership of the generation and distribution businesses (GenCos and DisCos) while keeping the Transmission Company of Nigeria (TCN) a state-owned organization in charge of grid operations, was a significant turning point (Esan et al., 2025). Privatisation was intended to draw in investment, boost operational efficiency, and eventually increase the dependability of the electrical supply—a recurring policy goal for succeeding administrations.

Nigeria's power industry still faces serious dependability issues in spite of these measures. With regular outages, system collapses, and significant regional access inequities, real available capacity and delivery to end users remain well below national demand, despite an increase in installed generation capacity (Adeniji et al., 2025; Egbuchua & Okoroafor, 2020). Numerous factors, such as poor transmission infrastructure, high aggregate technical, commercial, and collection (ATC&C) losses, insufficient metering, distribution company liquidity issues, and regulatory and governance deficiencies, are blamed for these performance disparities (Onwuka, 2021; Adeoye & Oseni, 2022). As a result, there is a contradiction whereby structural reform has raised private sector involvement without

producing corresponding increases in dependability.

According to Nnaji & Ojiako (2022), privatization is premised on the need to handover business to those who are better qualified to handle them, which is the private sector, while the government concentrates on its core duty of governance. A critical evaluation of post-reform realities is necessary given the continued existence of these issues over ten years after the first wave of privatisation. Through an analysis of production, transmission, distribution, and regulatory performance trends from before and after privatisation, this study investigates the effects of electricity sector reforms on Nigeria's power supply reliability. It examines whether the goals of the reform have been met, points out structural barriers to dependability, and describes potential policy options that might match sector performance with more general energy transition objectives. The study adds to the body of knowledge on electrical restructuring in emerging economies and provides insights into how reform design and implementation impact service results by utilising both empirical sector performance data and policy discourse.

Statement of the Problem

Since the Electricity Act of 2023, Nigeria's power sector has experienced substantial structural change, including but not limited to external modernisations and sectoral governance. In order to increase efficiency, draw in private investment, and strengthen the dependability of the power supply, the former National Electric Power Authority was unbundled into successor organisations under the Power Holding Company of Nigeria and the Nigerian Electricity Regulatory Commission was established.

Nigeria's electricity supply is still extremely unreliable despite these reforms; it is marked by frequent outages, grid collapses, low generation compared to installed capacity, high Aggregate Technical, Commercial, and Collection (ATC&C) losses, and ongoing liquidity crises within the Nigerian Electricity Supply Industry (NESI). According to Nnaji, Ojiako, Ukeje, & Nwangbo (2022), the inability of public enterprises to deliver in the areas of their core mandate has therefore led to the clamour by the public for the transfer of these enterprises to the private sector for proper management. More so, research indicates that when institutional governance, infrastructural investment, and regulatory competence are still lacking, privatisation by itself does not always result in better service delivery (Abiodun, 2021; Casady & Peci, 2020).

Nnaji, Ojiako, Ukeje, & Nwangbo (2022) argued that the implication here is that public enterprises are not suitable to effectively play the role for which they were established in most countries of the world. Over ten years after

privatisation and successive modernisation of electrical supply, there is still discussion among the general public and academic community over whether the goals of the reform have been met or if institutional and structural barriers still compromise reliability results. The continued unreliability of the power supply raises serious questions regarding the efficacy of market-based reforms in developing nations with inadequate institutional frameworks. The apparent discrepancy between the goals of the electricity sector reform and the actual results of power supply dependability in Nigeria following privatisation is thus the main issue this study attempts to address.

Objectives of the Study

1. To examine the extent to which energy sector reforms since 2013 have improved the reliability of electricity supply in Nigeria.
2. To identify the structural, institutional and regulatory challenges that continue to hinder reliable electricity supply in the post-privatisation period.
3. To assess the effectiveness of regulatory oversight in ensuring performance compliance among market operators.
4. To propose policy measures necessary to enhance electricity supply reliability and align reform outcomes with long-term energy transition objectives.

