PUBLIC UTILITIES REGULATORY COMMISSION

Rate Setting Guidelines for

Quarterly Adjustment of Natural Gas, Electricity and Water Tariffs

November 2022

CONTENT AND STRUCTURE OF DOCUMENT

This document issued by the Public Utilities Regulatory Commission (PURC) constitutes the approved Guidelines for Quarterly Adjustment of Natural Gas, Electricity and Water Production, Transmission, Distribution and Supply Tariffs by PURC in Ghana. The application of the guidelines is intended to assist the Commission maintenance the real values of Approved Natural Gas, Electricity and Water Tariffs under a Major Tariff Review. The document is organized as follows:

- Part 1 - General Definitions, Abbreviations and Acronyms
- Part 2 - Tariff Philosophy including Legal Basis of the Guidelines
- Part 3 - Methodology for Quarterly Adjustment of Natural Gas, Electricity and Water tariffs
- Part 4 - Decision Variables, Over and Under Recoveries and Trigger Conditions

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PURPOSE, SCOPE, APPLICATION AND REVISION

Purpose

The purpose of the guidelines is to set out the principles, methodology and processes for the approval of natural gas, electricity and water production, transmission, 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 with respect to determination and approval processes of natural gas, electricity and water tariffs on quarterly basis.

Scope and Application

The guidelines apply to Public Utilities licensed or authorised under any law to own or operate natural gas, electricity and water production, transmission, distribution and supply assets with a view to providing electricity, natural gas and water services in the regulated natural gas, electricity and urban water supply markets in Ghana. .

Effective Date, Review, Additions and Amendments

i. These guidelines shall take effect from ……. 2022 and revoke the revised automatic adjustment guidelines and notes previously issued by the Commission.

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

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

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.....30th..... Day of .....November..... 2022

Signed.....

Mr. Ebo B. Quagrainie

Chairman, PURC

Signed.....

Dr. Ishmael Ackah

Executive Secretary, PURC

PART 1: DEFINITIONS AND INTERPRETATION

1.1 Definitions

TERM	DEFINITION
Act	Means the Public Utilities Regulatory Commission Act, 1997 (Act 538).
Base Regulatory Quarter	Means a three full calendar month period commencing the first day of first full month through the last day of the third consecutive full month during which Approved Natural Gas, Electricity and Water Tariffs payable by end users shall be effective.
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.
Customer	Means a person who contracts to purchase a service from a public utility
Decision Variables	Means the Commission's adopted Dummy Variables, A1 and A2 which assume values of 0 and 1. A value of zero (0) implies no adjustment to affected cost while a value of one (1) implies adjustment to an affected cost using either Consumer Price Index (CPI) or Ghana Cedi-US Dollar Exchange Rate
Depreciation	Means a measure of the consumption, use or wearing out of generation/ production, transmission and distribution an asset over the period of its economic life.
Distribution Service	Means the distribution of electrical energy by Electricity Distribution Network Systems Operator to End Users using the Distribution System.
Distribution Service Charge	Means the rates chargeable by Distribution Utility to End Users in respect of Distribution Service provided to them.
End Users	Means consumers of electricity within the Distribution Zone that purchase Distribution Service or Supply Service supplied by a Distribution Utility or Retail Sale Licensee.
Ensuing Regulatory Quarter	Means a Regulatory Quarter commencing on the first day following the last day of the Base Regulatory Quarter and continuing through three calendar months.
Exchange Rate (Ghana Cedi /US Dollars)	Means the Average Daily Inter Bank Foreign Exchange Rate between the Ghana Cedi and US Dollar published by the Bank of Ghana.
Fuel Cost	Means Cost of Fuel in the case of electricity generation from thermal sources and Water Abstraction Fee in the case of electricity generation from hydro sources
Generation Tariff	Means the cost recovery price of electric power purchased by Distribution Companies (Discos) and Bulk Customers from Generation Companies.

TERM	DEFINITION
Ghana CPI	Means the consumer price index published by the Ghana Statistical Service.
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 or exchange rate).
Labour Cost	Means Salaries and Related Expenses
Natural Gas Commodity Charge	Means all costs associated with delivery of Gas at the point of injection into the Gas Processing Plant. This shall include Cost of Production and Cost of Gathering.
Natural Gas Processing Cost	Means all costs or all expenses relating to extraction of embedded natural gas liquids and removal of water vapour and other contaminants at processing plant.
Natural Gas Transmission Service Charge	Means expenses or costs incurred in transportation of processed gas from a processing plant to distribution centres, storage facilities and Bulk Customers.
PURC	Means Public Utilities Regulatory Commission established under the Public Utilities Regulatory Commission Act, 1997 (Act 538)
Return on Revalued Net Fixed Assets	Means profit earned in relation to total revalued net fixed assets of a Company.
Supply Service	Means the supply and sale of electrical energy to End Users by EDNSO.
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.
Transmission Service Charge	Means the price charged by the Ghana Grid Company (GRIDCo) for the use of the transmission network by Distribution companies (Discos) and Bulk Customers.
Trigger Conditions	Means a specified range or boundary between plus or minus of a number approved by the Commission within which the results of quarterly tariff review of electricity and water shall not be passed on to consumers and utility service providers.
Total Local Cost	Means Bank Charges, Materials, Transport & Travel, Repairs & Maintenance, Rent, Rates & Insurance, other Operating Cost, Central Services, Medical Services, and Customer Service Cost (where applicable).
US CPI	Means the Average US Standard Consumer Price Index of the relevant Year published by the United States Department of Labour Bureau of Labour Statistics (http://data.bls.gov), as the series Consumer Price Index - All Urban Consumers (series ID: CUUR000SAO), not seasonally adjusted for the area "U.S. city average" item "all items", base period "1982-84=100), with the column "Annual" containing the relevant values
Water Tariff	Means the price paid by Consumers for the supply of portable water by the Ghana Water Company Limited (GWCL).
Water Treatment Chemicals Cost	This includes all Chemicals needed in the production and analysis of water including Chlorine Gas, Aluminium Sulphate etc.

