

**PUBLIC UTILITIES
REGULATORY COMMISSION**



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Private Sector Participation (PSP) in
Ghana's Electricity Distribution Sector:
Regulatory and Legal Strategies for
PURC

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KEY HIGHLIGHTS

- Lease & franchise models work where governments retain control but need efficiency gains.
- Concessions (like La Côte d'Ivoire's) show long-term success but require strong regulation.
- Some of the biggest challenges including energy theft, under investment, political interference must be addressed to ensure successful PSP.
- Regardless of the model chosen, the Commission must prioritize capacity building within its organization, strengthen its regulatory frameworks with model-specific guidelines, foster transparency and safeguard its independence from undue influences.

1. Introduction

Globally, there is an increasing trend towards leveraging private sector expertise and capital to improve the efficiency and sustainability of essential utility sectors, including electricity distribution. In Ghana, the electricity distribution sector, primarily dominated by state-owned entities, faces significant challenges that have prompted consideration of private sector participation¹. These challenges include financial distress, high system losses, infrastructure deficiencies, and revenue collection issues (World Bank, 2024). According to the Ministry of Energy and Green Transition (MoEGT), the Private sector involvement is anticipated to bring benefits such as improved operational efficiency, access to investment for infrastructure upgrades, and enhanced service delivery.

This brief assesses the readiness of the Public Utilities Regulatory Commission's to oversee private sector participation in the electricity distribution sector. It analyzes three specific PSP models: multiple lease, service franchise, and entity concession. For each model, the report identifies potential regulatory and legal challenges that the Commission might encounter and propose specific regulatory and legal strategies that PURC could adopt to ensure effective oversight, protect consumer interests, and promote optimal sector performance. Finally, the paper examines the potential regulatory implications for PURC under each of the three PSP options. The brief is structured, first to provide a contextual overview of Ghana's electricity distribution sector and the role of PURC. It then delves into the characteristics of the three PSP models, followed by a detailed analysis of the regulatory and legal strategies and implications for PURC under each model. The report then concludes with key steps for PURC to prepare for and effectively regulate private sector participation in the distribution sector.

¹ <https://www.energymin.gov.gh/sector-overview>

2. Contextual Overview

2.1 Current State and Challenges of Ghana's Electricity Distribution Sector

The electricity distribution sector in Ghana is currently dominated by two state-owned companies: The Electricity Company of Ghana (ECG) and the Northern Electricity Distribution Company (NEDCo). ECG is responsible for electricity distribution and supply in the southern regions of Ghana, including Ashanti, Central, Eastern, Greater Accra, Volta, and Western, while NEDCo serves the northern regions, encompassing Bono, Ahafo, Northern, North East, Savanna, Upper East, Upper West, and parts of Oti, Ashanti, and Western North. Enclave Power Company (EPC), a privately-owned distribution company, operates within the Tema Free Zones Enclave in the Greater Accra Region, primarily serving industrial customers.

Despite a relatively high national electricity access rate of approximately 89.4% (Energy Statistics, 2025), the sector grapples with several significant challenges. Both ECG and NEDCo face substantial financial distress, largely attributed to high distribution losses, low revenue collection rates, and tariffs that, at times, do not fully recover costs². In 2022, ECG reported an alarming loss of GH¢10.2 billion, representing a 433.5% increase from the previous year³. Similarly, NEDCo recorded a significant loss of GH¢547.9 million in 2023, marking a 19% deterioration from its 2022 performance (NEDCo Annual Report, 2023). Consequently, the government of Ghana has allocated a considerable portion of its national budget, around 2% of GDP annually, to cover the financial shortfalls in the energy sector, highlighting the magnitude of the problem (Kwakye, Dadzie and Elmaleh, 2022).

Another critical challenge is the prevalence of high system losses in the distribution network. These losses, encompassing both technical losses from infrastructure inefficiencies and commercial losses from power theft and non-payment of bills, are significantly above acceptable industry benchmarks for both ECG and NEDCo (Arthur, et al., 2024). According to the 2025 Energy Statistics Bulletin published by the Energy Commission, power losses incurred by the Electricity Company of Ghana (ECG) in 2024 accounted for 32% of its total electricity purchases, the highest level in more than 20 years. In a similar vein, the Northern Electricity Distribution Company (NEDCo) reported a troubling performance in 2024, with losses of 669 GWh, representing a loss rate of almost 31%, virtually matching ECGs. In stark contrast, the paper noted the Enclave Power Company (EPC) as having maintained comparatively low loss percentages, averaging 2.5% between 2015 and 2024. The high level of these losses not only impacts the financial health of the utilities but also affects the overall efficiency and reliability of the power supply.

2.2 The Role and Mandate of the Public Utilities Regulatory Commission (PURC)

The Public Utilities Regulatory Commission (PURC), an independent statutory body⁴ established in 1997 under Act 538 serves as a multi-sector regulator with the mandate to oversee the provision of electricity and water utility services in Ghana. The establishment of PURC was a key component of the Government of Ghana's power sector reform process, aimed at enhancing efficiency and accountability within the sector⁵. The Energy Commission Act, 1997 (Act 541), further broadened PURC's regulatory responsibilities to include the transportation of natural gas services.

