



ENERGY COMMISSION

Securing Ghana's Energy Future Today

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GUIDELINES FOR THE DEVELOPMENT OF PRIVATE ELECTRICITY DISTRIBUTION NETWORKS FOR ELECTRICITY RETAIL SERVICES

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Preface

The Government of Ghana has envisaged that industrialisation will lead to the transformation of the economy and pave the way for citizens to enjoy the benefits of an industrial economy with good jobs and higher incomes. The development of industrial parks and residential communities is pivotal to this transformation agenda to improve access to utility services, thereby easing the setting up of factories within the country.

The Ministry of Energy intends to initiate measures to promote the development of industrial parks. The Ministry of Energy indicates that this endeavour will attract potential investors and position Ghana to access significant and sustainable Foreign Direct Investments. Furthermore, the Ministry of Energy asserts that developing these industrial parks would enhance security, quality and reliability of supply, reduce distribution losses and possibly reduce electricity prices.

Private electricity distribution systems are electricity networks that are constructed by developers other than licensed distribution utilities for concessions. The private electricity distribution networks may be connected to privately owned embedded generators, a distribution network of the concessionaire or the national transmission grid for power offtake from wholesale suppliers. Further, it is an opportunity for the integration of renewable energy sources, which may bring about a reduction of greenhouse gas emissions.

It is for the aforementioned reasons that this Guideline has been developed by the Energy Commission to regulate the development of private electricity distribution networks for industrial parks and residential communities.

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List of Acronyms

1. DSC 1 is the rate for distribution companies to recover the cost of their distribution network operations.
2. DSC 2 is the rate for distribution companies to recover distribution losses.
3. TSC 1 is the rate for GRIDCo to recover the cost of its transmission network operations.
4. TSC 2 is the rate for GRIDCo to recover transmission losses.

DEFINITIONS

"Act "	means the Energy Commission Act, 1997 (ACT 541).
"Applicant"	means a person who has applied for a licence or permit under the Act.
"Brownfield"	An already developed area for the distribution of electricity
"Commission"	means the Energy Commission, as established under section 1 of Act 541.
"Concession"	means a geographical area assigned exclusively to a utility by the Commission for the purpose of distribution or sale of electricity.
"Concessionaire"	Means owner of a concession
"Distribution System"	means electrical power and energy delivery system consisting of interconnected substations and network facilities operated at voltages of 36 kilovolts or less, located within the boundaries of the Republic of Ghana.
"DSC 1"	means the rate for DISCOs to recover the cost of their distribution network operations
"DSC 2"	means the rate for DISCOs to recover distribution losses
"Residential Communities"	means an area which is primarily a residential community with a minimum capacity of 5MVA, having a name and exact geographical demarcation set apart by the boundaries and has controlled access to the area.
"Greenfield"	An area with no electricity distribution network development
"Industrial park"	means an area or concession planned for the purpose of industrial use only with a minimum capacity of 50MVA
"Manual"	means Licence Application Manual for Service Providers in the Electricity Supply Industry
"Network"	means the plant and equipment used to convey and control the distribution of electricity to customers

“Network Access Agreement”	means an agreement between a distribution utility and a participant engaged in embedded electricity generation or distributed generation services that seek connection of its facilities to the distribution network and sets out the rights, obligations and liabilities of both parties.
“Permit”	Means Siting Permit or Construction Permit issued by the Commission
"Person"	means a body corporate, whether corporation aggregate or corporation sole and an unincorporated body of persons as well as an individual.
“Private Network Developer”	means a Person who owns or intends to own the whole or part of the distribution system within a predefined concession or area.
“Stranded Electricity Capacity”	means an electricity capacity that has been contracted by the concessionaire for the designated area but is not utilised by a private network developer
“Stranded network”	means an already existing network or facility owned by a utility which is unused due to the development of another network or facility by a private network developer.
“TSC 1”	means the rate for GRIDCo to recover the cost of its transmission network operations
“TSC 2”	means the rate for GRIDCo to recover transmission losses
“Utility’s standard and specification”	means standards and specifications of equipment used and accepted by the utility for the operation of the distribution network
“Vesting and Assignment Agreement”	means an agreement signed between the private network developer and the distribution utility that will grant operational control and maintenance of the network to the distribution utility.
“Wholesale Supplier”	means a Person licensed under the Act to install and operate facilities to procure or produce electricity for sale to a bulk customer or an electricity distribution company.

