# Regulatory Accounting and Reporting Guidelines

# Electricity Transmission

## PURPOSE, SCOPE, APPLICATION AND REVISION

### PURPOSE OF THE GUIDELINES

The purpose of the regulatory accounting and reporting guidelines is to set out the principles and rules for presentation of information to the regulator by the regulated Electricity Transmission Utility.

The guidelines aim to provide PURC with information that will make decisions on tariff adjustments specifically to set transmission service charge that will ensure economically, efficient, reliable and secure operation of the National Interconnected Transmission System.

Finally, the guidelines will provide PURC with financial, technical and other operational information necessary to monitor the overall performance of the Electricity Transmission Utility.

### SCOPE AND APPLICATION

The guidelines shall apply to a public utility licensed or authorised under any law to own or operate electricity transmission assets and provide system operation services in the electricity market in Ghana.

### EFFECTIVE DATE, REVIEW, ADDITIONS AND AMENDMENTS

i. These guidelines take effect from the date of issue of the FINAL VERSION of the Guidelines

ii. PURC reserves the right to review or add to these guidelines periodically. Review or addition to the guidelines shall be done in consultation with stakeholders and in accordance with the Public Utilities Regulatory Commission, 1997 (Act 538).

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 Act.

Approved by the Commission on the 29TH Day of AUGUST 2025

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 Regulatory Accounting and Reporting Guidelines in Ghana. The document is organized as follows:

- Part 1 – This Part deals with the Purpose, Scope, Application and Issues relating to Revision of the Guidelines as well as Definitions.
- Part 2 - This Part sets out the Philosophy of the Guidelines.
- Part 3 – This part sets out Information Requirement from the Transmission Utility
- Part 4 – This part defines the general and specific contents of the Regulatory Accounting Templates (Appendix).

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**DEFINITIONS**

| Term | Definition |
|---|---|
| **Act** | This shall mean the Public Utilities Regulatory Commission Act, 1997 (Act 538). |
| **Affiliate** | This shall mean any legal entity having a direct or indirect participation in the company subject to regulation in Ghana, and any legal entity in which the company is subject to regulation in Ghana has a direct or indirect participation. |
| **Bulk Customer** | This shall mean a customer that purchases or receives electric power or energy of the amount or level specified by the Board of the Energy Commission |
| **Commission** | This shall mean Public Utilities Regulatory Commission established under the Public Utilities Regulatory Commission Act 1997, (Act 538). |
| **Cost Allocation** | This shall mean the process of identifying, aggregating and assigning a single cost to more than one business activity, process or service in a manner that prevents cross subsidisation. |
| **Electricity Transmission Utility** | This shall mean an entity charged with operation of the National Interconnected Transmission System (NITS) and holder of a license to transmit electricity issued by the Energy Commission. |
| **Independent System Operator (ISO)** | This shall mean a neutral operator licensed by the Energy Commission responsible for maintaining instantaneous balance of the NITS by controlling the dispatch of generating units to ensure that loads match resources available to the system and is effected in a safe, reliable, economic and non-discriminatory manner. |
| **Regulatory Accounts** | This shall mean the prescribed system of accounts to be used by regulated utilities in submission of data (financial and technical) to the Commission as per the framework set out in these Guidelines |
| **Regulatory Asset Base** | This shall mean all tangible and intangible assets used in the direct provision of a regulated service and used in determination of tariffs. |

## PART 1 PHILOSOPHY OF GUIDELINES

### 1.1 Preamble

The Public Utilities and Regulatory Commission (PURC) of Ghana is responsible for approval of electricity tariffs, monitoring of quality of service and consumer protection. In order to fulfil these mandates, the Commission has to gather, analyse and use different types of information and data: mainly financial and accounting data, technical and operational data, and commercial data. The aforementioned data must be presented in line with regulatory standards needed to undertake tariff reviews as well as monitor standards of performance vis-à-vis associated regulatory costs and benchmarks.

In furtherance of above, these guidelines are issued pursuant to the PURC Act, 1997 (Act 538), Sections 16 and 24.