² <https://thebftonline.com/2024/09/25/the-energy-sector-crisis/>

³ ECG bleeds - The Business & Financial Times: <https://thebftonline.com/2024/09/10/ecg-bleeds/>

⁴ PUBLIC UTILITIES REGULATORY COMMISSION Guidelines Issued Under the – PURC <https://www.purc.com.gh/attachment/197128-20221213071230.pdf>

⁵ Public Utilities Regulatory Commission (PURC), <https://www.purc.com.gh/>

PURC's legal mandate, as defined by Act 538, empowers it with several key functions essential for regulating the utility sector. These include providing guidelines for the rates to be charged for utility services; examining and approving utility rates; protecting the interests of both consumers and providers of utility services; monitoring and enforcing standards of performance for the provision of utility services; promoting fair competition among public utilities; receiving, investigating, and settling complaints related to utility services; and advising any person or authority in respect of any public utility. PURC also plays a crucial role in setting tariffs for electricity and approving tariff reviews, ensuring a balance between the interests of consumers and the financial viability of the utility service providers⁶.

Legally, PURC operates as an independent body and is not subject to the control of any authority in the performance of its functions. This independence is crucial for ensuring unbiased and effective regulation. While PURC submits annual operational and financial reports to Parliament⁷, research indicates potential challenges to its full structural autonomy and the risk of political interference, particularly in decisions related to tariff reviews⁸. Strengthening this independence is a key factor for PURC to effectively oversee private sector participation in the electricity distribution sector.

A core function of PURC is its role in tariff setting for electricity. The Commission is mandated to set tariffs and approve tariff reviews, considering the need to balance the interests of consumers with the financial requirements of the utility providers. PURC has issued rate-setting guidelines for electricity distribution and supply to provide a framework for these decisions⁹. As the sector potentially transitions to PSP, PURC's tariff-setting methodologies may need to evolve to accommodate the cost structures and investment needs of private entities while ensuring affordability and fairness for consumers

3. Understanding Private Sector Participation (PSP) Models in Electricity Distribution

3.1 Multiple Lease Model

3.1.1 Characteristics of MLM

The multiple lease model for private sector involvement in electricity distribution entails leasing out individual components or portions of the distribution network, as well as specific customer segments, to several private operators for a particular period of time¹⁰. Under this approach, the public utility organisation normally retains ownership of the underlying assets, while private operators get the right to operate, maintain, and perhaps invest in the leased portions¹¹. This might take several forms, including leasing individual substations, stipulated geographical sections of the distribution grid, or the right to serve specific types of consumers, such as industrial or commercial customers. As a leasing model, it means the transfer of operational tasks and financial risks associated with revenue collection to private operators.

⁶ [www.purc.com.gh, https://www.purc.com.gh/attachment/752841-20201203041204.pdf](https://www.purc.com.gh/attachment/752841-20201203041204.pdf)

⁷ About - PURC, <https://www.purc.com.gh/who-we-are>

⁸ Ghana | Africa Energy Portal, <https://africa-energy-portal.org/eri/country/ghana>

⁹ PURC Rate Setting Guidelines for Electricity Distribution and Supply Volume 1, <https://www.purc.com.gh/attachment/438724-20201119111122.pdf>

¹⁰ Model Leases and PPAs – SEIA - Solar Energy Industries Association, <https://seia.org/research-resources/model-leases-and-ppas/>

¹¹ Private investment in transmission – concessions (part 1) - Hunton Andrews Kurth LLP, <https://www.hunton.com/insights/legal/private-investment-in-transmission-concessions-part-1>

3.1.2 Global Experience

Empirical research has often focused on leasing agreements in the context of solar energy projects and energy storage systems, rather than electricity distribution networks¹². One model that has similar features is the “selling on behalf of rent” concept used in distributed energy storage, in which project developers lease energy storage equipment to customers at a fee¹³. However, concrete examples of the multiple leasing model being widely applied in power distribution networks appear to be limited. This means that if Ghana adopts this model, it may be venturing into a less prevalent paradigm that needs careful adaptation and innovation in its regulatory and legislative structures.

The World Bank Private Participation in Infrastructure database recognizes only three lease agreements on the African continent, one in Ghana, which is currently not in operation and two in Namibia, of which only one in is still in force. Considering this exceptionally limited track record, the performance of such arrangements in Africa is not well documented (World Bank, n.d).

3.1.3 Key Considerations

Multiple leasing arrangements raise a number of important considerations. Defining the exact lease regions and related client categories is critical to ensuring the economic feasibility of each lease while also preventing concerns of private sector operators cherry-picking more profitable areas. Determining the right lease tenure is also critical for attracting sufficient private investment while ensuring that the public utility maintains adequate control over vital infrastructure. It will be critical to establish clear tariff structures for lessees and the end customers they serve, which may result in complicated tariff procedures that require rigorous regulatory control.