CHAPTER 1

INTRODUCTION

The Guidelines

- 1.1 The Energy Commission was established by an Act of Parliament, Energy Commission Act, 1997 (Act 541), to, among other things, license and regulate the technical operations of service providers in the electricity supply industry. The Commission performs these regulatory functions through inspections, monitoring and enforcement of licensing conditions, technical rules of practice and standards of performance.
- 1.2 These Guidelines are issued by the Energy Commission and are in accordance with Sections 2(2)(e) and 11 of the Energy Commission Act, 1997 (Act 541) and in furtherance to the License and Permits Application Manual for Service Providers in the Electricity Supply Industry.

Purpose of Guidelines

- 1.3 The purpose of these Guidelines is to provide for the Energy Commission's framework for the regulation of private electricity distribution networks developed for industrial parks and residential communities within an existing concession of a distribution utility.

Specifically, the Guidelines provide for the following:

- i general provisions and categories for the development of private electricity distribution networks; and
- ii the requisite permits for the development of private distribution networks and licences for the retail of electricity; and
- iii entities responsible for the operation and maintenance of such private distribution networks.

Applications of the Guidelines

- 1.4 These Guidelines apply to:
 - i Persons who seek to develop private electricity distribution networks for industrial parks and residential communities, and
 - ii Persons licensed by the Commission under the Act for wholesale supply, transmission, distribution, or retail sale of electricity.

Structure of the Guidelines

1.5 The Guidelines are divided into four chapters:

- (a) Chapter 1 covers general provisions for the purpose, structure, and application;
- (b) Chapter 2 provides for the general provisions, categories for the development of private networks, compensation and recovery of investments;
- (c) Chapter 3 deals with the requisite licence and permit; and
- (d) Chapter 4 provides for miscellaneous matters covering the Guidelines review, reporting and mechanism for dispute resolutions.

CHAPTER 2

GENERAL PROVISIONS, COMPENSATION AND RECOVERY OF COST & CATEGORIES OF PRIVATE NETWORKS

General Provisions

- 2.1 The Energy Commission's current regulatory framework allows only licensed distribution utilities to operate the distribution infrastructure within a defined concession.
- 2.2 A Private Network Developer seeking to develop a network and retail electricity within a concession shall apply to the Commission for an electricity retail sale license.
- 2.3 The Commission may issue permits and a Retail Sale license to a Private Network Developer in consultation with the distribution utility that owns the concession.
- 2.4 The Commission shall assess the technical capacity and the ability of the Private Network Developer before the issuance of the retail license.
- 2.5 The development of a private distribution network shall only be permitted in an area with no existing distribution network infrastructure within five kilometres from the proposed private distribution network and the existing distribution infrastructure of the distribution utility in that jurisdiction or area within the concession.
- 2.6 A Private Network Developer shall ensure the safety of the private distribution network and persons directly or indirectly connected and shall adhere to the relevant regulations, codes and operation protocols.
- 2.7 The Private Network Developer shall negotiate and conclude a Power Purchase Agreement with either a wholesale supplier or a licenced distribution utility.
- 2.8 The Private Network Developer shall vest and hand over the operation and maintenance of the network to the licenced distribution utility.
- 2.9 The Private Network Developer shall transfer the ownership of the network to the licenced distribution utility at the expiration period of the retail sale licence issued by the Commission to the private developer.
- 2.10 Despite paragraph 2.9, the retail sale license may be renewed after the expiration in accordance with the Manual.
- 2.11 Renewable energy development is permitted within industrial parks, residential communities and other areas of the concession but with prior approval and acquisition of the relevant license from the Energy Commission.