Literature Review

Conceptual Review

Electricity Sector Reforms

Comprehensive institutional, structural, regulatory, and market-oriented changes implemented to enhance the power industry's efficiency, accountability, investment flows, and service delivery are referred to as electricity sector reforms. In many developing nations, the electrical sector has historically functioned as vertically integrated state monopolies in charge of distribution, transmission, and generating. However, starting in the 1980s and 1990s, extensive reform initiatives were spurred by public monopoly inefficiencies, including political meddling, underinvestment, a bad maintenance culture, and financial obligations (Jamasb, Newbery, & Pollitt, 2005). Usually, reforms include unbundling (distinguishing production, transmission, and distribution), commercialisation and corporatisation, asset concessioning or privatisation, and the establishment of autonomous regulatory organisations.

The Electricity Act of 2023, which repealed the Electric Power Sector Reform (EPSR) Act of 2005, continued where its predecessor stopped by modernising electrical supply, following the

previous Acts actions of breaking the state monopoly and divided the previous National Electric Power Authority into successor firms under the Power Holding Company of Nigeria, marked the official start of energy reform in Nigeria. The Nigerian Electricity Regulatory Commission (NERC), an independent regulator, was also created by the reform. Therefore, in this sense, reforming the electricity sector means moving away from a monopoly under state control and toward a multi-actor, market-driven system that is regulated and aims to increase access and dependability.

Privatization

Transferring ownership, management, or control of public businesses to private organisations is known as privatisation. The theory behind privatisation of electricity markets is that private operators are more efficient because they have access to financial markets, profit incentives, and management autonomy (Megginson & Netter, 2001). It is anticipated that: Boost the effectiveness of operations, draw in fresh funding, lessen the financial strain on the government and improve the dependability and quality of services.

Eleven distribution firms (DisCos) and a number of generation businesses (GenCos) were given to private investors as part of Nigeria's 2013 privatisation effort, although transmission was still owned by the government. Privatisation does not, however, always result in better performance; regulatory vigilance, contract enforcement, cost-reflective rates, and adequate infrastructure are all necessary for its success (Newbery, 2002). Therefore, privatisation is viewed in this study as a governance change whose results must be assessed in light of performance metrics like supply reliability, rather than just as the transfer of assets.

Power Supply Reliability

The ability of an electrical system to provide customers with steady, continuous power throughout time is known as power supply reliability. Reliability is multifaceted and commonly assessed using technical criteria like grid stability indicators include frequency and system collapse rates, while SAIDI (System Average Interruption Duration Index) measures the average outage duration per customer and SAIFI (System Average Interruption Frequency Index) measures the average outage frequency per customer (Billinton & Allan, 1996).

Reliability and availability are two different things. Reliability is the consistency and quality of the supply, whereas availability is the existence of electricity in the system. Frequent blackouts, voltage swings, and national grid breakdowns are signs of Nigeria's reliability issues. High economic costs result from persistent reliability deficiencies, which compel businesses and households to use diesel and

petrol generators for self-generation. This raises production costs and creates environmental externalities (Iwayemi & Fowowe, 2017). Reliability in this study is defined as the post-privatization electrical system's ongoing capacity to provide end users with steady and predictable electricity.

Post-Privatization Realities

The actual operational, financial, and institutional circumstances that are seen following the transfer of power assets to private hands are referred to as post-privatization realities. Nnaji, Ojiako, Ukeje, & Nwangbo (2022) noted that the non-performance of the public enterprise has prompted series of discussions and policy recommendations on how best to move them out of their present quagmire. Although efficiency and better service are usually emphasised in reform objectives, empirical results often highlight structural limitations like: inadequate financial investment, inadequate enforcement of regulations, crisis in liquidity, political meddling, deficiencies in infrastructure (Newbery, 2002). Persistent Aggregate Technical, Commercial, and Collection (ATC&C) losses, metering gaps, revenue deficits, and government intervention funding to stabilise the sector are among Nigeria's post-privatization realities (NERC, 2020). These realities, which serve as the study's analytical foundation, draw attention to the discrepancy between reform expectations and actual sector performance.