### 1.2 Principles Underlying the Guidelines

These Guidelines are based on the following general principles.

1. Transparency of information, procedures and transactions in electricity transmission and system operation services
2. Allocation of costs, revenues and assets in a way that facilitates achievement of regulatory objectives.
3. Provision of options to transmission grid participants on a level plating field basis thereby contributing to the Commission's competition objective function.

### 1.3 Objectives of the Guidelines

These Guidelines are intended to achieve the following objectives.

1. Create a transparent and strong regulatory environment
2. Financial viability of the power utilities (including the guarantee of an appropriate rate of return on investments).
3. Ensure efficient and optimal operations in the electricity transmission sector
4. Foster the provision of safe and reliable electricity transmission service at reasonable cost levels
5. Ensure cost-reflective tariffs, affordability and access to electricity
6. Separate the regulated and non-regulated business costs
7. Create necessary conditions for the attraction of needed capital to the sector, at reasonable costs, for system upgrade and efficient expansion

### 1.4 Disclosure and Confidentiality Rules

PURC acknowledges that there may be commercial sensitivities attached to disclosure of some of the information provided by the regulated utilities to third parties. Such information shall be disclosed in consultation with the Transmission Utility as well as the Right to Information Act, 2019 (Act 989).

## PART 2 BACKGROUND TO REGULATORY ACCOUNTING

### 2.1 General Accounting Principles

The financial and accounting information listed in these guidelines to be requested from the Electricity Transmission Utility shall follow the same principles as the national accounting standards. The Electricity Transmission Utility shall prepare a regulatory account separately from the standard account reported by the company.

### 2.2 General Allocation Principles

From an accounting and financial perspective, the regulation of electricity transmission activities requires separation of activities that are regulated from other non-regulated activities within the same entity. Separate accounts should be kept for these other activities. The financial and accounting data to be provided by the regulated utilities following these guidelines are related to the regulated activities of these utilities.

A proper allocation process requires definition of allocation principles. The principles defined by PURC for the allocation of costs, revenues and assets shall be as follows:

#### 2.2.1 Causality

Revenues, costs and assets shall be allocated to the different services provided by the regulated company on a ***causality*** basis (services offered or user category served by the regulated company that cause those costs or revenues to arise). To do this the regulated utility shall take into consideration the following:

a) ***Direct or directly attributable revenues or costs****: Traceable cause and effect relationship with the provision of the service; or revenues or costs which are solely generated by a particular service*
b) ***Indirectly attributable revenues or costs****: revenues or costs which are part of a pool of common revenues or costs but which can be attributed to a particular service through a non-arbitrary and verifiable cause and effect relationship (i.e. cost of a maintenance team that performs maintenance on assets belonging to different services)*
c) ***Unattributable revenues or costs****: revenues or costs which are part of a pool of common revenues or costs and cannot be identified to a particular service, asset or function through a non-arbitrary and verifiable cause and effect relationship (i.e. administration or marketing costs).*

#### 2.2.2 Objectivity

The allocation and valuation methodologies should be designed on an objective basis, and not in a way to benefit unfairly any party, neither the regulated company or any other party.

#### 2.2.3 Consistency

The allocation criteria should be the same over time.

#### 2.2.4 Transparency

Allocation methodologies shall be clear and the various components of the costs shall be perfectly differentiated from each other.

### 2.3 Approval of Allocation Methodology

The regulated company shall submit to PURC for approval an allocation methodology that complies with the general principles described in Section 2.2. The methodology shall be applied to both accounting and financial data. The data shall be submitted to the Commission indicating activities that are regulated and unregulated, as well as the percentage of the revenues, costs, assets and investments assigned to voltage levels on a causal basis.

PURC shall approve or reject the methodology and the data submitted. If rejected, PURC shall request the regulated utility within 30 days to resubmit in line with the principles stated in the guidelines.

#### 2.3.1 Application of Allocation Methodology

Once approved by PURC, the allocation methodology shall be applied consistently over time. No change shall be made to the methodology without prior approval of PURC. Any change to the methodology shall be subjected to PURC's approval and the Utility must indicate and justify the need for such change.