Summary of Case Studies

- **Nigeria (Eko Electricity Distribution Company - EKEDC & Others)**
 - Under Nigeria’s privatization program (2013), private operators leased distribution assets from the government (Nwangwu, 2021).
 - **Success:** EKEDC improved billing efficiency (reduced Aggregate Technical, Commercial & Collection losses from ~50% to ~30%).
 - **Challenge:** High energy theft, political interference, and tariff collection inefficiencies persist.
- **India (Private Lease in Delhi - BSES Rajdhani & Yamuna)**
 - Private firms leased Delhi’s distribution network from the government (since 2002)¹⁴.
 - Success: Reduced losses from ~55% to ~10% in some areas, and improved reliability.
 - Challenge: Tariff disputes with regulators and subsidy dependence.

Key Challenges

- Regulatory risks (government interference in tariffs).
- High technical & commercial losses (especially in Africa).
- Underinvestment due to uncertain lease terms.

¹² Commercial Lease - NREL, <https://www.nrel.gov/analysis/assets/docs/commercial-lease.docx>

¹³ 5 Business Models of Distributed Energy Storage – Microgrid. <https://www.grid-ess.com/5-business-models-of-distributed-energy-storage.html>

¹⁴ <https://www.adb.org/sites/default/files/project-documents/47924-014-rrp.pdf>

Furthermore, critical regulatory tasks will include defining the performance obligations and service quality standards that each lessee must meet, as well as ensuring effective coordination and interoperability between the various leased segments and the remaining parts of the public utility's distribution system. Finally, the duties for network growth, improvements, and the interface between different lessees must be clearly specified in order to prevent fragmentation and guarantee the overall integrity and development of the electrical distribution network.

3.2 The Service Franchise Model

3.2.1 Characteristics of SFM

The service franchise model involves granting a private entity, known as the franchisee, the right to provide specific services related to electricity distribution within a defined geographic area on behalf of the main distribution utility, which retains ownership of the assets¹⁵. These services may include invoicing and revenue collection, maintenance of distribution equipment, customer service activities, and attempts to decrease power losses. The franchisee often has contractual arrangement with the distribution company and is normally accountable for reaching predetermined performance criteria (Das, 2019). The franchise model of energy distribution allows private firms to participate in the power distribution industry without transferring ownership, unlike privatisation. Involvement of franchisees in power distribution provides opportunities for private sector efficiency to come in without involving the political problems associated with privatization. Franchise participation model guarantees distribution utility revenue while also easing the distribution businesses' workload (Forum of Regulators, 2010). This strategy has attracted attention in the electricity distribution industry since it can reduce AT&C losses, as demonstrated by the Bhiwandi success story in Maharashtra (Kamdar, 2015; Tripathi et al, 2017).

3.2.2 Global Examples

The use of the service franchise model in the distribution of energy is demonstrated by a number of international cases. India has a lot of experience with this methodology, especially when it comes to lowering aggregate technical and commercial (AT&C) losses and increasing the effectiveness of tax collection in certain areas such as the state of Odisha, Bhiwandi, and Agra¹⁶. Maharashtra State Electricity Distribution Company Limited and Torrent Power entered into a distribution franchise agreement in 2006 for a 10-year initial period that was extended by another 10-year extension in 2016. This is evidence of Indian distribution franchising. Maharashtra State Electricity Distribution Company Limited has extended distribution franchising in further areas within its license jurisdiction as a result of the initial agreement with Torrent Power's success (KPMG, 2020). Nigeria has also explored the potential of service franchising to enhance the quality of electricity supply and address operational challenges within its distribution sector. On June 24, 2020, the Nigerian Electricity Regulatory Commission (NERC) published rules on distribution franchising in the NESI as part of its regulatory duties (ibid).

In the United States, the city of Chicago has a franchise agreement with ComEd, its electricity distribution business, which covers reliability and clean energy targets in addition to service delivery. Under the agreement, ComEd is permitted to use public rights-of-way to provide electricity to homes and businesses throughout Chicago. The recently extended franchise agreement supports the city's climate action strategy by addressing energy equity, job creation, and sustainable mobility options¹⁷.

¹⁵ City of Chicago Franchise for Electricity Delivery RFI,

https://www.chicago.gov/content/dam/city/depts/dgs/electricity_franchise/RFI-Responses/Commonwealth-Edison-Co.pdf

¹⁶ Evolving Distribution Franchisee Model across states - Pmanifest, <https://www.pmanifest.com/evolving-distribution-franchisee-model-across-states/>

¹⁷ <https://www.chicago.gov/content/dam/city/depts/mayor/Press%20Room/Press%20Releases/2023/February/UtilityFranchiseAgreementNationLeadingEnergyComEd.pdf>

3.2.3 Key Considerations

Key considerations for developing a service franchise model include precisely specifying the scope of services to be franchised as well as the exact geographic region to which the franchise will extend. It is critical to provide specific performance goals for the franchisee, such as particular reductions in power losses, increased collection efficiency, or adherence to service response times. The franchise agreement must also specify the revenue sharing processes and fees that will be charged to the franchisee for their services. Another critical consideration is determining if the franchisee will be required to make any investments in network improvements or technology adoption.

