PUBLIC UTILITIES REGULATORY COMMISSION GHANA

Rate Setting Guidelines

for

Electricity Distribution and Supply

VOLUME 1

MAIN

REVISION 1.4

OCTOBER 2017

PURPOSE, SCOPE, APPLICATION AND REVISION

PURPOSE

The purpose of the guidelines is to set out the principles, methodology and processes for the approval of electricity distribution and supply tariffs by PURC. The guidelines aim to provide PURC with the information it needs to make decisions on tariff adjustments. Finally the guidelines provide industry participants with information to facilitate tariff application and approval processes.

SCOPE AND APPLICATION

The guidelines apply to a Public Utility licensed or authorised under any law to own or operate electricity distribution assets or to provide electricity distribution and electricity supply services in the regulated market in Ghana.

EFFECTIVE DATE, REVIEW AND AMENDMENTS

i. These guidelines shall take effect from September 2017 and revoke all guidelines previously issued by PURC for electricity distribution and supply utilities.

ii. PURC reserves the right to review or add to the guidelines periodically. Review or addition of volumes to the guidelines shall be done in consultation with stakeholders and in accordance with the Act.

iii. Amendments and relaxations to the guidelines may be made only with the approval of the Commission.

APPROVAL PROCESS	
2016	Issue of Electricity Rate Setting Guidelines: Version 1.1 to industry stakeholders
2016	Initial comments received from industry stakeholders
2016 - July 2017	Industry consultation
August 2017	Issue of Version 1.2 to wider stakeholder group
August 2017	Stakeholder consultation and revisions
August 2017	Commission approval of Version 1.3
	Receipt of wider stakeholder comments
	Commission approval of Electricity Rate Setting Guidelines: Version 2
	Publication of Electricity Rate Setting Guidelines: Version 2
	Effective Date

ENFORCEABILITY

These Guidelines are issued as an Order of the Commission and are enforceable in accordance with the Public Utilities Regulatory Commission Act, 1997 (Act 538).

Approved by the Commission on the..... Day of 2017

Signed.....
Chairman, PURC

Signed.....
Executive Secretary, PURC

CONTENT AND STRUCTURE OF DOCUMENT

This document issued by the Public Utilities Regulatory Commission (PURC) constitutes the approved Rate Setting Guidelines for electricity distribution and supply in Ghana. The document is organized as follows:

- Volume 1 –The main volume which is required as part of all other Volumes describes the Tariff Philosophy and Tariff Approval process, including the legal basis and minimum filing requirements underlying the rate setting guidelines for Electricity Distribution and Supply.

- Volume 2 - The Volume 2 which is complementary to Volume 1 sets out the methodology including the formulae and principles for the determination of revenue requirements for Electricity Distribution Network System Operator (EDNSO) by PURC.

- Volume 3 - The Volume 3 which is complementary to Volume 1 sets out the methodology including the formulae and principles for the determination of revenue requirements for Electricity Distribution and Supply by Restructured ECG.

- Volume 4 - The Volume 4 which is complementary to Volume 1 sets out the methodology including the formulae and principles for the determination of revenue requirements for Electricity Distribution and Supply by Northern Electricity Distribution Company (NEDCo) by PURC.

- Volume 5 - The Volume 5 which is complementary to Volume 1 sets out the methodology including the formulae and principles for the determination of revenue requirements for Electricity Distribution and Supply by Enclave Power Company (EPC) by PURC.

- Other Volumes (Volume 6, 7, etc) as developed or amended by the PURC from time to time

This volume is structured as below:

- General Definitions, Abbreviations, Acronyms and Equation Parameters
- Tariff Philosophy including legal basis of the guidelines
- Tariff Methodology including formulae and principles for tariff determination
- Tariff Approval process including minimum filing requirements for tariff determination
- Transitional arrangements
- Appendices

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PART 1: DEFINITIONS AND INTERPRETATION

1.1 Definitions

Term	Definition
Act	Means the Public Utilities Regulatory Commission Act, 1997 (Act 538).
Annual Report	Means an informational filing that sets forth updates of the projections and actual Annual Revenue Requirement and System Operation Plan made by Electricity Distribution Utility.
Applicable Law	Means the laws of Ghana and orders, rules, regulations, directives, codes, decrees, judgments and notifications made pursuant thereto and as modified or amended from time to time.
Approved Rates Methodology	Means the methodology approved by PURC in its Major Tariff Review Decision.
Aggregate Technical and Commercial Losses	Means the difference between the amount of energy delivered to Bulk Supply Points or injected by Embedded Generators to the distribution system and the energy sold to End Users. It is the aggregate of Technical Losses and Commercial Losses. • **Technical losses** are due to energy dissipated in the conductors, transformers and other equipments used for transmission, transformation, sub-transmission and distribution of power. These technical losses are inherent in electricity network system and can be reduced to a certain level. • **Commercial losses** are due to electricity that is delivered mostly for consumption but which is not paid for. They are mainly caused by internal consumption; the illegal abstraction of electricity (energy theft); non metered supplies (such as public lighting); as well as errors in metering, billing and data processing. Additionally, there are errors resulting from the time-lag between meter readings and statistical calculations.
Base Year	Means the year upon which an annual or multiyear tariff projection is based, which may be a historical financial year for which actual results or audited accounts are available. This may also be taken to be a combination of actual and projected results for same financial year or projection of a future financial year.
Bulk Customer	Means a customer certified as such by the Energy Commission
Bulk Supply Point (BSP)	Means high voltage electrical sub-stations in the National Interconnection System that are used by wholesale power suppliers for electricity injections into and/or extraction from the transmission system being the point at which the Distribution System is connected to the transmission system.
Bulk Supply Tariff (BST)	Means the price of the electricity at the Bulk Supply Point. It shall recover the capacity and energy charges of generation and transmission service charges.