## PART 3 INFORMATION REQUIREMENTS

PURC shall issue regulatory accounting templates which shall serve as a uniform format that the Electricity Transmission Utility shall be required to use in submission of information for regulatory purposes. The templates shall be provided by PURC in excel format and the Electricity Transmission Utility shall fill in the appropriate cells according to the explanations and instructions provided in these Guidelines. The submission shall include both historical and projected information as captured as follows.

### 3.1 Financial Information

The Electricity Transmission Utility shall provide the following financial information requirements:

a) Assets and Liabilities (components of the balance sheet statement)
b) Income Statement
c) Revenues Disaggregated Data
d) Operating Expenditures Disaggregated Data
e) Capital Costs Disaggregated Data

### 3.2 Technical and Operational Information

The Electricity Transmission Utility shall provide the following technical and operational information requirements:

a) System characteristics and descriptive data
b) Technical service performance data related to network condition, losses, interruptions and technical service quality

### 3.3 Organisational Information

The Electricity Transmission Utility shall provide information relating to staff figures disaggregated into various departments.

### 3.4 Performance Indicators

PURC shall derive a set of financial, technical, operational, cost and labour indicators based on raw data provided in the information model. These performance indicators shall facilitate the monitoring of performance of the Electricity Transmission Utility.

### 3.5 Validation of Data

Data submitted in the information templates shall be subject to further validation and audit from a regulatory point of view. Operational and capital costs shall be reasonable and justified in accordance with principles provided in Section 2.2.

### 3.6 Periodicity of Information Delivery

The Electricity Transmission Utility shall submit operational and technical data to PURC quarterly and annually. Quarterly data shall be submitted in line with Section 49(2) of LI 2413 as follows:

a) Q1 data shall be provided on the last day of April
b) Q2 data shall be provided on the last day of July
c) Q3 data shall be provided on the last day of October
d) Q4 data shall be provided on the last day of January of the next year.

Regulated Annual operational and technical data, as well as annual financial and accounting data shall be provided no later than the last day of the month of March of the next year.

### 3.8 Cost Recognition and Acceptance for Tariff Determination

For the purposes of determination of revenue requirement hence electricity transmission tariffs using information provided in the regulatory accounting templates, PURC may reject with reason inclusion of any unjustifiable operating and capital costs. If the Commission decides to reject such costs during the tariff filing process, it will notify the Electricity Transmission Utility of its decision in line with PURC's Major Tariff Review Determination Process.

### 3.9 Information Related to Transactions with Affiliates

The Electricity Transmission Utility shall provide all types of transactions with affiliated companies such as loans, guarantees, purchases, sales, deposits, etc. Information on this transaction shall be submitted once a year as defined in the "Affiliated Cies Transactions Information" along with the main spreadsheet information model.

### 3.10 Burden of Proof

As a general principle, the burden of proof that an operator complied with the rules, principles and requirements imposed by the guidelines lies with the operator itself.

### 3.11 Audit

PURC has the right to appoint an independent auditor to conduct once a year, a regulatory audit of regulated activities. The objective of the audit shall be to verify compliance of the information provided by the Electricity Transmission Utility in line with the regulatory and accounting guidelines. The Electricity Transmission Utility shall give the auditor access to all the information he/she might require. Access shall be granted to the primary information sources and tools as required.

## Appendix-1 General Description of Content of Regulatory Accounting Template (Information Template)

### A1.1 General Information on Sheets

The PURC Regulatory Accounting Template is a spreadsheet information model (an **Excel file)** called "**PURC INFO DATA MODEL - ELECTRICITY TRANSMISSION**". The file is organised in different sheets of different nature.

The **MENU** sheet in the spreadsheet provides mainly a list of the different information sheets to be filled in with a direct access (link) to each of the following sheets:

- operator's sector (service)
- operator's activity
- operator's name
- data period for which the data are registered (year, quarter, month)
- date on which data were sent to PURC
- indications to inform that the file is an update of file previously filled in.