The role and responsibilities of the main distribution utility in overseeing and coordinating the activities of the franchisee need to be clearly articulated. Ensuring adequate consumer protection and establishing effective mechanisms for handling consumer complaints related to the franchised services are paramount. Finally, the duration of the franchise agreement and the terms for its renewal will need careful consideration to balance the need for long-term investment with the possibility of introducing competition or revising terms in the future.

Summary of Case Studies

- **Côte d'Ivoire (CIE - Compagnie Ivoirienne d'Électricité)**
 - French consortium (Eranove/EDF) operates under a **30-year concession (since 1990)**.
 - **Success: 95% urban electrification**, reliable supply, profitable operations.
 - **Challenge:** Rural electrification lags behind.
- **Cameroon (AES Sonel - Now ENEO)**
 - US-based AES Corp. held a concession (2001-2014).
 - **Success:** Improved operational efficiency, reduced losses.
 - **Challenge:** Underinvestment in rural areas, financial instability.
- **Brazil (Equatorial Energia in Maranhão)**
 - US-based AES Corp. held a concession (2001-2014).
 - **Success:** Improved operational efficiency, reduced losses.
 - **Challenge:** Underinvestment in rural areas, financial instability.

Key Challenges

- High upfront investment required.
- Regulatory and currency risks in emerging markets.
- Balancing profitability with universal access.

3.3 Entity Concession Model

3.3.1 Characteristics of Entity Concession Model

Concession agreements provide an intriguing compromise between conventional State-owned distribution methods and wholly private sector-driven tactics. Under these agreements, “the government grants a private company the right to extend a specific service under conditions of significant market power¹⁸.” Under this model, a private company, the concessionaire, is awarded the right to operate and maintain the entire electricity distribution network (or a significant portion thereof) within a defined geographical area for an extended period¹⁹.

¹⁸ As defined in Hosier et al. (2017)

¹⁹ Energy Agreements - Public-Private Partnership Resource Center, <https://ppp.worldbank.org/public-private-partnership/print/pdf/node/3532>

This often includes the responsibility for making necessary investments in upgrading and expanding the network. While operational control is transferred to the concessionaire, the ownership of the assets typically remains with the public sector, although in some cases, there might be provisions for ownership transfer at the end of the concession period²⁰. The concessionaire becomes responsible for all aspects of electricity distribution within the specified territory, subject to regulatory oversight by the government or a designated regulatory body.

3.3.2 Global Examples Entity Concession Model

Around the globe especially Latin America, Asia and Africa, countries have resorted to adopt the entity concession model for their electricity distribution sectors, with varying degrees of success. In Africa, Uganda's 20-year concession with Umeme, aimed at improving efficiency and expanding electricity access, serves as a notable example (Nsasira et al, 2013).

Another key example of entity concession is the long-standing agreement between La Côte d'Ivoire and the Compagnie Ivoirienne d'Electricité (CIE) for the operation of its electricity distribution utility²¹. In 1990, CIE signed a concession agreement to run the transmission and distribution network in Côte d'Ivoire. However, the responsibility of central planning operations, the growth and ownership of the transmission and distribution network, along with several hydroelectric and thermal units (legacy power plants) remained that of CI-Energies, a state-owned enterprise (Pelizan and Alavi, 2019).

Delhi India, also provides an example of a successful entity concession where Tata Power significantly reduced distribution losses and improved service quality. The experience of these countries highlights the potential of entity concessions to bring about significant improvements in the electricity distribution sector, but also underscores the critical importance of a robust regulatory framework and careful contract design. The World Bank's Energy Sector Management Assistance Program (ESMAP) conducted case studies on the efficacy of concessions in Brazil, Peru, the Philippines, and Turkey. The studies highlighted the benefits of "transparency and predictability of the regulatory process," adding that "investors are attracted when they are protected from risks beyond their control."²³

Summary of Case Studies

- **Tanzania (Umeme in Uganda - Similar Model)**
 - Umeme (private operator) took over Uganda's distribution under a concession (2005).
 - Success: Reduced losses from **38% to 17%**, improved revenue collection.
 - Challenge: Political pushback over tariff hikes and low access rate.
- **South Africa (City Power Johannesburg - Hybrid Model)**
 - Partial private involvement in operations under performance contracts.
 - Success: Improved metering and revenue collection in some areas.
 - Challenge: Corruption and mismanagement risk.

Key Challenges

- Regulatory risks (government interference in tariffs).
- High technical & commercial losses (especially in Africa).
- Underinvestment due to uncertain lease terms.