- 2.12 A Private Network Developer shall not develop any parallel private electricity distribution network to the network of the licensed distribution utility.
- 2.13 No stranded network shall be created as a result of the private network development.
- 2.14 The distribution service charges for the operation and maintenance of the private electricity distribution network in industrial parks and residential communities shall be regulated and treated as part of the distribution network infrastructure of the licensed distribution utility, considering that it is a monopolistic activity. Hence, all requirements pertaining to the economic and technical regulation of such a network shall apply.
- 2.15 The cost of retail electricity shall be de-regulated and shall be determined by the licensed retail utility.

Compensation and Recovery of Cost

- 2.16 The Private Network Developer shall compensate the licensed distribution utility for the already contracted capacity (or stranded electricity capacity) for the proposed concession of the private developer in the case of Brownfields only.
- 2.17 The licensed distribution utility shall submit a proposal to the PURC for the compensation in paragraph 2.16 for consideration and approval by the PURC.

- 2.18 The Private Network Developer shall not compensate the licensed distribution utility for stranded electricity capacity where it offtakes power from the licensed distribution utility.
- 2.19 The private network developer shall submit to the PURC, through the licensed distribution utility, the total cost of the proposed private network development and the proposed rate of return for approval before the commencement of activities relating to the network development.
- 2.20 The PURC shall determine the value of investment and rate of return on investment for the private network developer prior to the development of the network.
- 2.21 The Private Network Developer shall transfer the network to the licensed distribution utility at a residual value to be negotiated between the Private Network Developer and the licensed distribution utility guided by the PURC approved investment parameters in 2.20 at the end of the licence period.

Categories of Private Network

2.22 The development of these networks is grouped into two categories;

1. Brownfield – where a Private Network Developer
 - i. retails electricity in a concession operated by a licensed distribution utility.
 - ii. inherits a retail concession in an existing distribution network embedded in the distribution concession of the licensed distribution utility.
 - iii. offtakes power from the licensed distribution utility or a Wholesale Supplier.
2. (a) Greenfield – where a Private Network Developer
 - i. develops, owns the network and retails the electricity within a concession of a licensed distribution utility.
 - ii. develops a network in accordance with the licensed distribution utility's standards and specifications.
 - iii. offtakes power from a wholesale supplier through the National Interconnected Transmission System.
 - iii. distribution network infrastructure is 5km from the proposed private distribution network to the existing distribution infrastructure of the licensed distribution utility in that jurisdiction or area within the concession.

Obligations of Private Network Developer in a Brownfield

2.23 The Private Network Developer shall obtain a retail sale license from the Energy Commission to sell electricity to customers within the specified retail concession.

2.24 The Private Network Developer shall pay the licensed distribution utility the Distribution Service Charge 1 (DSC 1) and where applicable, Distribution Service Charge 2 (DSC2), as per the PURC gazetted tariff.

2.25 The Private Network Developer shall pay Transmission Service Charge (TSC1), and where applicable, TSC2, to the Grid Company to wheel the power through the National Interconnected Transmission System from a Wholesale Supplier where the Private Network Developer offtakes power from the Wholesale Supplier.

Obligations of Private Network Developer in a Greenfield

2.26 The Private Network Developer shall sign a Vesting and Assignment Agreement with the licensed distribution utility for the operation and maintenance of the network.

2.27 The Private Network Developer shall pay the licensed distribution utility the operation and maintenance component of the Distribution Service Charge, DSC 1, for the Private Network Developer's distribution network.

2.28 The Private Network Developer shall apply and seek approval for a Connection Agreement with the transmission utility where applicable.

2.29 The Connection Agreement shall establish both the rights, obligations and liabilities of the transmission utility and the private network developer.

2.30 The Private Network Developer shall pay transmission service charges, TSC1, to the Grid Company to wheel the power from the wholesale supplier.

2.31 The Private Network Developer shall obtain a retail sale electricity license from the Energy Commission to sell to all customers within the specified retail concession.