There are 7 sheets where **raw data** have to be filled by the Transmission Utility.

- 5 are related to financial and accounting information on: the assets and liabilities components of the balance sheet statement; the income statement; revenues data; operating expenditures data; capital expenditures data
- 1 sheet is dedicated to technical (physical) information
- 1 sheet is dedicated to organizational information (staff)

Different **indicators** are then automatically calculated on the basis of the raw data. The user should NOT enter any value here. The indicators are regrouped in 3 different sheets by nature of indicator:

- Financial Indicators
- Technical and Operational Indicators
- Cost and Labour Indicators

Definitions for each raw data shall be as defined in these Guidelines, Related Legislative Instruments and Documents as well as the operators' licences.

### A1.2 Data Entry in Raw Data Sheets

- Each sheet includes the following type of identification, confirming basically the nature and type of raw data.
- Figures should be generally entered only in colour cells that do not display a "-" sign. This sign means that the cell includes a formula (usually a sum in the raw data sheets) and figures for that cell will be automatically calculated on the basis of the data entries for the different components of that variable.
- Nevertheless, when the user does not have all the disaggregated values of a specific variable but has the total aggregated value, he or she can enter the total value and type it over the "-" sign. This should be an exception.
- The colour codes refer to historical, most recent and future (projected) years.

| | |
|---|---|
| | Historical values |
| | Last year values |
| | Forecasts values |

Once entered, historical values should not be changed the next year, if any of such historical values need to be changed PURC must to be notified.

### A1.3 Indicators Data Sheets

- Indicator sheet contains the type of indicators for which values are calculated.
- The colour codes have the same meaning as for the raw data sheets. **But NO value should be entered in these sheets.**
- These indicators sheets only display the values of the indicators if values have been properly entered in the raw data sheets (otherwise an Excel "error" message will be displayed in the indicator's cell).

## Appendix-2 Definition of Content of Raw Data Sheets in Information Template

### A2.1 Financial Info Data Sheets (Raw Data)

There are 5 different sheets dedicated to financial and accounting information.

- **Assets and liabilities** sheet: contains the main items of the balance sheet
- **P&L** statement sheet: contains the main items of the (Profit and Loss) income statement
- **Revenues** sheet: contains the main items of the company's revenues with details of the energy sales by type of customer
- **OPEX** sheet: contains the main items of the operational expenses with classification in fixed and variable expenses, as well as these corporate functions: operations; maintenance; commercialization (i.e. *retail and customer management costs*); general administration and management
- **Capital Costs** sheet: contains the main components of the investment schedule with classification of investments in four main types: renewal; expansion; quality enhancement and safety. Different main sub-components have provided within each investment group (land and building, transmission, motor vehicles, etc.).

The presentation of the balance sheet and income statement follow globally the standard national financial and accounting reporting formats used by the operators. The *full number* has to be entered for each financial and accounting value.

### A2.2 Technical Info Data Sheet (Raw Data)

The technical (physical) data refer to the following types of information:

- System Characteristics
- Technical Service performance in terms of Network Condition; Losses; Interruptions
- Technical Service Quality

Units to be used are indicated in the third column. Full numbers have to be entered for each value.

| ID | SYSTEM CHARACTERISTICS | UNITS | DEFINITION |
|---|---|---|---|
| | Total network length | **Km** | Number of km of the transmission network: total and by voltage level |
| | *69 kV lines* | **Km** | |
| | *161 kV lines* | **Km** | |
| | *225 kV lines* | **Km** | |
| | *330 kV lines* | **Km** | |
| | Transmission system capacity | **MWh** | Capacity of the transmission lines: total and by voltage level |
| | 69 kV lines | **MWh** | |
| | 161 kV lines | **MWh** | |
| | 225 kV lines | **MWh** | |