²⁰ Private investment in transmission – concessions (part 1) - Hunton Andrews Kurth LLP, <https://www.hunton.com/insights/legal/private-investment-in-transmission-concessions-part-1>

²¹ A Private Path to Power in Africa – Kearney <https://www.kearney.com/documents/291362523/291367986/A+Private+Path+to+Power+in+Africa.pdf/ef4863fc-8729-9a68-936b-784fee90e6c2?t=1608447243000>

²² Electricity distribution concessions in Odisha - MIT Energy Initiative, <https://energy.mit.edu/wp-content/uploads/2022/09/MITEI-WP-2022-04.pdf>

²³ <https://openknowledge.worldbank.org/bitstream/handle/10986/22750/Private0sector0lippines00and0Turkey.pdf?sequence=1&isAllowed=y>

3.3.3 Key Considerations of Entity Concession Model

Key considerations for implementing an entity concession model include determining the appropriate geographical scope and the duration of the concession period, which is typically long-term, often ranging from 20 to 30 years or more (Haldea, 2012). Clearly, defining the investment requirements for the concessionaire in terms of network upgrades, expansion to underserved areas, and adoption of modern technologies is crucial. Establishing a transparent and effective tariff regulation mechanism that balances the concessionaire's need for profitability and a reasonable return on investment with the affordability of electricity for consumers is essential. Setting comprehensive and measurable performance standards across all critical aspects of electricity distribution, such as reliability of supply, reduction of technical and commercial losses, and quality of customer service, is vital. The concession agreement must also define the terms and conditions for the eventual transfer of assets back to the public sector at the end of the concession period, if applicable. Appropriately allocating the various risks associated with the project between the government/PURC and the concessionaire is a key factor in ensuring the project's bankability and success. Finally, establishing robust dispute resolution mechanisms to handle any conflicts that may arise during the long concession term is necessary to maintain a stable and predictable operating environment.

4. Regulatory and Legal Strategies for Multiple Lease in Ghana

4.1 Potential Challenges for PURC

Implementing a multiple lease model in Ghana's electricity distribution sector would present PURC with a complex array of regulatory and legal challenges. First, drafting the lease agreements themselves would be a complex undertaking, requiring precise definitions of the scope of responsibility for each lessee, clearly articulated performance obligations with measurable metrics, and a thorough allocation of liabilities between the utility and the lessees²⁴.

Coordinating the operations of numerous lessees, each potentially operating in different geographical areas or serving distinct customer groups, would require a sophisticated regulatory framework. Ensuring seamless interaction and technical interoperability between these leased segments and the remaining parts of the distribution network, likely still under the management of the main utility, would be a significant hurdle. Legal challenges could also arise in relation to tariff setting and ensuring that lessees have a legally sound basis for cost recovery. Setting tariffs that are fair and equitable for consumers across different leased areas and customer segments could necessitate the creation of an intricate and potentially differentiated tariff structure.

The number of complaints and disputes requiring PURC's attention could also arise due to the involvement of multiple service providers. The regulatory focus would shift towards the intricate monitoring of contractual compliance across a multitude of leases and ensuring seamless coordination between the different operators to maintain the integrity of the entire distribution network.

Addressing the crucial issue of network expansion and upgrades in a fragmented lease structure, where responsibilities and incentives might not be aligned across different operators, would pose a further challenge. Ensuring a consistent level of quality of service for all consumers, regardless of which entity is operating the leased segment serving them, would be paramount. Additionally, the potential for regulatory arbitrage, where lessees might seek to exploit differences in lease terms or regulatory oversight across different segments, would need to be carefully monitored and mitigated.

²⁴ Municipal Franchise Agreements and Clean Energy Objectives | Solar Market Research and Analysis, NREL, <https://www.nrel.gov/solar/market-research-analysis/municipal-franchise-agreements.html>

The legal framework for the transfer of operational control, and potentially assets, at the end of the lease period for each segment would need to be clearly defined to avoid disputes and ensure a smooth transition. Finally, managing the legal risks associated with potential disputes and breaches of contract between the utility, the lessees, and consumers would be a significant consideration.

The lack of widespread precedent for this model in electricity distribution globally, as indicated by the limited information in the provided snippets, further amplifies these regulatory complexities.

4.2 Recommended Regulatory Strategies

To effectively regulate a multiple lease model, it will be required of the Commission to establish a comprehensive regulatory framework specifically designed for this approach. This framework should clearly articulate the rights and obligations of PURC, the main utility, and all participating lessees. PURC would have to develop detailed guidelines for defining the geographical boundaries of each lease area and the specific customer segments to be served by each lessee, ensuring that there are no overlaps or gaps in service responsibility. Standardized performance monitoring frameworks with specific Key Performance Indicators (KPIs) relevant to the nature of each lease would have to be implemented, covering aspects such as technical performance, customer service standards, and the financial viability of the lessee's operations.

Transparent tariff methodologies would have to be designed, considering the costs and investments incurred by each lessee while ensuring affordability and fairness for all categories of consumers. This might involve differentiated tariffs based on the specific lease area or the type of services provided, but all such tariff structures would be subject to clear justification and prior regulatory approval by the Commission. A robust dispute resolution mechanism would have to be established to efficiently address any conflicts that may arise between the various stakeholders involved in the multiple lease arrangement.