1.2 Abbreviations and Acronyms

BST	Bulk Supply Tariff
CBGC	Composite Bulk Generation Charge
CPI	Consumer Price Index
ECG	Electricity Company of Ghana
EPC	Enclave Power Company
GNGC	Ghana National Gas Company
GNPC	Ghana National Petroleum Corporation
GRIDCo	Ghana Grid Company Limited
GSPA	Gas Sales and Purchase Agreements
GWCL	Ghana Water Company Limited
NEDCo	Northern Electricity Company of Ghana
PURC	Public Utilities Regulatory Commission
RORNFA	Return on Revalued Net Fixed Assets
WACOG	Weighted Average Cost of Gas

1.3 Interpretations

In these guidelines:

1. Capitalised terms shall have the meanings assigned in the Definitions;
2. Capitalised terms used but not defined shall have the meanings assigned in the Act where the context demands;
3. References to the singular include the plural and vice versa where the context demands;
4. References to a statute include a reference to any regulations or orders made under or pursuant to it;
5. 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
6. 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: INTRODUCTION

2.1 Preamble

In July 2002, the PURC published its Proposed Transitional Plan for Electricity Rate Adjustment for the period 2001-2004. A key component of the Transitional Plan involved implementation of Quarterly Adjustment of electricity, natural gas and water production, transmission, distribution and supply tariffs alongside Major Tariff Reviews.

The main objective of the Quarterly Adjustment is to reflect changes in macroeconomic and market-driven factors in the operations of the electricity, natural gas and water utility service providers since the effects of these factors are beyond their control. This position according to the Commission, will minimise the effect of changes in the macroeconomic and market-driven variables and associated delays in passing on such effects not only to consumers but also electricity, natural gas and water utility service providers within the Tariff Control Period.

2.2 Tariff Philosophy

The guidelines for Quarterly Adjustment of electricity, natural gas and water tariffs are rooted in the PURC's tariff philosophy as captured in the following statutory provisions.

2.2.1 Statutory Provisions

The following provisions of the PURC 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)(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 fulfilment of statutory requirements of PURC, as explained in much more detail 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.

consumers but also electricity, natural gas and water utility service providers within the Tariff Control Period.

PART 3: ETHODOLOGY FOR QUARTERLY ADJUSTMENT OF NATURAL GAS, ELECTRICITY AND WATER SUPPLY INDUSTRY VALUE CHAIN TARIFFS

3.1 Natural Gas Supply Industry Value Chain Tariffs

As a key input into electricity tariff determination, Natural Gas Supply Industry Value Chain Tariffs comprise Commodity Charge, Processing Charge, Transmission Service Charge as well as Distribution and Retail Sale Charges. For purposes of Cost of Gas in electricity generation except distribution and retail sale charges, the three other charges, commodity, processing and transmission charges are aggregated into the Weighted Average Cost of Gas (WACOG).

Thus, the WACOG for purposes of Quarterly Adjustment of Electricity Tariffs, shall be adjusted taking into consideration the various indexation clauses contained in Natural Gas Sales and Purchase Agreements entered into by the Volta River Authority (VRA) in respect of N-Gas and also those entered into by Ghana National Petroleum Corporation (GNPC) as well as Natural Gas Processing and Transportation Agreements entered into by the Ghana National Gas Company (GNGC) using the following formulae.

3.1.1 Natural Gas Commodity Charge

The Weighted Average Gas Commodity Charge (WAGCC) for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$WAGCC_{t+1} = \sum_{i}^{n} ((GCC_n * Ind\_F_n) * GMix_n)$$

Where:

$WAGCC_{t+1}$ is Projected Weighted Average Gas Commodity Charge for Ensuing Regulatory Quarter

GCC_n is Gas Commodity Charge by Gas Supply Source i.e., Jubilee, Sankofa, TEN, N-Gas, etc. as contained in the relevant GSPA

Ind_F_n is Gas Commodity Charge Indexation Factor by Gas Supply Source as contained in the relevant GSPAs submitted

$GMix_n$ is Gas Supply Mix as Proportion of Total Gas Supply

3.1.2 Natural Gas Gathering Charge

The Gas Gathering Charge (GGC) for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$GGC_{t+1} = \sum_{i}^{n} ((GGC_n * GMix_n)$$

Where:

GPC_{t+1} is Projected Gas Processing Charge for Ensuing Regulatory Quarter

GPC_n is Gas Processing Charge by Gas Supply Source i.e., Jubilee and TEN as Approved by PURC

$GMix_n$ is Gas Supply Mix as Proportion of Total Gas Supply

3.1.3 Natural Gas Processing Charge

The Gas Processing Charge (GPC) for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$GPC_{t+1} = \sum_{i}^{n} ((GPC_n * GMix_n)$$

Where:

GPC_{t+1}	is Projected Gas Processing Charge for Ensuing Regulatory Quarter
GPC_n	is Gas Processing Charge by Gas Supply Source i.e., Jubilee and TEN as Approved by PURC
$GMix_n$	is Gas Supply Mix as Proportion of Total Gas Supply

3.1.4 Natural Gas Transmission Service Charge

The Weighted Average Gas Transmission Service Charge (WAGTSC) for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$WAGTSC_{t+1} = \sum_{i}^{n} ((GTSC_n * Ind\_F_n) * GMix_n)$$

Where:

$WAGTSC_{t+1}$	is Weighted Average Gas Transmission Service Charge for Ensuing Regulatory Quarter
$GTSC_n$	is Gas Transmission Service Charge of each Gas Transmission Pipeline including Regulatory Levy as Approved by PURC
Ind_F_n	is Gas Transmission Indexation Factor, where applicable, as contained in the relevant Gas Transportation Agreements
$GMix_n$	is Gas Supply Mix as Proportion of Total Gas Supply

3.1.5 Natural Gas Service Charge

The Weighted Average Gas Service Charge (WAGSC) for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$WAGSC_{t+1} = \sum_{i}^{n} (GSC_n * GMix_n)$$