Term	Definition
Casualty	Means the complete or partial destruction of property resulting from an identifiable event of a sudden, unexpected, or unusual nature including floods, storms, fires, and accidents and other events that would ordinarily be covered by property and casualty insurance.
Capital Expenses	Means amounts spent by Electricity Distribution Utility to acquire or enhance fixed assets, such as land, buildings, and major equipment. When the asset is ready to be used, the expenditure is added to rate base as a capital addition. The expenditure is then recovered through depreciation over the useful life of the asset.
Collection Loss Ratio	Means a ratio calculated as the difference between the total amount invoiced by a Distribution Utility in respect of Distribution Service and/or Supply Service; and the total amount collected by the Distribution Utility in respect of Distribution Service and/or Supply Service provided.
Commission	Means the Public Utilities Regulatory Commission established under the Public Utilities Regulatory Commission Act, 1997 (Act 538).
Consumer	Means a person or his successor, who purchases, receives or makes use of any service provided by a public utility and who does not deliver or resell the service to others.
Corporate Tax	As stipulated in the Ghana Income Tax Act, 2015 (Act 896) and its amendments.
Cost of Capital	Means the minimum acceptable rate of return on capital investment. It includes both the cost of debt to the Electricity Distribution Utility, and the cost of equity.
Cost of Debt	Means the effective interest rate that Electricity Distribution Utility pays on its current debt to fund its operations.
Cost of Equity	Means the rate of return on investment that is required by Electricity Distribution Utility shareholders.
Country Risk Free Rate	Means the return that an investor can expect on an investment in a country without default risk.
Country Risk Premium	Means the expected return above the Equity Risk Premium that investors require for investing in a country that has higher risk than the country issuing the risk free currency. That is, It reflects the differential risks of investing in a country that has higher risk than the country issuing the risk free currency.
Customer Category	Means a category of End Users described by the nature of their requirements for capacity and energy such as by the voltage at which energy is delivered to them, their maximum demand, their average demand, or other factors, as established by PURC, and "Customer Categories" refers to all of such categories.
Debt Premium	Means a measure of the expected return for additional risk, on top of the risk free interest rate, that the Distribution Utility must pay on its current debt to fund its operations.

Term	Definition
Depreciation	Means a measure of the consumption, use or wearing out of an asset over the period of its economic life. It is the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.
Distribution Business	Means the business of distribution of electric power carried on or to be carried on by Distribution Utility pursuant to and in accordance with terms of Distribution Licence and / or Concession Agreement.
Distribution Licence	Means the licence of that name issued by the Energy Commission.
Distribution Loss	Means the percentage of Total Technical and Commercial Losses established by PURC in the relevant Major Tariff Review Decision.
Distribution Margin	Means the component of revenue requirement comprising operations and maintenance cost, return on rate base, depreciation, corporate tax, regulatory cost including income determined or approved by PURC for running the distribution business.
Distribution Service	Means the distribution of electrical energy by Electricity Distribution Network Systems Operator to End Users using the Distribution System.
Distribution Service Rates	Means the rates chargeable: (a) by Distribution Utility to End Users in respect of Distribution Service provided to them; and (b) by Distribution Utility to Retail Sale Licensees that supply End Users within the Distribution Zone using Distribution Service provided by Electricity Distribution Network Systems Operator.
Distribution System	Means Distribution facilities situated within concession or service area owned or operated by Distribution Utility for distribution of electric power including, without limitation, electric lines or circuits, electric plant, meters, interconnection facilities or other facilities operating at distribution voltage, and including any other electric lines, circuits, transformers, sub-stations, electric plant, interconnection facilities or other facilities determined by PURC as forming part of distribution system, whether or not operating at distribution voltage.
Electricity Distribution Asset Owner	Means the electricity distribution network asset owner, which is the Electricity Company of Ghana Limited.
Electricity Distribution Network System Operator	Means the electricity distribution network system operator, which is the special purpose vehicle formed by private sector participants and awarded the concession for the management of, operation of, and investments in the electricity distribution business of EDNAO.