| | | | |
|---|---|---|---|
| | 330 kV lines | **MWh** | |
| | Total energy injected in transmission network / available for dispatch | **MWh** | Total of energy pushed through the transmission system |
| | Average System Demand on transmission network | **MW** | Average annual demand on transmission system |
| | Maximum System Demand on transmission network | **MW** | Annual Peak power demand on transmission system: total and type of client |
| | **Electricity Distributors** | | |
| | *ECG* | **MW** | |
| | *NEDCo* | **MW** | |
| | *Enclave Power company* | **MW** | |
| | **National Wholesale Bulk Customers** | **MW** | |
| | *Mines* | **MW** | |
| | *Others* | **MW** | |
| | **Foreign Customers** | | |
| | Sonabel | **MW** | |
| | Sonabel Youga Mines | **MW** | |
| | CIE | **MW** | |
| | Others | **MW** | |
| | Peak Power Demand Time (hour/day) | **hour/day** | Day and hour of the annual system peak load |

| | | | |
|---|---|---|---|
| | **TECHNICAL SERVICE PERFORMANCE** | | |
| | ***NETWORK CONDITION*** | | |
| | % of lines loaded in excess of 95% of capacity | % | % of lines loaded in excess of 95% of rated capacity during the period |
| | Total # of available hours @ capacity | **hours** | Number of hours over the period during which the system is available at capacity: Total and differentiated by voltage level lines |
| | *69 kV lines* | **hours** | |
| | *161 kV lines* | **hours** | |
| | *225 kV lines* | **hours** | |
| | *330 kV lines* | **hours** | |
| | Km of network subject to major repairs or replacement | **km** | Number of transmission network km repaired and/or replaced having led to an increase of asset gross value of the network – total and by voltage level |
| | *69 kV lines* | **km** | |
| | *161 kV lines* | **km** | |
| | *225 kV lines* | **km** | |
| | *330 kV lines* | **km** | |
| | Km of network in need of major repairs or replacement | **km** | Number of transmission network km in need of major repair and/or replacement that will lead to an increase of asset gross value of the network – total and by voltage level |
| | *69 kV lines* | **km** | |
| | *161 kV lines* | **km** | |
| | *225 kV lines* | **km** | |
| | *330 kV lines* | **km** | |
| | ***LOSSES*** | | |

| | | | |
|---|---|---|---|
| | Total Losses | | Total losses of the transmission network calculated on the basis of the energy delivered to the transmission system (available for dispatch) and the energy delivered to bulk customers and Discos: total and by voltage level |
| | *69 kV lines* | | |
| | *161 kV lines* | | |
| | *225 kV lines* | | |
| | *330 kV lines* | | |
| | ***INTERRUPTIONS*** | | |
| | Total number of outages | **#** | Annual number of outages: total and differentiated as scheduled and unscheduled |
| | Scheduled | **#** | |
| | Unscheduled | **#** | |
| | Average duration of outages | **Hrs** | Annual duration of outages: total and differentiated as scheduled and unscheduled |
| | Scheduled | **Hrs** | |
| | Unscheduled | **Hrs** | |
| | Average energy volume not supplied/outage | **MW/h** | Explicit |
| | Total number of load shedding periods | **#** | Explicit |
| | Total duration of load shedding periods | **#** | Explicit |
| | Average supply restauration time | **Hrs** | Explicit |
| | ***QUALITY*** | | |
| | Frequency variation (average/max/min) | % | System measures over the period |
| | Voltage variation (average/max/min) | % | System measures over the period |

### A2.3 Organisational Info Data Sheet (Raw Data)

This sheet includes only the data on the number of employees by activity. Only Full-Time employees should be considered and employees under direct contract with the company. Full figures have to be entered for these values.

## Appendix-3 Definition of Content of Indicator Data Sheets in Information Template

### A3.1 Financial Indicators sheet

This sheet includes the main financial indicators commonly used for monitoring and evaluation of companies. They are presented by type/objective of the evaluation.

- Profitability-related indicators
- Solvency-related indicators
- Robustness-related indicators
- Financial management-related indicators.