The Commission would have to mandate the main utility to retain overall responsibility for maintaining the integrity of the entire distribution system and for ensuring effective coordination between all lessees operating within the network, with the Commission providing stringent oversight of these coordination efforts. Regulations with respect to network expansion and upgrades would have to clearly define the responsibilities and investment obligations of both the main utility and the lessees within their respective areas of operation. PURC would have to conduct regular audits and performance reviews of each lessee to ensure compliance with the terms of their lease agreements and the established regulatory requirements, proactively identifying and addressing any potential issues that may emerge. The increased complexity and workload would likely necessitate the creation of a dedicated unit within PURC, staffed with specialized legal, financial, and technical expertise, specifically to oversee the multiple lease arrangements.

5. Regulatory and Legal Strategies for Service Franchise in Ghana

5.1 Potential Regulatory Challenges for PURC

Implementing a service franchise model in Ghana's electricity distribution sector would present PURC with several regulatory challenges. Defining clear boundaries of responsibility between the franchisor (the main distribution utility) and the franchisee, who is responsible for specific services, will be crucial to avoid overlaps or gaps in service provision. The Commission would need to develop expertise in regulating specific service areas within electricity distribution, such as billing, collection, and maintenance, rather than solely focusing on the overall distribution operation. This shift in focus may necessitate the recruitment or training of regulatory staff with specialized knowledge in these areas. PURC would likely see an increased level of interaction with and oversight of a wider range of private entities, as the number of franchisees could be significant in addition to the main distribution utility.

The monitoring focus of PURC would shift towards specific service performance metrics defined in the franchise agreements, requiring the development of new data collection and analysis capabilities tailored to these metrics.

Monitoring the impact of the franchise arrangement on the overall efficiency and quality of the distribution network, including potential effects on services not covered by the franchise, will be an important regulatory task. Setting tariffs that adequately compensate the franchisee for their services while remaining affordable for consumers and ensuring the financial viability of the main utility will require careful consideration by PURC.

Managing potential conflicts of interest that could arise between the franchisor and the franchisee, potentially to the detriment of consumers, will also fall under PURC's regulatory oversight. Ensuring adequate consumer protection and establishing clear channels for addressing complaints related to the services provided by the franchisee will be paramount. Finally, PURC will need to regulate the flow of information and data, particularly sensitive customer data and billing information, between the franchisor and the franchisee, ensuring compliance with data protection laws and regulations.

Legal issues could also arise concerning the transfer of specific operational responsibilities and associated risks to the franchisee while the utility retains overall ownership and licensing responsibility for the distribution network. Additionally, legal challenges related to data privacy and security in the context of data sharing between the utility and the franchisee will need to be addressed, ensuring compliance with Ghana's data protection laws.

5.2 Recommended Regulatory Strategies

To effectively regulate a service franchise model, PURC would have to establish a comprehensive regulatory framework specifically for this type of PSP. There would be the need for the Commission to develop standardized model franchise agreement templates for different types of services that can be franchised within the electricity distribution sector, such as billing and collection, maintenance, and customer service. These templates should be comprehensive enough to address all key legal considerations, including clear definitions of services, performance standards, payment terms, liability allocation, and data protection requirements.

The Commission would have to develop specific and measurable performance standards and targets for each type of service that can be franchised, such as setting clear targets for loss reduction in franchised areas or establishing specific response times for maintenance requests. These standards should be accompanied by clear metrics for regular monitoring and reporting to PURC. The Commission would also require utilities to establish robust oversight mechanisms for their franchisees, including regular performance audits and reporting requirements to PURC on key performance indicators. PURC would have to implement tariff guidelines that clearly specify how franchisees will be compensated for their services, potentially through performance-based incentives linked to the achievement of agreed-upon targets. Clear and enforceable rules and protocols regarding data sharing, access, and protection between the utility and franchisees would have to be established, ensuring compliance with relevant data protection laws and regulations.

The Commission would also have to ensure that accessible and effective consumer complaint mechanisms are in place to address issues related to franchised services, with clearly defined roles and responsibilities for both the franchisee and the utility in resolving complaints, with PURC providing oversight responsibility for the process. Finally, PURC should conduct periodic reviews of franchise arrangements to assess their impact on overall sector performance, efficiency gains, service quality, and consumer satisfaction, adjusting the regulatory framework as needed.

6. Regulatory and Legal Strategies for Entity Concession in Ghana

6.1 Potential Regulatory Challenges for PURC

Regulating an entity concession for electricity distribution in Ghana would present PURC with a significant set of long-term challenges. Overseeing a large private entity responsible for a substantial portion or the entirety of the distribution network within a defined area would require a robust and sustained regulatory effort. Ensuring that the concessionaire makes the necessary long-term investments in infrastructure upgrades, expansion to underserved areas, and the adoption of modern technologies would be a key regulatory responsibility.