Where:

$WAGSC_{t+1}$	is Weighted Average Gas Service Charge for Ensuing Regulatory Quarter
GSC_n	is Gas Service Charge as Approved by PURC
$GMix_n$	is Gas Supply Mix as Proportion of Total Gas Supply

3.1.6 Weighted Average Cost of Gas (WACOG)

The Weighted Average Cost of Gas for Ensuing Regulatory Quarter shall be determined using the following formula.

$$WACOG_{t+1} = WAGCC_{t+1} + WAGGC_{t+1} + WAGPC_{t+1} + WAGTSC_{t+1} + WAGSC_{t+1} \pm \mu$$

Where:

$WACOG_{t+1}$	is Projected Weighted Average Cost of Gas for Ensuing Regulatory Quarter
$WAGCC_{t+1}$	is Projected Weighted Average Gas Commodity Charge for Ensuing Regulatory Quarter
$WAGGC_{t+1}$	is Projected Weighted Average Gas Gathering Charge for Ensuing Regulatory Quarter
$WAGPC_{t+1}$	Is Projected Weighted Average Gas Processing Charge for Ensuing Regulatory Quarter
$WAGTSC_{t+1}$	Is Projected Weighted Average Gas Transmission Service Charge for Ensuing

Regulatory Quarter

$WAGSC_{t+1}$ is Projected Weighted Average Gas Service Charge for Ensuing Regulatory Quarter

μ Is Actual Weighted Average Over/Under Recovery Cost of Gas resulting from Actual Gas Supply Mix and Actual Revenue from Sale of Natural Gas Liquids Revenue

3.2 Electricity and Water Supply Industry Value Chain Tariffs

3.2.1 Costs Common to Electricity and Water Supply Industry Value Chain Tariffs

The quarterly electricity and water supply industry value chain tariffs shall be determined using the Commission's four major cost classifications. These cost classifications are administrative and general expenses, operation and maintenance expenses, human resource expenses and capital recovery expenses. These costs which are common to electricity and water supply industry value chain tariffs determination are re-classified as follows:

- Total Local Cost excluding Labour Cost (LoC)
- Labour Cost (LaC)
- Depreciation (Depn)
- Return on Revalued Net Fixed Assets (RORNFA)
- Fuel Cost (FuC)
- Water Treatment Chemicals Cost
- Water Electricity Cost

3.2.2 Macroeconomic Variables

In addition to above cost components which are common to electric and water supply industry value chain tariffs, two key macroeconomic variables, namely, Ghana Cedi-US Dollar Exchange Rate and Consumer Price Index, where applicable, shall be used to adjust the common costs noted in Section 3.2.1 on a quarterly basis.

3.2.2.1 Ghana Cedi-US Dollar Exchange Rate

The Commission shall compute the Weighted Average Ghana Cedi- US Dollar Exchange Rate using the published Ghana Association of Bankers Interbank Average Ghana Cedi-US Dollar Selling Exchange Rate of the last three months preceding the effective or commencement date of PURC's approved tariff for the Ensuing Regulatory Quarter to project the Ghana Cedi-US Dollar Exchange Rate for the Ensuing Regulatory Quarter using the Autoregressive Moving Average Model (ARIMA).

3.2.2.2 Ghana's Consumer Price Index

The Commission shall compute the Weighted Average CPI using the published Ghana Statistical Service CPI data of the last three months preceding the effective or commencement date of PURC's approved tariff for the Ensuing Regulatory Quarter to project the CPI for the Ensuing Regulatory Quarter using the Autoregressive Moving Average Model (ARIMA).

3.2.3 Parameters and Equations

To determine projected cost noted above for electricity and water supply industry value chain, the following parameters and equations which are common to both electricity and water supply industry value chain shall be applied.

3.2.3.1 Total Local Cost

The Projected Total Local Cost excluding Labour Cost, RORNFA and Depreciation for Ensuing Regulatory Quarter shall be computed using the following formula.

Where:

LoC_{t+1} Is Projected Total Local Cost for Ensuing Regulatory Quarter

XT_t Is Base Tariff (GHp/kWh) as Approved by PURC

LoC_t Is Base Local Cost as Proportion of Base Tariff

A_1 Is Decision Variable for All Other Cost excluding Labour Cost, RORNFA and Depreciation

α Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$

3.2.3.2 Labour Cost

The Projected Labour Cost for Ensuing Regulatory Quarter shall be computed using the following formula.

$$LaC_{t+1} = XT_t*(LaC_t)*(1+(\alpha*A_2))$$

Where:

LaC_{t+1} Is Projected Labour Cost for Ensuing Regulatory Quarter

XT_t Is Base Tariff (GHp/kWh) as Approved by PURC

LaC_t Is Base Labour Cost as Proportion of Base Tariff

A_2 Is Decision Variable for Labour Cost

α Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$

3.2.3.3 Depreciation

The Projected Depreciation for Ensuing Regulatory Quarter shall be computed using the following formula.

$$Depn_{t+1} = XT_t*((LDepn_t)*(1+\alpha) + (FDpen_t)*(1+\beta))$$

Where:

$Depn_{t+1}$ Is Projected Depreciation for Ensuing Regulatory Quarter

XT_t Is Base Tariff (GHp/kWh) as Approved by PURC

$LDepn_t$ Is Base Depreciation in Respect of Local Currency Financed Regulated Asset Base as Proportion of Base Tariff

$FDepn_t$ Is Base Depreciation in Respect of Foreign Currency Financed Regulated Asset Base as Proportion of Base Tariff

α Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/ CPI_t$

β Is Projected Average Exchange Rate Index Defined as $(ExchR_{t+1} - ExchR_t) /ExchR_t$

3.2.3.4 Return on Revalued Net Fixed Assets

The Projected Return on Revalued Net Fixed Assets for Ensuing Regulatory Quarter shall be computed using the following formula.

$$RORNFA_{t+1} = XT_t*((LRORNFA_t)*(1+\alpha)) + ((FRORNFA_t)*(1+ \beta))$$

Where:

$RORNFA_{t+1}$ Is Projected Return on Revalued Net Fixed Assets for Ensuing Regulatory Quarter

XT_t Is Base Tariff (GHp/kWh) as Approved by PURC

$LRORNFA_t$ Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Base Tariff

$FRORNFA_t$ Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Base Tariff

α Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/ CPI_t$

β Is Projected Average Exchange Rate Index Defined as $(ExchR_{t+1} - ExchR_t)/ExchR_t$

3.2.3.5 Fuel Cost

The Projected Fuel Cost for Ensuing Regulatory Quarter shall be computed using the following formula.

$$FuC_{t+1} = XT_t*((FuC_t)*(1+(FP)*(\beta))$$

Where:

FUC_{t+1} Is Projected Fuel Cost for Ensuing Regulatory Quarter

XT_t Is Base Tariff (GHp/kWh) as Approved by PURC

FUCt Is Base Fuel Cost as Proportion of Base Tariff

FP Is Projected Average Fuel Price Index Defined as $(FP_{t+1} - FP_t)/FP_t$

β Is Projected Average Exchange Rate Index Defined as $(ExchR_{t+1} - ExchR_t) /ExchR_t$

3.2.3.6 Cost of Electricity Transmission and Distribution Losses

The Cost of Electricity Transmission and Distribution Losses shall be computed as follows.

3.2.3.6.1 Cost of Transmission Losses - TSC-2

The Cost of Transmission Losses for Ensuing Regulatory Quarter shall be computed using the following formula.

$$CTSL_{t+1} = ((TSC_t*TSLI_t*(1+(CBGC_{t+1} - CBGC_t)/CBGC_t)$$

Where:

$CTSL_{t+1}$ Is Projected Cost of Transmission System Loss (GHp/kWh)

TSC_t Is PURC Approved Base Transmission Service Charge (GHp/kWh)

$TSLI_{t+1}$ Is Transmission System Loss Index which is Base Transmission Loss Cost as Proportion of Base Transmission Service Charge

$CBGC_{t+1}$ Is PURC Approved Projected Composite Bulk Generation Charge (GHp/kWh)

$CBGC_t$ Is PURC Approved Base Composite Bulk Generation Charge (GHp/kWh)

3.2.3.6.2 Cost of Distribution Losses - DSC-2

The Cost of Distribution Losses for Ensuing Regulatory Quarter shall be computed using the following formula.

$$CDSL_{t+1} = DSC_t*(DSLI_t*(1+(BST_{t+1} - BST_t)/BST_t))$$

Where:

$CDSL_{t+1}$ Is Projected Cost of Distribution System Loss (GHp/kWh)

DSC_t Is PURC Approved Base Distribution Service Charge (GHp/kWh)

$DSLI_{t+1}$	Is Distribution System Loss Index which is Base Distribution Loss Cost as Proportion of Base Distribution Service Charge
BST_{t+1}	Is PURC Approved Projected Bulk Supply Tariff (GHp/kWh)
BSTt	Is PURC Approved Base Bulk Supply Tariff (GHp/kWh)

3.2.3.7 Local Cost Related to Water Supply

The Projected Local Cost related to Water Supply excluding Labour Cost, RORNFA, Depreciation, Chemicals and Electricity Cost for Ensuing Regulatory Quarter shall be computed using the following formula.

$$WLoC_{t+1} = (WT_t)*(WaC_t)*(1+(\alpha* A_1))$$

Where:

$WLoC_{t+1}$	Is Projected Water Local Cost Excluding Labour Cost, RORNFA, Depreciation, Chemicals and Electricity Cost for Ensuing Regulatory Quarter
WT_t	Is Base Water Tariff (GHp/m3) as Approved by PURC
WaC_t	Is Base Water Cost Excluding Chemicals and Electricity Cost as Proportion of Base Tariff
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORANFA and Depreciation, Chemicals and Electricity Cost
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$

3.2.3.8 Water Treatment Chemical Costs

The Projected Water Treatment Chemical Costs for Ensuing Regulatory Quarter shall be computed using the following formula.

$$WTCC_{t+1} = (WT_t)*((WTCC_t)*(1+\beta))$$

Where:

$WTCC_{t+1}$	Is Projected Water Treatment Chemical Costs for Ensuing Regulatory Quarter
WT_t	Is Base Water Tariff (GHp/m^3) as Approved by PURC
$WTCC_t$	Is Base Water Treatment Chemicals Cost as Proportion of Base Tariff
β	Is Projected Average Exchange Rate Index Defined as $(ExchR_{t+1}-ExchR_t)/ExchR_t$

3.2.3.9 Water Electricity Cost

The Projected Electricity Cost related to Water Supply for Ensuing Regulatory Quarter shall be computed using the following formula.

$$ELC_{t+1} = (WT_t)*(ELC_t)*(ECF)$$

Where:

ELC_{t+1}	Is Projected Electricity Cost for Ensuing Regulatory Quarter
WT_t	Is Base Water Tariff (GHp/m^3) as Approved by PURC
ELC_t	Is Base Water Electricity Cost as Proportion of Base Tariff
ECF	Is Projected Electricity Cost Factor for Ensuing Regulatory Quarter Defined as Projected Weighted Electricity Cost/Base Weighted Electricity Cost $(PWEC_{t+1}/PWEC_t)$

3.3 Electricity and Water Supply Industry Value Chain Tariffs

3.3.1 Electricity Supply Industry Value Chain Tariffs

The following methodologies shall be used to review electricity supply industry value chain tariffs.