CHAPTER 3

LICENSE AND PERMIT OBLIGATION

Guiding Principles for Issuance of Licenses and Permits

- 3.1 The Energy Commission Act, 1997 (Act 541) Section 2(2)(e) and 11 states that **2(2)(e)** “the Commission shall receive and assess applications, and grant licenses under this Act to public utilities for the transmission, wholesale supply, distribution, and sale of electricity and natural gas” and **11** *“Except as expressly exempted under this Act, a person shall not, unless authorised to do so by a license granted under this Act, engage in a business or a commercial activity for (a) the transmission, wholesale supply, distribution or sale of electricity or natural gas.”*
- 3.2 In accordance with the provisions of the Energy Commission Act, 1997 (Act 541), a Licence Application Manual for Service Providers in the Electricity Supply Industry has been developed as a framework for licensing service providers engaged in Wholesale Supply, Electricity Transmission, Electricity Distribution and Electricity Retail Sale.
- 3.3 Whilst permits from relevant regulatory institutions, and local authorities are required to construct any physical structure, the acquisition of such permits does not absolve a person from the requirement to be licensed by the Commission.
- 3.4 Accordingly, a person who seeks to develop a private distribution network shall obtain the necessary Siting and Construction permits and a Retail Sale licence from the Energy Commission.
- 3.5 A breach of the requirements under paragraphs 3.3 and 3.4 is an offence under the Act and may accordingly attract sanction.
- 3.6 The Commission shall also ensure the safe and efficient generation, transmission, distribution and sale of electricity in the power system by establishing and enforcing the following:
- a. standards of safety, reliability and quality in the electricity supply;
 - b. safety and technical standards for electrical installations; and
 - c. standards to ensure efficient electricity end-use practices and promote productive uses of electricity.

Requirement for the acquisition of Siting and Construction Permit

- 3.7 The construction of Bulk Supply Points or a primary substation by prospective Private Network Developers for the offtake of power from the grid should be with the prior written approval of the Commission and preceded by the acquisition of Siting and Construction permits from the Energy Commission in accordance with the Licence and Permits application Manual for service providers in the Electricity Supply Industry.
- 3.8 The Siting Permit ensures that the site selected for the construction undergoes due diligence for environmental, power evacuation and safety concerns.
- 3.9 The applicant will be required to make a presentation to the Commission's Siting Committee, and the Commission shall review the application based on the recommendations of the Siting Committee.
- 3.10 The Construction Permit ensures that the design and construction of the facility are according to standards and compatible with the existing network.
- 3.11 A Private Network Developer shall ensure that the design and equipment meet the minimum acceptable standards in accordance with the National Electricity Distribution Code, National Electricity Distribution Metering Code, the National Electricity Grid Code, and all other relevant codes and regulations;
- 3.12 A Private Network Developer and the licensed distribution utility shall submit reports to the Commission in accordance with licences issued by the Commission.

CHAPTER 4

MISCELLANEOUS PROVISIONS

Submission of Proposal for Review

- 4.1 A proposal for the revision of this Guideline may be made by any relevant stakeholder.
- 4.2 A proposal for the revision of this Guideline shall be submitted in writing to the Commission.
- 4.3 The Commission shall receive and acknowledge every submission in accordance with the Energy Commission Act.
- 4.4 Despite paragraph 4.1, the Commission may initiate the review of the Guideline when necessary.

Process of Review

- 4.5 The Commission shall notify all relevant stakeholders upon receipt of any proposed request for the review of this Guideline.
- 4.6 The Commission shall consider every proposal made to review the Guideline at any time when the Commission commences a review.
- 4.7 The Commission shall, in consultation with relevant stakeholders, review the Guidelines.

Mechanisms for Dispute Resolution

- 4.8 Any disputes relating to the conduct of a Private Network Developer, Retail Sale Utility or Distribution Utility shall be settled by mechanisms outlined in either the National Electricity Distribution Code, the National Electricity Grid Code or any relevant Law.