Electricity Market Regulation

The laws, rules, and oversight procedures that control how market participants engage in liberalised energy systems are together referred to as electrical market regulation. Efficient regulation guarantees: fair rivalry, cost-reflective tariff calculation, Investment incentives, service quality monitoring, and consumer protection. In order to stop market abuse and balance the interests of investors and consumers, independent regulatory bodies are essential (Joskow, 2008). NERC licenses operators, sets tariffs under the Multi-Year Tariff Order (MYTO) system, and keeps an eye on service quality in Nigeria. Therefore, a key factor in deciding whether privatisation results in increased reliability is regulatory effectiveness.

Electricity Access and Energy Poverty

The provision of dependable and reasonably priced electrical services to homes and productive sectors is referred to as "electricity access." The inability to obtain sufficient contemporary energy services for fundamental socioeconomic activity is referred to as energy poverty (IEA, 2022). Nigeria has made strides toward increasing grid coverage, but access is still inconsistent and inconsistent, especially in rural areas. As a result, energy poverty endures due to low price and dependability as well as a lack of connection. This study acknowledges

that a nominal grid connection without a steady supply does not reduce energy poverty by linking electricity access to reliability outcomes.

Empirical Review

Global Evidence on Electricity Sector Reform

The results of empirical research on improvements to the energy industry in developing nations are not entirely consistent. In an examination of reform experiences, Jamasb, Newbery, and Pollitt (2005) discovered that although privatisation and unbundling can increase investment and efficiency, institutional strength and regulatory quality are crucial for success. While weak institutional systems frequently saw limited advances, countries with robust regulatory frameworks observed improvements in service delivery and reliability. According to Newbery (2002), financial instability, market power concentration, and underinvestment might arise from liberalisation without sufficient regulatory protections. Similarly, Joskow (2008) highlighted that because power networks are monopolistic, incentive-based regulation is crucial. These worldwide results imply that governance frameworks, not just privatisation, are necessary for reform success.

Sub-Saharan African Empirical Data

Reforms in the power sector have yielded inconsistent outcomes in Sub-Saharan Africa. Research shows that even though privatisation has drawn some investment, dependability gains have been modest because of inadequate enforcement and infrastructure (Eberhard et al., 2016). Tariff shortages, political opposition to cost-reflective pricing, and liquidity issues still plague many African electricity markets. Research shows that nations with credible tariff systems and independent regulators have better service outcomes than those with less autonomous regulation.

Nigerian Empirical Evidence

A complicated picture is presented by empirical research on Nigeria's electrical reforms. Nigeria's economic growth and energy supply are strongly correlated, according to Iwayemi and Fowowe (2017), who also highlight how productivity is hampered by ongoing electrical unreliability. Their results highlight how crucial dependable electricity is as a catalyst for development.

Okoroigwe (2014) looked at the structural difficulties of reforming Nigeria's power system and found that insufficient funding for infrastructure, inconsistent policies, and regulatory flaws were the main obstacles to reform success. In his evaluation of the financial sustainability of distribution firms (DisCos), Onwuka (2021) found that revenue deficits, inadequate metering coverage, and significant aggregate technical, commercial, and collection (ATC&C) losses all continue to impede service improvement. According to the study's findings,

reliability outcomes are greatly impacted by liquidity issues.

Despite the involvement of the private sector, the Nigerian Electricity Regulatory Commission's performance reports show ongoing grid breakdowns, generation shortages compared to installed capacity, and distribution inefficiencies (NERC, 2020).

All things considered, empirical data from Nigeria indicates that although privatisation has changed the ownership structure, issues with systemic reliability still exist. This bolsters the regulatory governance viewpoint that successful institutional enforcement, financial sustainability mechanisms, and investment incentives are necessary for reform to be successful.