Term	Definition
End Users	Means consumers of electricity within the Distribution Zone that purchase Distribution Service or Supply Service from EDNSO or that are supplied by a Retail Sale Licensee that purchases Distribution Service from EDNSO on their behalf.
Equity Risk Premium (Market Risk Premium)	Means a measure of the expected return, on top of the risk – free rate, that an investor would expect for a portfolio of risk – bearing assets. This captures the non – diversifiable risk that is inherent to the market.
Equity Yield	Means a measure of return on an investment's equity portion calculated as the ratio of earnings in relation to the amount of equity invested.
Exchange Rate (GHS/US Dollars)	Means the Average Daily Inter Bank Foreign Exchange Rate between the Ghana Cedi and US Dollar published by the Bank of Ghana over the 20 Business Days preceding the relevant date of determination.
Ghana CPI	Means the consumer price index published by the Ghana Statistical Service.
Key Performance Indicators	As stipulated in the Distribution Licence and / or Concession Agreement.
Indexation	Means the adjustment of an economic variable so that the variable rises or falls in accordance with an index (such as the rate of inflation).
Initial Regulated Asset Base	Means the Opening RAB for Regulatory Year '1' of Regulatory Control Period '1' shall equal the Transfer Date Moveable Property Purchase Price.
Investment Programme	Means Electricity Distribution Network System Operator proposed investment in equipment, facilities and infrastructure with a view to improving or ensuring efficiency in provision of service to Consumers.
Major Tariff Review Decision	Means a written decision by PURC in response to a Major Tariff Review Proposal from the Distribution Utility.
Major Tariff Review Determination Date	Means the date on which a Major Tariff Review Decision is issued by PURC.
Major Tariff Review Proposal	Means a detailed submission filed by Electricity Distribution Utility to the Commission in accordance with Sections 16, 18, 21 and 22 of ACT 538, requesting for rates chargeable for a new service or revision of existing rates chargeable for the provision of Electricity Utility Distribution and / or Supply Services.
Opening Regulated Asset Base (RAB), subsequent control periods	Means the Opening Regulated Asset Base after the first Control Period as of the beginning of Regulatory Year '1' of the upcoming Regulatory Control Period immediately following the issuance of a Major Tariff Review Decision (Regulatory Control Period 'c'), which Opening Regulated Asset Base shall be based on the historical cost of the Regulated Asset Base.

Term	Definition
Operating Expenses (OpeX)	Means the costs incurred by the Distribution Utility to provide day to day distribution services to its customers such as operating expenditure, repairs and maintenance expenditure, staff costs, overheads and other non-capital expenditure.
Portfolio Capacity & Energy Charge	Means the sum of: 1. any capacity payment, availability payment, or similar payment in respect of capacity made available pursuant to a power purchase agreement; 2. any energy charge, fuel charge, variable operations and maintenance charge, or similar charge in respect of electricity delivered pursuant to a power purchase agreement and / or supply agreement
Major Tariff Review Notification	Means a notice to PURC, in the form specified by PURC, of Electricity Distribution Network System Operator's intention to file a Major Tariff Review Proposal.
PURC	Public Utilities Regulatory Commission established under the Public Utilities Regulatory Commission Act, 1997 (Act 538)
PURC Rate Setting Guidelines	Means the rate setting guidelines established by PURC, of which this Volume is a part.
Quarterly Report	Means an informational report that contains updates of the projections on actual USCPI, Exchange Rates and System Operation Plan made by the Distribution Utility.
Rates	Means Distribution Service Rates and Supply Service Rates.
Regulatory Asset Base (RAB)	Means the value ascribed by the PURC to the capital employed in the licensee's regulated distribution services business.
Regulated Market	Means customers located within a Distribution network and supplied by a Distribution Utility and excludes Bulk Customers
Regulatory Control Period	Means five consecutive Regulatory Years occurring during the Term of the Distribution Licence and / Concession Agreement.
Regulatory Quarter	Means a designated consecutive three months period of operations, for which the approved tariffs shall applyduring the Term of the Distribution Licence and / Concession Agreement.
Regulatory Year	Means a designated consecutive twelve months period of operations, for which the approved tariffs shall applyduring the Term of the Distribution Licence and / Concession Agreement.
Retail Sale Licence	Means a licence to supply energy to End Users in accordance with the Energy Commission Act, 1997 (Act 541).

Term	Definition
Return on Debt	Means the effective interest rate that Electricity Distribution Utility must pay on its current debt to fund its operations.
Return on Equity	Means the financial return achieved by shareholders in electricity distribution licensee during a regulatory control period. The return is measured using revenue and cost definitions contained and are expressed as a percentage of (share) equity in the electricity utility business. The aim of the Return on equity measure is to provide an indication of the return achieved by the owners of a distribution utility licensee which can be compared to the cost of equity originally allowed revenue requirements and to the return achieved by other licensees on an equivalent basis.
Revenue Requirement	Means the costs pertaining to the Electricity Distribution and Supply Licence / Concession Agreement which are permitted, to be recovered from the tariffs and charges determined by the Commission in accordance with the applicable Rate Setting Guidelines for Electricity Distribution and Supply Service.
Revenue Requirement (EDNSO)	Means the costs pertaining to the EDNSO Licence / Concession Agreement which are permitted, to be recovered from the tariffs and charges determined by the Commission in accordance with the applicable Rate Setting Guidelines for Electricity Distribution and Supply Service.
Revenue Requirement (Supply)	Means the costs pertaining to the Electricity Supply Licence / Concession Agreement which are permitted, to be recovered from the tariffs and charges determined by the Commission in accordance with the applicable Rate Setting Guidelines for Electricity Distribution and Supply Service.
Risk Free Rate	Means the rate of return that an investor would expect to earn on a "riskless" asset.
Risk Premium	Means a measure of the expected return, on top of the risk – free rate, that an investor would expect or demand to move from an investment with no risk to one with risk.
Supply Service	Means the supply and sale of electrical energy to End Users by EDNSO.
Supply Service Rates	Means the rates chargeable by Distribution Utility to End Users in respect of Supply Service provided to them