3.3.1.1 Composite Bulk Generation Charge

The Composite Bulk Generation Charge shall be determined using the following formula:

$$CBGC_{t+1} = \left[\sum_{i=1}^{n}\left(HT_t * HGenMix_t + \rho_3\right) + \sum_{i=1}^{n}\left((CT_t + NFT_t + (FT_t * FP)) * TGenMix_t\right)\right] * (\beta \pm \rho_1)$$

Where:

$CBGC_{t+1}$	Is Projected Composite Bulk Generation Charge for Ensuing Regulatory Quarter
HT_t	Is Base Hydro Generation Tariff/Charge of each respective Hydro Generating Station
$HGenMix_t$	Is Projected Hydro Electrical Energy Generation as Proportion of Total Electrical Energy Generation
ρ_3	Is Hydro Generation Mix Over Recovery Adjustment Factor
CT_t	Is Base Capacity Tariff/Charge of each respective Thermal Generation Plant
NFT_t	Is Base Non-Fuel Tariff/Charge of each respective Thermal Generation Plant
FT_t	Is Base Fuel Tariff/Charge of each respective Thermal Generation Plant
FP_t	Is Projected Average Fuel Price Index Defined as FP_{t+1}/FP_t
$TGenMix_t$	Is Projected Thermal Electrical Energy Generation as Proportion of Total Electrical Energy Generation
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter **Defined as $ExchR_{t+1}/ExchR_t$**
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as **$(AAExchR_t - BExchR_t)/BExchR_t$**

3.3.1.2 Transmission Service Charge

The Transmission Service Charge for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$TSC_{t+1} = (TSC_t*(LoC_t)*(1+(A_1*(\alpha\pm\rho_2))+(TSC_t*(LaC_t)*(1+(A_2*(\alpha\pm\rho_2))+TSC_t*((LDepn_t)*(1+(\alpha\pm\rho_2))+(FDpen_t)*(1+(\beta\pm\rho_1))+ TSC_t*((LRoRNFA_t)*(1+(\alpha\pm\rho_2))+(FRoRNFA_t)*(1+(\beta\pm\rho_1))+TSC_t*((CorpTax_t)*(1+(\alpha\pm\rho_2))$$

Where:

TSC_{t+1}	Is Projected Transmission Service Charge (GHp/kWh) for Ensuing Regulatory Quarter
TSC_t	Is Base Transmission Service Charge (GHp/kWh) (PURC Gazetted TSC)
LoC_t	Is Base Total Local Cost (excluding Labour Cost, Depreciation and RoRNFA) as Proportion of Transmission Service Charge
LaC_t	Is Base Labour Cost as Proportion of Transmission Service Charge
$LDepn_t$	Is Base Local Depreciation as Proportion of Transmission Service Charge
$FDepn_t$	Is Base Foreign Depreciation as Proportion of Transmission Service Charge
$LRoRNFA_t$	Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Transmission Service Charge
$FRORNFA_t$	Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Transmission Service Charge
$CorpTax_t$	Is Base Corporate Tax as Proportion of Transmission Service Charge
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/ CPI_t$
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $(ExchR_{t+1} - ExchR_t) /ExchR_t$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AAExchR_t\text{-}BExchR_t)/ BExchR_t}$
ρ_2	Is Consumer Price Index Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AACPI_t\text{ -}BCPI_t)/BCPI_t}$
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORNFA and Depreciation
A_2	Is Decision Variable for Labour Cost

3.3.1.3 Distribution Service Charge

The Distribution Service Charge for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$DSC_{t+1} = DSC_t*(LoC_t)*(1+(A_1*(\alpha\pm\rho_2))+(DSC_t*(LaC_t)*(1+(A_2*(\alpha\pm\rho_2))+DSC_t*((LDepn_t)*(1+(\alpha\pm\rho_2))+(FDpen_t)*(1+(\beta\pm\rho_1))+ DSC_t*((LRoRNFA_t)*(1+(\alpha\pm\rho_2))+(FRoRNFA_t)*(1+(\beta\pm\rho_1)))+DSC_t*((CorpTax_t)*(1+(\alpha\pm\rho_2))$$

Where:

DSC_{t+1}	Is Projected Distribution Service Charge (GHp/kWh) for Ensuing Regulatory Quarter
DSC_t	Is Base Distribution Service Charge (GHp/kWh) as Gazettedby PURC
LoC_t	Is Base Total Local Cost (excluding Labour Cost, Depreciation & RoRNFA) as Proportion of Distribution Service Charge
LaC_t	Is Base Labour Cost as Proportion of Distribution Service Charge
$LDepn_t$	Is Base Local Depreciation as Proportion of Distribution Service Charge
$FDepn_t$	Is Base Foreign Depreciation as Proportion of Distribution Service Charge
$LRoRNFA_t$	Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Distribution Service Charge
$FRORNFA_t$	Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Distribution Service Charge
$CorpTax_t$	Is Base Corporate Tax as Proportion of Distribution Service Charge
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $(ExchR_{t+1} - ExchR_t)/ExchR_t$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as **(AAExchRt-BExchRt)/ BExchRt**
ρ_2	Is Consumer Price Index Over/Under Recovery Adjustment Factor Defined as **(AACPIt -BCPIt)/ BCPIt**
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORNFA and Depreciation
A_2	Is Decision Variable for Labour Cost

3.3.1.4 Total Revenue Requirement for the Electricity Supply Value Chain

The Total Revenue Requirement for the Electricity Supply Value Chain determined on the basis of Adjusted Composite Bulk Generation Tariff, Transmission Service Charge and Distribution Service charge for the Ensuing Regulatory Quarter shall be determined as follows:

$$\mathbf{TRR_{t+1} = PES_{t+1} * (CBGT_{t+1} + TSC_{t+1} + DSC_{t+1})}$$

Where:

TRR_{t+1}	Is Total Revenue Requirement for Ensuing Regulatory Quarter
PES_{t+1}	Is Projected Energy Sales Over Ensuing Regulatory Quarter
$CBGT_{t+1}$	Is Projected Composite Bulk Generation Tariff for Ensuing Regulatory Quarter
TSC_{t+1}	Is Projected Transmission Service Charge for Ensuing Regulatory Quarter
DSC_{t+1}	Is Projected Distribution Service Charge for Ensuing Regulatory Quarter