The Commission would likely face the complex task of regulating tariffs over a long concession period, needing to balance the concessionaire's legitimate need for profitability and a fair return on their investment with the imperative of ensuring affordable electricity for consumers. Assuming multiple entity concessions were awarded in different regions of Ghana, the Commission would need to address potential issues related to market power and ensure fair competition across these regions. Managing the complex relationship between the concessionaire and other key players in the electricity sector, such as generation and transmission companies, would also fall under the Commission's regulatory purview. Furthermore, the Commission would need to plan for the eventual transfer of assets back to the public sector at the end of the often-lengthy concession period, ensuring a smooth and equitable process.

Finally, the legal implications of potential changes in government policies or regulations during the often-decades-long concession term would need to be considered and addressed within the agreement to provide a degree of stability and predictability for the concessionaire.

6.2 Recommended Regulatory Strategies

To effectively regulate an entity concession, the Commission must develop a comprehensive concession agreement framework that clearly outlines the key terms, conditions, and regulatory requirements governing such arrangements. This framework should establish clear and measurable performance standards covering all critical aspects of electricity distribution, including reliability indices, targets for reducing technical and commercial losses, and customer service metrics.

The Commission's multi-year tariff framework must provide a degree of predictability for the concessionaire's revenue streams while also allowing for periodic reviews and adjustments based on the concessionaire's performance, changes in market conditions, and the need to protect consumer interests²⁵. Where multiple concessions are awarded, the Commission must develop mechanisms for ensuring fair competition and preventing the abuse of market power, potentially including the application of anti-trust regulations and ongoing market oversight. The Commission should also facilitate regular communication and coordination between the concessionaire and other relevant stakeholders in the electricity sector, such as generation and transmission companies, through regulatory guidelines and regular stakeholder forums. To prepare for the end of the concession period, the Commission should establish a clear regulatory process for the transfer of assets back to the public sector, including provisions for technical audits, asset valuation, and the transfer of operational knowledge and systems. The Commission should also define clear legal processes for monitoring the concessionaire's compliance with the terms of the agreement and for enforcing the established performance standards, including specific penalties for non-compliance.

The Commission would have to develop and maintain a high level of specialized expertise in areas such as sophisticated financial modelling and analysis, comprehensive technical performance monitoring of a large-scale distribution network, and the intricate legal aspects of concession agreements. The Commission would likely experience increased engagement with international investors and financial institutions involved in funding the concession. To effectively monitor the concessionaire's performance, the Commission would need to invest in enhanced data collection and analysis capabilities, potentially requiring the implementation of advanced technological systems.

²⁵ Model Regulations for Multi Year Distribution Tariff

https://forumofregulators.gov.in/Data/study/Model_Tariff_Regulations_14_11.pdf

7. Preparing PURC for Private Sector Participation

7.1 Comparative Analysis of Regulatory and Legal Implications Across PSP Models

The three PSP models mentioned above – multiple lease, service franchise, and entity concession – present distinct regulatory and legal implications for PURC. The multiple lease model, while potentially offering targeted efficiency gains in specific areas, carries the highest regulatory burden due to the need to manage and coordinate numerous independent operators, each with potentially different lease terms and performance obligations. This model would demand strong contract management skills and sophisticated technical coordination expertise within PURC. The service franchise model, focusing on specific service areas, presents a moderate level of regulatory complexity. PURC would need to develop expertise in overseeing the performance of franchisees in areas such as billing and maintenance, requiring a shift in regulatory focus and potentially specialized staff. The entity concession model, involving a single large private entity responsible for a significant portion of the network, also presents a high level of regulatory complexity, demanding deep financial, technical, and legal expertise for effective long-term oversight and the management of a comprehensive concession agreement.

From a legal perspective, the multiple lease model would necessitate the development of numerous standardized yet potentially complex lease agreements, requiring meticulous drafting and clear definitions of responsibilities and liabilities. The service franchise model would require legally sound franchise agreements outlining the scope of services, performance expectations, and payment terms. The entity concession model demands the most comprehensive and detailed legal framework, with a complex concession agreement addressing a wide range of potential issues over a long duration, including investment obligations, tariff regulation, risk allocation, and dispute resolution.

In terms of regulatory risk and potential benefits, the multiple lease model carries a potentially higher risk of fragmentation and coordination challenges, but could also yield targeted efficiency improvements in specific segments. The service franchise model might have a lower risk profile but could also have a more limited impact on overall sector performance. The entity concession model offers the highest potential for significant improvements in efficiency and investment across a large area, but also carries a higher risk of underperformance or disputes if not regulated effectively over the long term.

8. Conclusion

Effective private sector involvement in Ghana's electrical distribution industry would depend on careful planning and the creation of a strong and flexible regulatory framework supervised by an independent and well-equipped PURC. Depending on the particular PSP model chosen, different legal and regulatory approaches will be needed, as each model has its own set of consequences and difficulties.

In order to implement a multiple leasing model, PURC will need to create intricate tariff structures, strong dispute resolution procedures, and sophisticated methods for coordinating and supervising several operators. Focussing on controlling certain service sectors and making sure franchisees have clear contractual duties and performance requirements are essential components of the service franchising model. The entity concession model demands long-term regulatory commitment, expertise in overseeing large-scale infrastructure investments, and a comprehensive legal framework to govern the entire concession lifecycle.