Empirical Gaps Found

The majority of current empirical research focuses on: Trends in generation capacity, effects of economic expansion. According to the Nigerian Electricity Regulatory Commission's performance reports, distribution inefficiencies, generation shortages relative to installed capacity, and continuous system failures persist despite the private sector's involvement (NERC, 2020). All things considered, actual data from Nigeria shows that systemic dependability problems persist even if privatisation has altered the ownership structure. This supports the regulatory governance perspective that effective institutional enforcement, financial sustainability mechanisms, and investment incentives are essential to the success of reform.

Theoretical Framework

Regulatory Governance Theory emerged prominently in the 1990s through the work of Majone (1994), who conceptualised the rise of the regulatory state, and was further developed by Baldwin, Cave and Lodge (1998) and Joskow (2008). The theory emphasises the role of independent regulatory institutions in ensuring that market liberalisation and privatisation deliver efficient, equitable and reliable service outcomes. It argues that privatisation alone does not guarantee improved performance; rather, outcomes depend significantly on the structure, autonomy, capacity and enforcement strength of regulatory bodies (Joskow, 2008). In network industries such as electricity—characterised by natural monopolies in transmission and distribution—effective regulation is essential to prevent market abuse, ensure cost recovery, protect consumers and stimulate infrastructure investment (Newbery, 2002). Regulatory governance encompasses tariff-setting mechanisms, performance monitoring, compliance enforcement and transparency frameworks. In Nigeria, following the unbundling of the former National Electric Power Authority into successor companies under the Power Holding Company of Nigeria, the Electric Power Sector Reform Act

established the Nigerian Electricity Regulatory Commission as an independent regulator overseeing generation, transmission and distribution entities. Regulatory Governance Theory is particularly suitable for this study because it explains cross-national variations in privatisation outcomes, underscores the importance of regulatory independence in balancing investor returns with consumer protection, provides a framework for assessing tariff regulation (including cost-reflective pricing), enforcement strategies and service-based performance monitoring, and links governance quality directly to service reliability outcomes.

Complementing this perspective, the Policy Evaluation Framework—rooted in public policy analysis and governance theory and advanced by Suchman (1967), Weiss (1972) and Dunn (2018)—provides a systematic approach for determining whether reforms achieve their stated objectives. Unlike purely economic or ownership-based theories, policy evaluation theory assesses public interventions against criteria such as effectiveness, efficiency, equity, sustainability and institutional performance. This approach is especially relevant in infrastructure sectors like electricity, where regulatory authority remains with government even after privatisation and reforms have measurable socio-economic consequences (OECD, 2019). Drawing primarily on Dunn (2018) and OECD (2019), the framework evaluates Nigeria's electricity reforms across five interrelated dimensions: effectiveness, measured by improvements in power supply reliability, reduced outage frequency, increased available generation capacity, enhanced transmission stability and reduced ATC and C losses following the Electricity Act (2023); efficiency, assessed in terms of reduced fiscal burden, improved operational performance relative to investment and the establishment of cost-reflective tariffs (Newbery, 2002); equity, examining fair distribution of access and tariff impacts across socio-economic groups and regions (IEA, 2022); sustainability, focusing on financial, institutional and environmental viability without persistent government intervention; and institutional and regulatory capacity, recognising that implementation quality determines outcomes (Weiss, 1972), including regulatory independence, enforcement capability, transparency in tariff-setting and compliance monitoring. Together, these frameworks enable a comprehensive institutional assessment of Nigeria's electricity sector reforms.