These indicators are listed in the operator's licenses (as well as their definition).

| ID | PROFITABILITY INDICATORS | UNITS | DEFINITION |
|---|---|---|---|
| | Gross Profit Margin | % | Gross (operational) profit on Operational income |
| | Net Profit Margin - before tax | % | Net profit before taxation on Total income (Turnover) |
| | Net Profit Margin - after tax | % | Net profit after taxation on total income (Turnover) |
| | Return on Equity | % | Net profit after taxation on shareholders' equity; equity = capital + surplus |
| | Return on Assets | % | Net profit after taxation on Total assets |
| | Return on Fixed Assets | % | Net profit after taxation on Total Fixed assets |
| | Return on capital employed | % | Net profit after taxation on (equity + noncurrent liabilities) |
| | **SOLVENCY INDICATORS** | | |
| | Current Ratio | % | Current Assets/Current Liabilities |
| | Quick Ratio | % | (Current Assets-Stocks)/Current Liabilities |
| | Acid-test Ratio | % | Cash/Current Liabilities |
| | **ROBUSTNESS INDICATORS** | | |
| | Total Debt to Equity | % | Total Debt/Equity |
| | Long-term Debt to Equity | % | (Non-current) Long term Liabilities/Equity |
| | Total Assets to Long-term Debt | % | Total assets/(Noncurrent) Long term Liabilities |
| | Total Assets to Equity | % | Total Assets/Equity |
| | Coverage of fixed charges | % | Net profit before tax/Fixed Charges |
| | **FINANCIAL MANAGEMENT-OPERATIONAL INDICATORS** | | |
| | Average Collection Period | Days | (Accounts receivables/Operating Sales)*365 |
| | Average Payment Period | Days | (Creditors/Credit purchases)*365 |
| | Stocks Turnover | # | Spare parts and materials purchases/Stocks |
| | Total Assets Turnover | # | Sales/Total Assets |
| | Fixed Assets Turnover | # | Sales/Fixed Assets |
| | Debtors Turnover | # | Credit sales revenues/debtors |
| | Creditors Turnover | # | Credit purchases/Creditors |
| | Sales Growth Rate | % | Operational sales growth<br>Current Year Sales/Previous year sales |

### A3.2 Technical and Operational Indicators Sheet

Technical and operational indicators are classified under the following headings.

- Losses
- Network condition
- Interruptions
- Network utilisation

| ID | LOSSES | UNITS | |
|---|---|---|---|
| | Transmission Losses | % | Import of figures registered in raw data sheets |
| | *69 kV lines* | % | |
| | *161 kV lines* | % | |
| | *225 kV lines* | % | |
| | *330 kV lines* | % | |
| | **NETWORK CONDITION** | | |
| | (Km of network subject to major repairs or replacement)/Total network km | % | Explicit |
| | *69 kV lines* | % | |
| | *161 kV lines* | % | |
| | *225 kV lines* | | |
| | *330 kV lines* | % | |
| | (Km of network in need of major repairs or replacement)/Total Network km | % | Explicit |
| | *69 kV lines* | % | |
| | *161 kV lines* | % | |
| | *225 kV lines* | % | |
| | *330 kV lines* | | |
| | **INTERRUPTIONS** | | |
| | Number of outages per network km | #/km | Explicit: total annual figure and differentiation by nature of outage (scheduled and unscheduled) |
| | *scheduled* | #/km | |
| | *unscheduled* | #/km | |
| | Energy Not Supplied | MW/h | Total energy lost in the transmission system during the period |
| | **NETWORK UTILIZATION** | | |
| | Load factor (Average Demand/Max Demand) | % | Explicit |
| | Capacity factor (Actual energy dispatched/Potential energy d@ capacity) | % | Explicit |
| | Utilization factor (Max Demand/System capacity) | % | Explicit |

### A3.3 Cost and Labour Indicators

These indicators are related to cost efficiency and labour efficiency.

| ID | COST EFFICIENCY | UNITS |
|---|---|---|
| | Total OPEX/employee | CEDI/employee |
| | TOTAL OPEX/kWh transmitted | OPEX/kWh |
| | TOTAL OPEX/km of network | CEDI/km |
| | CAPEX/kWh transmitted | CEDI/kWh |
| | **LABOUR EFFICIENCY** | |
| | Wheeling charge/employee | CEDI/employee |