3.3.1.5 Allocatable Total Revenue Requirement for the Electricity Supply Value Chain

The Total Revenue Requirement determined in 3.3.1.4 shall be allocated fully to Rate Payers or End-use Customers on the basis of customer class rates. However, where National Annual Budgetary/Financial Support to the Electricity Value Chain (Including Natural Gas and Liquid Fuel Financial Support) is provided to all or specific customer group(s), the impact of such financial support on the Total Revenue Requirement shall be taken into consideration in determination of the final Total Revenue Requirement to be allocated to End-Use Customers. The Allocatable Total Revenue Requirement shall be determined using the following formula.

$$TRR_{t+1} = (PES_{t+1} * (CBGT_{t+1} + TSC_{t+1} + DSC_{t+1})) - \Phi^{1}$$

Where:

TRR_{t+1}	Is Total Revenue Requirement for Ensuing Regulatory Quarter
PES_{t+1}	Is Projected Energy Sales Over Ensuing Regulatory Quarter
$CBGT_{t+1}$	Is Projected Composite Bulk Generation Tariff for Ensuing Regulatory Quarter
TSC_{t+1}	Is Projected Transmission Service Charge for Ensuing Regulatory Quarter
DSC_{t+1}	Is Projected Distribution Service Charge for Ensuing Regulatory Quarter

3.3.2 Water Supply Industry Value Chain Tariffs

The Water Supply Industry Value Chain Tariffs for the Ensuing Regulatory Quarter shall be determined using the following formulae.

3.3.2.1 Water Production Tariff

The Water Production Tariff comprising Befesa Desalination Water Purchase Cost and GWCL Water Production Tariff for the Ensuing Regulatory Quarter shall be determined using the following formulae.

3.3.2.1.1 Befesa Desalination Water Purchase Cost

The Befesa Desalination Water Purchase Cost for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$DWPC_{t+1} = DWPC_t * (\beta \pm \rho_1)$$

Where:

$DWPC_{t+1}$	Is Projected Desalination Water Purchase Cost for Ensuing Regulatory Quarter
$DWPC_t$	Is Base Projected Desalination Water Purchase Cost
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $ExchR_{t+1}/ExchR_t$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as $(AAExchR_t - BExchR_t)/BExchR_t$

3.3.2.1.2 Ghana Water Company Limited Water Production Cost

The GWCL Water Production Cost for the Ensuing Regulatory Quarter shall be determined using the following formula.

[1] National Annual Budgetary/Financial Support to the Electricity Value Chain (Including Natural Gas and Liquid Fuel Financial Support)

$$GWPT_{t+1} = GWPT_t*(LoC_t)*(1+(A_1*(\alpha\pm\rho_2)))+(GWPT_t*(LaC_t)*(1+(A_2*(\alpha\pm\rho_2))+(GWPT_t*ELC_t*ECF)+(GWPT_t*(WTCC_t)*(1+(\beta\pm\rho_1))+(GWPT_t*((LDepn_t)*(1+(\alpha\pm\rho_2))+(FDpen_t)*(1+(\beta\pm\rho_1))+(GWPT_t*((LRoRNFA_t)*(1+(\alpha\pm\rho_2))+((FRoRNFA_t)*(1+(\beta\pm\rho_1))+(GWPT_t*((CorpTax_t)*(1+(\alpha\pm\rho_2)))$$

Where:

$GWPT_{t+1}$	Is Projected GWCL Water Production Tariff for Ensuing Regulatory Quarter
$GWPT_t$	Is Base GWCL Water Production Tariff as Approved by PURC
LoC_t	Is Base Total Local Cost (excluding Labour Cost, Energy Cost, Depreciation & RoRNFA) as Proportion of Average Water Production Tariff
LaC_t	Is Base Labour Cost as Proportion of Average Water Production Tariff
ELC_t	Is Base Electricity Cost as Proportion of Average Water Production Tariff
ECF	Is Projected Electricity Cost Factor for Ensuing Regulatory Quarter Defined as $PWEC_{t+1}/PWEC_t$
$WTCC_t$	Is Base Water Treatment Chemicals Cost as Proportion of Average Water Production Tariff
$LDepn_t$	Is Base Local Depreciation as Proportion of Average Water Production Tariff
$FDepn_t$	Is Base Foreign Depreciation as Proportion of Average Water Production Tariff
$LRoRNFA_t$	Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Average Water Production Tariff
$FRORNFA_t$	Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Average Water Production Tariff
$CorpTax_t$	Is Base Corporate Tax as Proportion of Average Water Production Tariff
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $(ExchR_{t+1} - ExchR_t) /ExchR_t$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as $(AAExchR_t-BExchR_t)/ BExchRt$
ρ_2	Is Consumer Price Index Over/Under Recovery Adjustment Factor Defined as $(AACPI_t -BCPI_t)/ BCPI_t$
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORANFA, Depreciation, Chemicals and Electricity Cost
A_2	Is Decision Variable for Labour Cost

[2] Projected Weighted Electricity Cost
[3] Base Weighted Electricity Cost

3.3.2.1.3 Composite Water Production Tariff

The Composite Water Production Tariff comprising Befesa Desalination Water Purchase Cost and GWCL Water Production Tariff for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$\mathbf{CWPT_{t+1} = DWPC_{t+1} * DMix + GWPT_{t+1} * GWMix}$$

Where:

$CWPT_{t+1}$	Is Projected Composite Water Production Tariff for Ensuing Regulatory Quarter
$DWPC_{t+1}$	Is Projected Desalination Water Purchase Cost for Ensuing Regulatory Quarter
DMix	Is Water Produced from Desalination Source as a Proportion of Total Water Volume
$GWPT_{t+1}$	Is Projected GWCL Production Cost for Ensuing Regulatory Quarter
GWMix	Is Water Produced from GWCL as a Proportion of Total Water Volume