Regardless of the model selected, the PURC in the scheme of regulating the sector, will be essential in maintaining efficient monitoring, protecting consumer interests, and advancing the general effectiveness and sustainability of Ghana's power distribution industry with private sector involvement. Building organisational capacity should be a top priority for the Commission to enable it to carry out this role. It would also need to strengthen its regulatory frameworks with model-specific guidelines, improve its monitoring and enforcement capabilities, encourage transparency and actively engage stakeholders, protect its independence from undue influence, improve collaboration with other important institutions, and make strategic technological investments to increase regulatory efficiency

Annex

Table 1: Comparison of PSP Models for Ghana's Electricity Distribution Sector

Model	Characteristics	Advantages (Potential in Ghana)	Disadvantages (Potential Challenges in Ghana)	Key Regulatory Considerations for PURC	Relevant Global Examples
Multiple Lease	Leasing specific network parts or customer segments to different private operators for a defined period; Public ownership retained.	Targeted efficiency gains in specific areas; Potentially lower upfront capital requirement for lessees.	High regulatory complexity in coordination; Potential for service fragmentation; Risk of regulatory arbitrage.	Establishing coordination mechanisms; Defining clear performance standards for each lease; Designing fair and equitable tariff structures; Managing interfaces between lessees and the utility.	Limited direct examples in electricity distribution; "Selling on behalf of rent" in energy storage.
Service Franchise	Granting a private entity, the right to provide specific services (e.g., billing, maintenance) within a defined area on behalf of the utility; Public ownership retained.	Focus on improving specific service areas; Potential for leveraging private sector expertise in targeted functions.	Potential for unclear responsibilities between utility and franchisee; Need to ensure service quality across all functions.	Defining service boundaries and responsibilities; Setting performance targets for franchisees; Regulating compensation mechanisms; Ensuring consumer protection for franchised services.	India (Bhiwandi, Agra, Odisha) for loss reduction and collection; Nigeria; Chicago, USA.
Entity Concession	Awarding a private company, the right to operate and maintain the entire distribution network (or a significant part) for a long period, including potential investment; Ownership typically public.	Potential for comprehensive network improvements and efficiency gains; Attracts significant private investment.	High regulatory burden for long-term oversight; Risk of underperformance if not effectively regulated; Potential issues with tariff affordability over time.	Long-term oversight of a large entity; Ensuring investment in infrastructure; Regulating tariffs over a long period; Monitoring comprehensive performance standards; Planning for asset transfer at concession end.	Uganda (Umeme); Côte d'Ivoire (CIE); Puerto Rico; Delhi, India.

Table 2: Regulatory Implications for PURC by PSP Model

PSP Model	Impact on Workload	Required Expertise	Key Focus Areas
Multiple Lease	Significantly increased workload managing numerous lessees.	Strong contract management, financial modeling for leases, granular monitoring.	Coordination between operators, tariff regulation for segments, dispute resolution.
Service Franchise	Increased interaction with more private entities.	Expertise in specific service areas (billing, maintenance), contract oversight.	Monitoring service performance metrics, ensuring utility coordination, consumer protection.
Entity Concession	Significant responsibility for long-term oversight of a large entity.	Deep financial modeling, technical performance monitoring, concession law.	Ensuring long-term investment, tariff regulation, comprehensive performance, asset transfer planning.

Table 3: PURC Readiness Assessment and Action Plan for Private Sector Participation

Readiness Area	Current Status (Brief Assessment)	Recommended Priority Actions for PURC
Legal Framework	Act 538 provides a foundation, but specific PSP regulations may be needed.	Review and amend existing laws to explicitly accommodate each PSP model. Develop model-specific agreements and guidelines.
Regulatory Capacity	Experienced in utility regulation, but PSP requires specialized skills.	Invest in targeted training in contract management, infrastructure finance, performance-based regulation. Consider a center of excellence.
Monitoring Systems	Existing systems may need enhancement for multiple operators and specific service areas.	Implement technology-driven systems for data collection and real-time performance monitoring.
Stakeholder Engagement	PURC engages stakeholders, but deeper engagement on PSP specifics is needed.	Foster open communication and consultation with all relevant stakeholders on PSP plans and regulations.
Independence	Legally independent, but potential for political influence exists.	Reinforce appointment procedures and tenure to further strengthen operational independence.
Collaboration with Energy Commission	Established relationship, but enhanced coordination for PSP is crucial.	Formalize and enhance coordination through agreements and regular joint working groups.
Technology Adoption	Investing in technology, but further advancements needed for complex PSP oversight.	Strategically invest in advanced IT systems for data management and performance analysis.

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Service Charge (GHS) :

Total Amount (GHS) :

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Consumption (m3) -----> Total Amount (GHS)

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Preference : Consumption (m3)

Consumption (m3) :

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1

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1

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Duration of use:

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