Application of the Theories to this Study

The Policy Evaluation Framework is adopted in this study because electricity sector reform is fundamentally a public policy intervention rather than merely a market reorganisation exercise. Privatisation, tariff restructuring, institutional unbundling and regulatory

development are policy instruments designed to achieve specific objectives—improved reliability, expanded access, operational efficiency and financial sustainability—rather than ends in themselves. The central issue, therefore, is not simply whether ownership changed, but whether such reforms delivered measurable improvements in power supply reliability and overall sector performance. Nigeria's electricity challenges are multifaceted and cannot be adequately understood through ownership transformation alone; they require systematic assessment of governance quality alongside performance outcomes. Rooted in public administration and policy sciences (Suchman, 1967; Weiss, 1972) and further formalised through evaluative criteria such as effectiveness, efficiency, equity, sustainability and institutional capacity (Dunn, 2018; OECD, 2019), the framework provides a structured method for comparing reform outcomes against stated policy objectives. In Nigeria, the Electric Power Sector Reform Act institutionalised sector reforms by unbundling the former National Electric Power Authority into successor entities under the Power Holding Company of Nigeria and establishing the Nigerian Electricity Regulatory Commission to oversee market operations. Given that these reforms were explicitly intended to enhance electricity supply reliability and sector efficiency, the Policy Evaluation Framework offers a systematic and governance-sensitive approach for determining whether those policy goals have, in fact, been realised.

Methodology

The main methodological strategy used in this study's qualitative research design is content analysis. To find patterns, themes, and institutional dynamics affecting sector performance, content analysis can be used to methodically examine policy papers, regulatory reports, legislative frameworks, and institutional publications. The research uses secondary data, such as: Performance information and regulatory reports from the Nigerian Electricity Regulatory Commission, Policy documents pertaining to the 2023 Electric Power Sector Reform Act, Nigerian Electricity Supply Industry Post-Privatization Performance Reports Federal Government policy briefings and reform documents scholarly journal articles about the privatisation and reform of energy, Reports from global organisations like the International Energy Agency and the World Bank

Findings and Discussions

The findings reveal that Nigeria's electricity sector continues to face deep structural and institutional constraints despite more than a decade of modernisation under the Electricity Act, succeeding the privatisation of the 2005 reform Act. Although the reform process unbundled the former National Electric Power Authority into successor companies under the

Power Holding Company of Nigeria and established the Nigerian Electricity Regulatory Commission to oversee market operations, improvements in service reliability have remained limited and uneven.

A major finding concerns the persistent generation capacity utilisation gap. While installed capacity stands at approximately 13,000 MW, available generation rarely exceeds 4,500–5,000 MW, indicating a utilisation shortfall of over 60% (NERC, 2020). This underperformance is attributed to inadequate plant maintenance, gas supply constraints affecting thermal stations, and hydrological variability impacting hydroelectric facilities (Casady & Peci, 2020). Trend analysis from 2010 to 2025 shows short-term gains immediately after privatisation (2013–2015), followed by fluctuating output and declining reliability due to ageing infrastructure and system disturbances. Although private participation increased nominal capacity and investment, operational efficiency gains remain limited, confirming that privatisation alone does not ensure improved performance (Abioye, 2022). This aligns with international evidence that structural reforms must be supported by strong institutional and technical frameworks to translate investment into dependable supply (Horvey et al., 2024).

Transmission infrastructure represents another critical constraint. The government-owned Transmission Company of Nigeria continues to struggle with limited wheeling capacity, line losses and underinvestment, often preventing the evacuation of available generation (NERC, 2020). Despite periodic upgrades and externally funded grid reinforcement projects, bottlenecks have persisted between 2010 and 2025. Comparative analysis shows negligible improvement in transmission efficiency before and after privatisation, underscoring the systemic inefficiency that arises when generation and distribution are restructured without comprehensive transmission reform. These constraints directly aggravate grid instability and power curtailment, reinforcing the argument that electricity reform must address the entire value chain (Saleh et al., 2024).

Distribution inefficiencies further undermine service delivery. Aggregate Technical, Commercial and Collection (ATC&C) losses remain above 40%, with some distribution companies recording losses exceeding 50% (Onwuka, 2021). Poor metering coverage, electricity theft, weak billing systems and inadequate network maintenance continue to impede performance. Although nominal revenue collection improved slightly after privatisation, actual service reliability gains have been minimal. Operational autonomy has not translated into substantial efficiency improvements, revealing persistent managerial and institutional weaknesses. Adoghe et al.