Term	Definition
System Operation Plan	Means a detailed plan for system operation (to be developed through such consultations with Electricity Generation and Transmission Utilities as is deemed necessary by the Distribution Utility), which specifies the capacity and energy that the Distribution Utility anticipates procuring from each generator based on a long term load forecast for End Users supplied by the Distribution Utility, and a long term forecast of the generation resources expected to be available to supply the forecast demand with adequate reserve and considering system constraints. Such plan shall include an optimization function designed to minimize overall generation and transmission costs while complying with the performance standards that apply to Distribution Utility under Applicable Law, the Distribution Licence, and the Sale Licence.
Target Aggregate Technical and Commercial Loss Ratio	Means the percentage of Technical and Commercial Losses established by PURC in the relevant Major Tariff Review Decision.
Target Collection Loss Ratio	Means the percentage of Collection Loss established by PURC in the relevant Major Tariff Review Decision.
Tariff Equalization Mechanism	Means a mechanism through which tariffs are equalised by managing collection and payment between High and Low Cost Distribution Utilities with a view to ensuring recovery of revenue requirements as per each Distribution Utility
Tariff	The schedule of rates chargeable for the services provided by a public utility
Tariff Period	Means a period, in a designated number of years, for which the approved tariffs shall apply.
Tariff Proposal	An application filed by a public utility requesting approval for new or revised rates in respect of a service it provides to consumers.
Term	The period beginning on the date on which the last of the Transaction Agreements are executed and delivered by the parties thereto and continuing, unless extended or terminated earlier in accordance with the provisions of the Distribution Licence and/or Concession Agreement, until the 20th anniversary of the Transfer Date or until the Buy-Out Date.
Transmission Cost	Means the sum of all charges payable to the Electricity Transmission Utility in respect of the transmission of electricity from generators to the Bulk Supply Points.
US CPI	Means Consumer Price Index as published by US Bureau of Labour Statistics on a specific date
US Risk Free Rate	Means the yield to maturity on 10-year US Treasury bonds when estimating the cost of equity in US Dollars.
Volume	Means this volume of the PURC Rate Setting Guidelines.

Term	Definition
Weighted Average Cost of Capital (WACC)	The rate which the Distribution Utility on average is expected to pay to all its security holders to finance its assets. In other words, WACC is average of cost of equity and debt, weighted by proportions of equity and debt which an efficiently financed company can be expected to use to fund its activities.
Working Capital Allowance	Means the amount of cash required to meet cash needs for cover day-to-day operations between the time expenditures were made by the Electricity Distribution Utility to provide service and when revenue were received in return for those services. This exclude utility plant in service or the amount of funds which Electricity Distribution Utility needs to maintain supply inventories, meet prepayment obligations, corporate tax, etc.`

1.2 Abbreviations and Acronyms

ARR	Annual Revenue Requirement
ASC	Ancillary Service Charge
BGC	Bulk Generation Charge
CPI	Consumer Price Index
DISCOs	Distribution Utilities
DSC	Distribution Service Charge
DWC	Distribution Wheeling Charge
EC	Energy Commission
ECG	Electricity Company of Ghana
EDNAO	Electricity Distribution Network Asset Owner
EDNSO	Electricity Distribution Network System Operator
ERSL	Electricity Retail Sale Licensees
EUT	End User Tariff
GRIDCo	Ghana Grid Company
IPP	Independent Power Producer
KPI	Key Performance Indicator(s)
KVA	Kilovolt Ampere
kWh	Kilowatt-Hour
LIBOR	London Interbank Offered Rate
LP	Lease Payments
PCEP	Portfolio Capacity and Energy Payments
PURC	Public Utilities Regulatory Commission
RAB	Regulated Asset Base
TSC	Transmission Service Charge
TATCLR	Target Aggregate Technical and Commercial Loss Ratio
TCLR	Target Collection Loss Ratio
USCPI	Consumer Price Index (All Urban Consumers) published by the US Bureau of Labour Statistics
WACC	Weighted Average Cost of Capital
WCA	Working Capital Allowance

1.3 Interpretations

In these guidelines:

1. Capitalized terms shall have the meanings assigned in the Definitions;
2. Capitalized terms used but not defined shall have the meanings assigned in the Act where the context demands;
3. References to the masculine gender include the feminine and vice versa;
4. References to the singular include the plural and vice versa where the context demands;
5. References to a statute include a reference to any regulations or orders made under or pursuant to it;
6. Where a value is expressed in nominal terms, it is expressed in terms of prices in the year in which the amount is or will be expensed, received, realised, or incurred; and
7. Where a value is expressed in real terms, it is expressed in terms of prices at a particular and constant point in time (such as the average of prices in a reference year or at a particular point in time during a reference year).

PART 2: TARIFF PHILOSOPHY

2.1 Preamble

In exercise of the powers conferred on the Public Utilities Regulatory Commission under Sections 3(a), 3(b) and 16 of the Public Utilities Regulatory Commission Act, 1997 (Act 538), these guidelines are issued to set out the methodology and processes for the approval of end user tariffs chargeable by electricity distribution and supply utility companies.

2.2 Statutory Provisions

The following provisions of the Act specifically require PURC, in preparing guidelines and approving rates, to take into consideration the objectives below:

Relevant Section of Act 538	Objective
16 (3) (a)	Consumer interest
16(3) (b); 3(c)	Investor / Utility interest
16(3)(c)	Assuring reasonable cost of production of the service
16(3)(d)	Assurance of the financial viability of the Public Utility
20(1)	Uniformity of prices throughout the country
20(1)(a)	Population distribution
20(1)(b)	Best use of natural resources
20(1)(c)	Economic development of the country
20(2)	Different rates for different consumer classes

The processes and methodologies provided in these guidelines are informed by the above objectives in satisfaction of the statutory requirements, as explained more fully below:

- **Consumer interest**: Assurance of value for money in terms of price, quality and reliability; maintaining an optimum balance between affordability and availability of service; fair apportionment of total cost of supply to various classes of consumers; provision of a minimum level of service (lifeline supply) at an affordable price to a specified category of residential customers; ensuring long term availability of service.