3.3.2.2 Water Transmission Service Charge

The GWCL Water Transmission Service Charge for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$\mathbf{GWTSC_{t+1} = GWTSC_t*(LoC_t)*(1+(A_1*(\alpha\pm\rho_2)))+(GWTSC_t*(LaC_t)*(1+(A_2*(\alpha\pm\rho_2))+(GWTSC_t*ELC_t*ECF)+(GWTSC_t*(WTCC_t)*(1+(\beta\pm\rho_1))+GWTSC_t*((LDepn_t)*(1+(\alpha\pm\rho_2))+(FDpen_t)*(1+(\beta\pm\rho_1)+))+(GWTSC_t*((LRoRNFA_t)*(1+(\alpha\pm\rho_2))+((FRoRNFA_t)*(1+(\beta\pm\rho_1))) + GWTSC_t*(CorpTax_t)*(1+(A_1*(\alpha\pm\rho_2)))}$$

Where:

$GWTSC_{t+1}$	Is Projected GWCL Water Transmission Service Charge for Ensuing Regulatory Quarter
$GWTSC_t$	Is Base GWCL Water Transmission Service Charge as Approved by PURC
LoC_t	Is Base Total Local Cost (excluding Labour Cost, Energy Cost, Depreciation & RoRNFA) as Proportion of Average Water Transmission Service Charge
LaC_t	Is Base Labour Cost as Proportion of Average Water Transmission Service Charge
ELC_t	Is Base Electricity Cost as Proportion of Average Water Transmission Service Charge
ECF	Is Projected Electricity Cost Factor for Ensuing Regulatory Quarter Defined as PWECt+1 /PWECt
$WTCC_t$	Is Base Water Treatment Chemicals Cost as Proportion of Average Water Transmission Service Charge
$LDepn_t$	Is Base Local Depreciation as Proportion of Average Water Transmission Service Charge
$FDepn_t$	Is Base Foreign Depreciation as Proportion of Average Water Transmission Service Charge

[4] Projected Weighted Electricity Cost
[5] Base Weighted Electricity Cost

$LRoRNFA_t$	Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Average Water Transmission Service Charge
$FRORNFA_t$	Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Average Water Transmission Service Charge
$CorpTax_t$	Is Base Corporate Tax as Proportion of Average Water Transmission Service Charge
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $\mathbf{(ExchR_{t+1} - ExchR_t)/ExchR_t}$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AAExchR_t - BExchR_t)/BExchR_t}$
ρ_2	Is Consumer Price Index Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AACPI_t - BCPI_t)/BCPI_t}$
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORANFA and Depreciation, Chemicals and Electricity Cost
A_2	Is Decision Variable for Labour Cost

3.3.2.3 Water Distribution Service Charge

The GWCL Water Distribution Service Charge for the Ensuing Regulatory Quarter shall be determined using the following formula.

$$\mathbf{GWDSC_{t+1}=GWDSC_t*(LoC_t)*(1+(A_1*(\alpha\pm\rho_2))+(GWDSC_t*(LaC_t)*(1+(A_2*(\alpha\pm\rho_2))+(GWDSC_t*ELC_t*ECF)+(GWDSC_t*(WTCC_t)*(1+(\beta\pm\rho_1)+GWDSC_t*((LDepn_t)*(1+(\alpha\pm\rho_2))+(FDpen_t)*(1+(\beta\pm\rho_1))+(GWDSC_t*(LRoRNFA)*(1+(\alpha\pm\rho_2)))+((FRoRNFA_t)*(1+(\beta\pm\rho_1))) + GWDSC_t*(CorpTax_t)*(1+(A_1*(\alpha\pm\rho_2)))}$$

Where:

$GWDSC_{t+1}$ Quarter	Is Projected GWCL Water Distribution Service Charge for Ensuing Regulatory
$GWDSC_t$	Is Base GWCL Water Distribution Service Charge as Approved by PURC
LoC_t	Is Base Total Local Cost (excluding Labour Cost, Energy Cost, Depreciation & RoRNFA) as Proportion of Average Water Distribution Service Charge
LaC_t	Is Base Labour Cost as Proportion of Average Water Distribution Service Charge
ELC_t	Is Base Electricity Cost as Proportion of Average Water Distribution Service Charge
ECF	Is Projected Electricity Cost Factor for Ensuing Regulatory Quarter Defined as $PWEC_{t+1}$ /$PWEC_t$

[6] Projected Weighted Electricity Cost
[7] Base Weighted Electricity Cost

$WTCC_t$	Is Base Water Treatment Chemicals Cost as Proportion of Average Water Tariff
$LDepn_t$	Is Base Local Depreciation as Proportion of Average Water Distribution Service Charge
$FDepn_t$	Is Base Foreign Depreciation as Proportion of Average Water Distribution Service Charge
$LRoRNFA_t$	Is Base Return in Respect of Local Currency Financed Regulated Asset Base as Proportion of Average Water Transmission Service Charge
$FRORNFA_t$	Is Base Return on Foreign Currency Financed Net Fixed Assets as Proportion of Average Water Transmission Service Charge
$CorpTax_t$	Is Base Corporate Tax as Proportion of Average Water Transmission Service Charge
α	Is Projected Average Inflation Index for Ensuing Regulatory Quarter Defined as $(CPI_{t+1} - CPI_t)/CPI_t$
β	Is Projected Average Exchange Rate Index for Ensuing Regulatory Quarter Defined as $\mathbf{(ExchR_{t+1} - ExchR_t)/ExchR_t}$
ρ_1	Is Exchange Rate Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AAExchR_t - BExchR_t)/BExchR_t}$
ρ_2	Is Consumer Price Index Over/Under Recovery Adjustment Factor Defined as $\mathbf{(AACPI_t - BCPI_t)/BCPI_t}$
A_1	Is Decision Variable for All Other Cost excluding Labour Cost, RORANFA and Depreciation, Chemicals and Electricity Cost
A_2	Is Decision Variable for Labour Cost

3.3.2.4 Total Revenue Requirement for Water Supply Value Chain

The Total Revenue Requirement for the Water Supply Value Chain determined on the basis of Adjusted Water Production Tariff, Water Transmission Service Charge and Water Distribution Service charge for the Ensuing Regulatory Quarter shall be determined as follows:

$$\mathbf{WTRR_{t+1} = PWS^* (GWPT_{t+1} + GWTSC_{t+1} + GWDSC_{t+1})}$$

Where:

$WTRR_{t+1}$	Is Total Revenue Requirement
PWS_{t+1}	Is Projected Water Sales for Ensuing Regulatory Quarter
$GWPT_{t+1}$	Is Projected Ghana Water Production Tariff for Ensuing Regulatory Quarter
$GWTSC_{t+1}$	Is Projected Ghana Water Transmission Service Charge for Ensuing Regulatory Quarter
$GWDSC_{t+1}$	Is Projected Distribution Service Charge for Ensuing Regulatory Quarter

3.3.2.5 Allocatable Total Revenue Requirement for the Water Supply Value Chain

The Total Revenue Requirement determined in 3.3.2.4 shall be allocated fully to Rate Payers or End-use Customers on the basis of customer class rates. However, where National Annual Budgetary/Financial Support to the Water Supply Value Chain is provided to all or specific customer group(s), the impact of such financial support on the Total Revenue Requirement shall be taken into consideration in determination of the final Total Revenue Requirement to be allocated to End-Use Customers. The Allocatable Total Revenue Requirement shall be determined using the following formula.

$$\mathbf{TWRR_{t+1} = (PWS_{t+1} * (GWPT_{t+1} + GWTSC_{t+1} + GWDSC_{t+1})) - \Phi}$$

Where:

$TWRR_{t+1}$	Is Total Water Revenue Requirement for Ensuing Regulatory Quarter
PWS_{t+1}	Is Projected Water Sales for Ensuing Regulatory Quarter
$GWPT_{t+1}$	Is Projected Ghana Water Production Tariff for Ensuing Regulatory Quarter
$GWTSC_{t+1}$	Is Projected Ghana Water Transmission Service Charge for Ensuing Regulatory Quarter
$GWDSC_{t+1}$	Is Projected Distribution Service Charge for Ensuing Regulatory Quarter
Φ	Is National Annual Budgetary/Financial Support to the Water Supply Value Chain

PART 4: DECISION VARIABLES, OVER AND UNDER RECOVERIES AND TRIGGER CONDITIONS

4.1 Decision Variables

The Commission shall employ two Decision Variables namely, A1 and A2 as defined in its decision-making processes relating to approval of tariffs for the Ensuing Regulatory Quarter. These decision variables shall determine the prudency of implementing adjustments made to Natural Gas, Electricity and Water Value Chain Cost Components hence Tariffs for an Ensuing Regulatory Quarter.

4.2 Over and Under Recoveries

Over and under recovery of Natural Gas, Electricity and Water Tariffs hence revenue requirements for same shall be determined for each Preceding Regulatory Quarter. The results of such determination shall be factored into determination of tariffs for Ensuring Regulatory Quarter.

4.3 Trigger Conditions

The Commission shall apply no Trigger Conditions to the passing on, of over and under recoveries as well as projections of Natural Gas, Electricity and Water Tariffs hence revenue requirements for Ensuing Regulatory Quarter. This is to prevent abnormal upward or downward spikes in tariff adjustments in Ensuing Regulatory Quarter resulting from accumulation of costs hence shortfall/surplus in revenue requirements of Utility Service Providers/Consumers.

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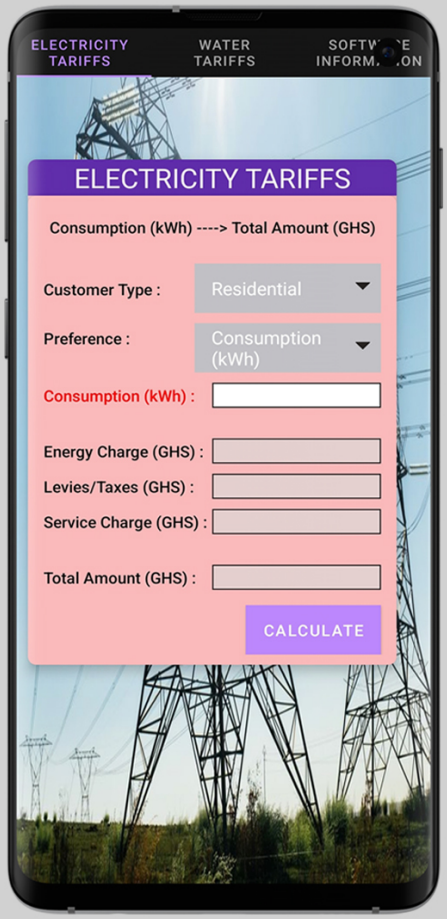

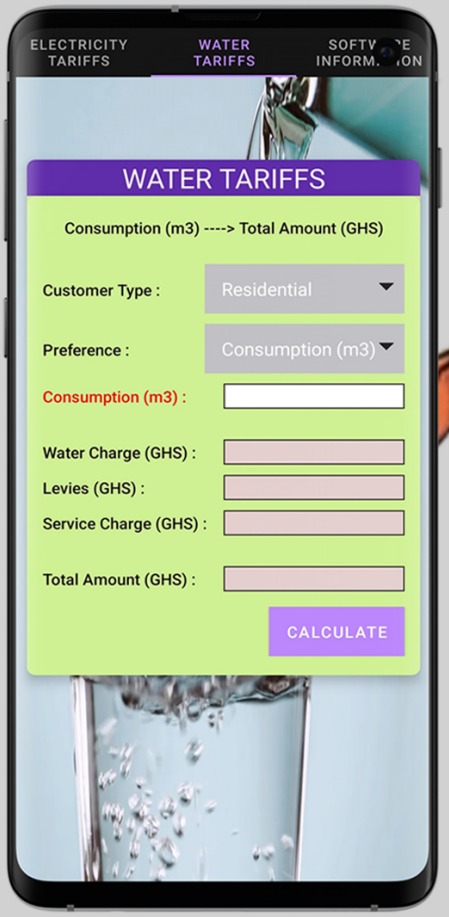

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