(2023) write that even where generation and transmission are sufficient, distribution shortcomings prevent electricity from reaching end users effectively.

Tariff reforms implemented through the Multi-Year Tariff Order (MYTO) sought to achieve cost-reflective pricing and financial viability. While tariff adjustments have improved revenue streams, they have also imposed considerable burdens on consumers, particularly low-income households. Since 2024 from as notably far back as 2003 and beyond, tariffs have trended upward without corresponding and consistent improvements in service quality, generating public dissatisfaction and political pressure for subsidies (Tosho & Ahmed, 2024). This raises equity concerns and illustrates the interconnectedness of financial sustainability, operational performance and social legitimacy within policy reform (OECD, 2019).

Governance and regulatory limitations remain central to sector outcomes. Although regulatory frameworks have enhanced transparency and accountability mechanisms, enforcement capacity remains constrained by political interference in tariff decisions, limited sanctions for non-compliant distribution companies and delays in infrastructure investment (Monica & Wilson-Uade, 2026). Liquidity crises and persistent non-compliance with service standards indicate gaps in regulatory oversight. Comparative evidence suggests that countries with stronger and more independent regulatory institutions achieve better service reliability outcomes (Meng et al., 2024; Hooda, 2025; Dragomir, 2022), reinforcing the conclusion that governance quality significantly shapes reform success.

Overall, the integrated findings demonstrate that Nigeria's post-privatisation electricity sector has achieved modest improvements in generation investment and revenue collection, yet reliability remains constrained by transmission bottlenecks, distribution inefficiencies, tariff tensions and regulatory weaknesses. The post-privatisation reality is therefore mixed: structural transformation has occurred, but operational performance and consumer welfare gains remain limited. These findings validate the Policy Evaluation Framework adopted in this study, confirming that ownership change alone does not determine reform success; rather, effectiveness depends on governance quality, institutional capacity, operational efficiency and coherent policy implementation.

Notwithstanding these challenges, future prospects exist. Expansion of generation capacity, particularly through gas-fired plants and renewable energy integration, offers opportunities for diversification and reduced vulnerability to hydrological and gas constraints (IEA, 2022). Planned grid modernisation projects and digital metering initiatives could strengthen transmission and distribution efficiency (NERC, 2020). Strengthening

regulatory independence and enforcement capability would enhance compliance and financial sustainability (Yee et al., 2024). Furthermore, alignment with global energy transition commitments provides an avenue for expanding sustainable energy access while improving reliability. The sector's trajectory therefore depends less on further structural restructuring and more on deepening institutional reform, infrastructure investment and regulatory effectiveness.

Recommendations

Based on the study's findings and prospects, the following recommendations are proposed:

1. **Integrated Sector Planning**: It is crucial to coordinate planning for distribution, transmission, and generating. Targeted public investment in grid modernisation and transmission should go hand in hand with privatisation.
2. **Regulatory Strengthening**: It is necessary to increase NERC's enforcement authority and regulatory independence. Transparent tariff modifications, fines for non-compliance, and routine audits are essential.
3. **Distribution Reform**: DisCos ought to enhance operational effectiveness, lower ATC&C losses, and deploy sophisticated metering infrastructure. Managerial accountability and service delivery can be coordinated through performance-based incentives.
4. **Tariff Rationalisation with Consumer Protection**: To guarantee equity and public acceptance, cost-reflective tariffs must be combined with targeted subsidies for disadvantaged groups.
5. **Encouragement of Renewable Energy**: Decentralised and renewable energy generation incentives, such solar household systems and mini-grids, can lessen the strain on the national grid and increase dependability in rural areas.
6. **Public-Private Collaboration**: Infrastructure funding, technology transfer, and skill development all depend on strong alliances between the government, private investors, and development organisations.

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