- **Investor/Utility interest**: Allowance for an appropriate rate of return on investments to ensure ability of the Utility company and its investors to recover operational and capital expenditure and earn a reasonable return.

- **Reasonable cost of production**: Examination of the cost of production against agreed key performance indices and efficiency benchmarks to exclude unreasonable or inefficient costs.

- **Financial viability:** Allowance for prudent costs as pass-through costs with provision for reasonable return on investment. This includes prudent power purchase costs and provision of adequate revenue for sustainability of the business.

- **Uniformity of prices and population distribution**: Allowance for a tariff structure which incorporates uniform rates for all customers within a particular category of consumers regardless of geographic location, and incorporates different rates for different consumer categories in accordance with cost of service.

- **Economic development of the country**: Allowance for "special rates" for priority consumers whose activities may enhance economic development.

2.3 Regulatory Philosophy

2.3.1 General Regulatory Philosophy

The regulatory philosophy underlying these guidelines revolves around two key issues.

1. Recovery of efficient and prudently incurred costs of supply of electricity to end consumers with a view to ensuring recovery of the Utility company's revenue requirement; and

2. Provision of proper economic signals through multi-year tariff reviews and annual and quarterly adjustments which recognise existing infrastructure, to maintain the alignment of revenues and prices with trends in costs, taking into account the social and cultural environment.

In this regard, PURC shall employ a joint approach, which combines the determination of the revenue requirements with a PURC and EC-approved penalty regime for failure to achieve key performance indicators prescribed under law or under the distribution or supply licence.

The tariff methodology is based on the following objectives:

1. Implementation of cost recovery tariffs, by providing the Utility the opportunity to achieve both a regulated revenue requirement and a fair rate of return.

2. Introduction of pass-through mechanisms for timely recovery of pass through costs.

3. Development of effective regulatory policies to help provide needed capital to implement capital investment programmes and secure efficient system expansion in electricity distribution.

4. Development and implementation of an appropriate tariff structure to better track technical and economic characteristics of consumption and associated costs of servicing different customer categories.

5. Fair allocation of total cost of supply to various classes of consumers.

6. Allowance for a tariff structure which incorporates uniform rates for all customers within particular category of consumers regardless of geographic location.

7. Commitment to NPV Revenue Neutrality as mandated by Section 16 3(a); 3(b) and 3(c) of PURC Act, 1997 (Act 538) and reflected in the methodologies for recovery of both over and under recovery of Distribution Business revenue requirement and Retail Sale Business revenue requirement.

2.3.2 Return on Pass-Through Cost

A Utility shall not earn a return on any pass-through cost.

2.3.3 Tariff Equalisation Mechanism

Approved End-User tariff payable by Consumers in the Regulated Electricity Market shall be uniform across Ghana. However, since Distribution and Retailing Costs vary according to Density of Customers on each Electricity Distribution Utility's network and geography of distribution area, tariff revenue determined on the basis of aggregate costs shall be reallocated from Lower Cost Electricity Distribution Utility/Utilities and Electricity Retail Sale Licensee, to Higher Costs Electricity Distribution Utility/Utilities and Electricity Retail Sale Licensee/Licensees with a view to preserving Government Uniform End User Electricity Tariff. Details of the Tariff Equalisation Mechanism for Electricity Distribution Utilities and Electricity Retail Sale Licencees are presented in Table 2-1.

Table 2-1 Tariff Equalisation Framework for Electricity Distribution Utilities and Electricity Retail Sale Licensees

TARIFF CATEGORY	NewCo ECG PSP	NEDCo	Enclave Power	New ECG	Other Disco PSP
DISTRIBUTION NETWORK OWNER (DNO)	DNO Tariff Rev (GHp/kWh) $_{NewCo}$ minus DNO Cost (GHp/kWh) Uniform	DNO Tariff Rev (GHp/kWh) $_{NEDCo}$ minus DNO Cost (GHp/kWh) Uniform	DNO Tariff Rev (GHp/kWh) $_{ENCLAVE}$ minus DNO Cost (GHp/kWh) Uniform		DNO Tariff Rev (GHp/kWh) $_{OtherPSP}$ minus DNO Cost (GHp/kWh) Uniform
DISTRIBUTION SYSTEM OPERATOR (DSO)	DSO Tariff Rev (GHp/kWh) $_{NewCo}$ minus DSO Cost (GHp/kWh) Uniform	DSO Tariff Rev (GHp/kWh) $_{NEDCo}$ minus DSO Cost (GHp/kWh) Uniform	DSO Tariff Rev (GHp/kWh) $_{ENCLAVE}$ minus DSO Cost (GHp/kWh) Uniform		DSO Tariff Rev (GHp/kWh) $_{OtherPSP}$ minus DSO Cost (GHp/kWh) Uniform
RETAIL SUPPLY BUSINESS (RSB)	RSB Tariff Rev (GHp/kWh) $_{NewCo}$ minus RSB Cost (GHP/kWh) Uniform	RSB Tariff Rev (GHp/kWh) $_{NEDCo}$ minus RSB Cost (GHP/kWh) Uniform	RSB Tariff Rev (GHp/kWh) $_{ENCLAVE}$ minus RSB Cost (GHP/kWh) Uniform	RSB Tariff Rev (GHp/kWh) $_{NewECG}$ minus RSB Cost (GHP/kWh) Uniform	RSB Tariff Rev (GHp/kWh) $_{OtherPSP}$ minus RSB Cost (GHP/kWh) Uniform

Note:
1. Negative value, resulting from calculations in Table 6-1 above implies an Electricity Distribution Utility or an Electricity Retail Sale Licensee will receive funds from the Tariff Equalisation Pool to meet shortfall in its Tariff revenue
2. Positive value, resulting from calculations in Appendix-4 above implies an Electricity Distribution Utility or an Electricity Retail Sale Licensee will transfer receive funds into the Tariff Equalisation Pool

2.3.3.1 Responsibility for Management of Tariff Equalisation Mechanism

The Independent System Operator (ISO) shall be responsible for the Tariff Equalisation Mechanism by managing collections and payments between Lower Cost Electricity Distribution Utility/Utilities and Electricity Retail Sale Licensee/Licensees on one hand and Higher Costs Electricity Distribution Utility/Utilities and Electricity Retail Sale Licensee/Licensees on the other hand. These payments shall be made into and out of an Equalisation Pool established for reallocation of payments with view to ensuring recovery of revenue requirements as per each Electricity Distribution Utility and Electricity Retail Sale Licensee.

PURC shall monitor payments into and reallocation from the Equalisation Pool and may reset equalization payments during periodic tariff reviews.

2.3.4 Electricity Distribution Infrastructure Costs

A distribution margin shall be paid to a Utility which distributes and carries out retail sale of electricity to customers to cover the total electricity distribution cost. The total electricity distribution cost shall be determined based on the regulated Revenue Requirement of the Utility. The Revenue Requirement shall include the following:

1. Capital investments Costs
2. Standard costs of operating and maintaining distribution system
3. Other Fixed Charge (Service Charges)

The regulated Revenue Requirement shall be such as to allow a reasonable Rate of Return on net re-valued fixed assets of the Utility.

2.4 Regulatory Tariff Period

PURC shall implement a multi-year tariff with a 5-year control period with minor periodic adjustments within the control period and major adjustments thereafter.

2.5 Schedule of Tariff Submission and Tariff Determination Process

PURC shall establish and maintain a schedule detailing the timeline for submission, determination and notification of annual and multi-year tariff processes. The schedule shall be consistent with the Act.

2.6 Reporting Requirements

A Utility shall submit to PURC annual and quarterly reports to PURC as provided below, describing and justifying actual investment approved by PURC.

2.6.1 Annual Report

Not later than 90 days prior to the start of each Regulatory Year other than the first Regulatory Year during the Term of the Lease & Assignment Agreement, a Utility shall submit an annual report to PURC. The annual report shall include but not be limited to the following information:

a. Updates of the projections and System Operation Plan made by the Utility

b. Annual Revenue Requirement (Supply) for a Regulatory Year, including

- Detailed estimate of the Portfolio Capacity & Energy Payment for each month occurring during such Regulatory Year
- Actual Operating Expenses
- Actual Depreciation on Regulated Asset Base
- Actual Corporate Taxes incurred
- Actual Annual Revenue Requirement
- Actual revenue earned by a Utility by providing Distribution Service and Supply Service

c. Actual Collection Loss Ratio achieved

2.6.2 Quarterly Reports

Not later than 30 days prior to the start of each Regulatory Quarter, a Utility shall submit a quarterly report to PURC. The quarterly report shall include but not be limited to the following:

a. Updates of the projections and System Operation Plan made by the Utility with respect to Regulatory Quarter 'q' which occurs during Regulatory Year 't';

b. an Approved Financial Model that has been updated to adjust the Annual Revenue Requirement for the Regulatory Year during which Quarter 'q' occurs by correcting:

- for the differences between the projections of USCPI used to convert real values as of the date of a Major Tariff Review Decision to nominal values; and the actual USCPI
- for the differences between the projected Exchange Rates used to convert Cedi to US Dollars in a Major Tariff Review Decision and updated projections of the Exchange Rates

PART 3: TARIFF APPROVAL PROCESS

3.1 Filing Requirements for Major Tariff Review

The submission of a Major Tariff Review Proposal by a Public Utilityto PURC shall be within the timeframe specified in this Section.

3.2 Pre-filing Major Tariff Review Notification

The Utility shall serve a pre-filing notification to PURC at least 60 days prior to the start of each Regulatory Control Period.

3.3 Filing of Major Tariff Review Proposal

Within 14 days after serving a pre-filing notification, the Utility shall file its Major Tariff Review Proposal with PURC in accordance with the Filing Forms.

The proposal shall be signed by the principal officer of the Utility or his authorized representative. Each page of the proposal and annexures shall be initialed by the principal officer or his authorized representative. The proposal and all requisite data shall be submitted in one package, notwithstanding the size of the package.

3.4 Content of Major Tariff Review Proposal

A Utility shall submit the following information to PURC together with its tariff proposal:

a. Business Plan

A business plan that describes the Utility's proposed plan and priorities for the operation of its business during the upcoming Regulatory Control Period. The business plan may be in any format deemed suitable by the Utility but shall contain a list of its priority focus areas during the upcoming Regulatory Control Period. Such priorities may include:

i. improving the performance of the Distribution System, as measured by the standards of performance;

ii. connecting new customers during the Regulatory Control Period;

iii. the reduction of losses (technical, commercial and collection);

iv. improvements in relation to operational, technical, commercial, financial, staffing, labour, environmental and health and safety matters;

v. minimizing the energy purchasing costs subject to performance standards as established in the Applicable Law, the Distribution Licence, and the Sale Licence; and

vi. the efficient use of capital investments,

and shall include any additional or different priorities notified to the EDNSO by the PURC.

b. Investment Plan

An investment plan to upgrade and expand distribution assets and facilities, with a view to improving the efficiency and/or performance of the Utility. The investment plan shall include cost-benefit analyses and payback periods informing the plan. It shall include complete details of construction, financing and other activities to be executed by the Utility during the tariff period, to:

i. connect and serve new End Users within the Distribution Zone;

ii. maintain or enhance the quality of technical and commercial service provided to End Users within the Distribution Zone in accordance with the standards of performance;

iii. reduce system losses (both technical and commercial) and collection losses; and

iv. improve the information technology, operations technology, and business support processes and systems used by the Utility in the conduct of its business.

PURC shall review the investment plan to determine whether to allow or disallow such investments in the determination of the Utility's revenue requirement.

A Utility shall also submit details of actual investments to be made during each year of the tariff period, actual transfer of assets from Capital Work In Progress (CWIP) to Gross Fixed Assets in Operation (GFAIO)) to enable PURC to make the necessary adjustments to relevant components.

The investment plan shall be approved by PURC.

c. Corporate Data

Corporate Statistics shall be submitted per the PURC Filing Forms.

d. Cost of Power

Information on cost of power purchased or to be purchased from various generation sources and the cost of transmission of the power including associated cost of losses to the Utility.

e. Initial Regulated Asset Base

The Utility's calculation of the Initial Regulated Asset Base for the upcoming Regulatory Control Period, with the details necessary to enable PURC to verify the Utility's calculation.

f. Annual Revenue Requirement

The Utility's calculation of Annual Revenue Requirement for each Regulatory Year occurring during the upcoming Regulatory Control Period. This shall include a calculation in respect of each such Regulatory Year of:

i. Operating Expenses, with evidence of the prudency of the Operating Expenses;

ii. Return on Regulated Asset Base;

iii. Depreciation on Regulated Asset Base;

iv. Working Capital Allowance; and

v. Corporate Taxes,

and all of the related components, with the detail necessary for PURC to verify the calculation by the Utility of the Annual Revenue Requirement.

g. Economic and Financial Data

The following Economic and Financial Data shall also be submitted with the tariff proposal

a) Estimates of the Capital Expenses, Operating Expenses, Return on Regulated Asset Base, Depreciation on Regulated Asset Base, Working Capital Allowance, and Corporate Taxes contained in the tariff proposal. These shall be stated both in real terms in US Dollars as of the date of filing of the tariff proposal, and converted to nominal values using projections of the USCPI.

b) Projections of USCPI shall equal the latest inflation forecasts published by the U.S. Federal Reserve, for the periods over which such forecasts are available, and the inflation target of the U.S. Federal Reserve for the periods over which such forecasts are not available.

c) Values that are stated in Cedis and converted to US Dollars shall be converted using projections of the Exchange Rate (Dollars).

d) Projections of the Exchange Rate (Dollars) shall be determined by reference to:

   i. previous Exchange Rate (Dollars);

   ii. the latest inflation forecasts published by the U.S. Federal Reserve, for the periods over which such forecasts are available, and the inflation target of the U.S. Federal Reserve for the periods over which such forecasts are not available; and

   iii. the inflation target of the Bank of Ghana.

h. Capacity and Energy Projections, Balancing, and Priority Dispatch

The tariff proposal shall set forth projections of the quantity of capacity and energy theUtility will sell to End Users that purchase both Distribution Service and Supply Service from the Utility, along with a System Operation Plan.

i. Technical and Commercial Loss Ratios

The Utility shall submit Technical and Commercial Loss Ratios proposed by the Utility and approved by PURC.A Utility shall submit details of immediate prior year monthly and accumulated distribution losses as well as details and explanations of causes and/or reasons for distribution losses. ***Approved PURC Aggregate Technical, Commercial and Collection losses as well as other Performance-Based Indicators for an annual or multi-year tariff review shall be based on Annual Performance Report filed under PURC Performance Standard (Distribution) Rules, 2005.***

j. Other Technical Data

A Utility shall also submit the following data to the PURC:

1. Demand Forecasts
2. Load Factors
3. Consumer Category Wise Load Factors
4. Asset register
5. Details of immediate prior year's monthly and accumulated distribution losses along with break up of technical and non-technical losses
6. Details and explanations of causes and/or reasons for distribution losses
7. Power outage statistics by customer category
8. Power factor, voltage and frequency compliance at Bulk Supply Points
9. Other information that may be relevant for the administration of these guidelines.

k. Electricity Supply Plan

A Utility shall submit a 5-year Electricity Supply/Procurement Plan based on Power Purchase Agreements entered into between the Utility and electricity generation companies by month, by power plant and by fuel type which is appropriate for annual or multi-year tariff review.

PURC shall review and approve the Electricity Supply/Procurement Plan. PURC shall review the Electricity Supply/Procurement annually and provide analysis and recommendations for revision over the remaining years of the plan.

A Utility requesting determination of rate base for an annual consumer-end electricity tariff review or a multi-year consumer-end electricity tariff review may include a rolling 5-year forward year Electricity Supply/Procurement Plan derived from the rolling 5-year forward generation, transmission and distribution expansion plan.

The rolling 5-year Electricity Supply/Procurement Plan shall be reviewed by PURC in consultation with stakeholders during tariff hearings and PURC shall prepare an evaluation report. Prior to the hearings PURC shall review the planvis-a-vis allocation to various consumer categories under PURC rate setting.

I. Revenue Requirement Cost Data

The revenue requirement of a Utility shall be determined using cost data submitted by the Utility. The Utility may also be required to submit additional data and information as and when required. Costs deemed by PURC as imprudent costs shall not be included in determination of the revenue requirement.

3.5 Preliminary Review

Upon receipt of a Major Tariff Review Proposal, PURC shall review it for compliance with the Filing Forms and information requirements.

3.6 Rejection and Re-filing

PURC shall accept or reject the proposal and notify the Utility of its comments or reasons for rejection. Where a proposal is rejected, Utility shall within fourteen (14) calendar days of receipt of the notification, respond to the reasons for rejection and file a revised proposal.

3.7 Publication and Hearings

Where PURC accepts the filing of a proposal, it shall direct a Utility to publish a summary of theproposalin the print media and carry out public education on the contents of the proposal. The publication and public education shall commence at least7 days before any stakeholder hearings or engagements are held on the proposal.

PURC shall give stakeholders the opportunity to comment on the proposal through practicable measures. In respect of each proposal accepted by PURC, PURC shall publish an Order stating the measures to be used, which may include a call for papers, public hearings and stakeholder engagements.

3.8 Formal Review of Major Tariff Proposal

Where PURC accepts the filing of a proposal it shall commence a formal investigation of the proposal submitted and determine whether any expenditure incurred or to be incurred by the Utility is justified and reasonable in order to determine the reasonableness of the proposal.

The investigation of a proposal shall be by way of Formal Hearing. Matters to be investigated at a Formal Hearing on a Major Tariff Review Proposal shall include:

- investment plan
- cost of capital
- depreciation
- operating expenses
- working capital
- corporate tax
- any other component of the cost of service.

3.9 Decision on Rates

Within 30 days of acceptance of a Major Tariff Review Proposal, PURC shall issue a Major Tariff Review Decision. The Major Tariff Review Decision shall state the following:

a) Initial Regulated Asset Base for the upcoming Regulatory Control Period

b) Annual Revenue Requirement for each Regulatory Year occurring during the upcoming Regulatory Control Period, including, in respect of each such Regulatory Year:

   i. Operating Expenses, determined in accordance with the principle of prudence;

   ii. Return on Regulated Rate Base;

   iii. Depreciation on Regulated Asset Base;

   iv. Working Capital Allowance;

   v. Corporate Taxes;

   and all of the related components, stated in nominal US Dollars;

c) Capital Expenditures approved for each Regulatory Year occurring during the upcoming Regulatory Control Period, stated in nominal US Dollars

d) Inflation projections used to convert values stated in real terms into nominal terms, and the forecasted Exchange Rates (US Dollars) used to convert between Cedi and US Dollars.

e) Approved Rates Methodology;

f) Technical and Commercial Loss Ratios that will apply to each Customer Category during each Regulatory Year occurring during the relevant Regulatory Control Period;

g) Lead and Lag Days that will apply during each Regulatory Year occurring during the relevant Regulatory Control Period; and

h) Distribution Service Rates and Supply Service Rates, in each case:

3.10 Publication of Rates

PURC shall inform the Utility of the Major Tariff Review Decision and cause it to be published in the Gazette and print media.

In the event that PURC fails to issue a Major Tariff Review Decision by the date required by these guidelines, then the Rates in effect immediately prior to the deadline for the issuance of the Major Tariff Review Decision shall be adjusted each quarter by the Consumer Price Index published by the Ghana Statistical Service and shall remain in effect until the date PURC issues a Major Tariff Review Decision.

3.11 Petition for Review of Major Tariff Review Decision

Upon publication of a Major Tariff Review Decision, a Utility may if aggrieved by the decision, file a petition with PURC requesting a review of the decision. The petition shall be filed within ten (10) days following the date of publication of the Major Tariff Review Decision.

A petition shall be heard in accordance with the Formal Hearing procedures and shall be resolved within ten (10) days from its filing, following which all administrative remedies are exhausted.

3.12 Communication

At the time of filing its Major Tariff Review Proposal, a Utility shall simultaneously file with PURC its plans for undertaking public communication exercises prior to and following the Major Tariff Review Decision on key issues raised in its Major Tariff Review Proposal and the Major Tariff Review Decision.

3.13 Pre-Tariff Approval Communication

As part of its pre-Major Tariff Review Decision communication plans, a Utility shall utilize electronic, print and other media to sensitise consumers on key issues raised in its proposal including reasons and justification for the proposal.

3.14 Post-Tariff Approval Communication

As part of its post-Major Tariff Review Decision communication plans, a Utility shall engage consumers on the approved tariffs and planned application of tariff revenues to address or improve the quality of service delivery.

PART 4 - TRANSITIONAL ARRANGEMENTS AND RELATED ISSUES

The view of PURC is that a variation or relaxation of PURC established benchmark parameters is likely to result in increased cost for consumers, especially if such variation or relaxation is an upward adjustment in established levels of the benchmarks. In light of foregoing, in connection with any future decision by the owner(s) of a Public Utility to restructure or reorganise the Public Utility under a defined Model or Agreement, any costs associated with the restructuring or re-organisation of a Public Utility shall be considered as transition costs. Since a restructuring or re-organisation is not intended to result in increases in tariffs payable by consumers, such transition costs shall not be passed on to consumers but recovered under an arrangement between the owner(s) and operator(s). However, PURC has maintained the view that only prudently incurrent transaction costs shall be considered.