

THE ENERGY AND WATER UTILITIES REGULATORY AUTHORITY ACT
(CAP 414)

THE ENERGY AND WATER UTILITIES REGULATORY AUTHORITY (TARIFF APPLICATION
AND RATE SETTING) RULES, 2017

(Made under Section 40(1))

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**PART I
PRELIMINARY PROVISIONS**

Citation **1.** These rules may be cited as the Energy and Water Utilities Regulatory Authority (Tariff Application and Rate Setting) Rules, 2017.

Application **2.** These rules shall govern matters related to tariff application, rate setting and approvals in water sector, electricity and natural gas sub-sectors in Tanzania Mainland.

Interpretation **3.** In these rules, unless the context otherwise requires:

Cap. 414 “the Act” means the Energy and Water Utilities Regulatory Authority Act;

“Applicable Law” means any principal law, treaty, convention, proclamation, regulation, rule, order or by-law that is customarily treated in Tanzania as having legally binding force and which is relevant to matters pertaining to the tariff regulation in the electricity, natural gas sub sectors and water sectors.

“Applicant” means a regulated electricity, natural gas or water utility.

“Authority” means the Energy and Water Utilities Regulatory Authority.

“Automatic electricity tariff adjustment” means a tariff adjustment by the regulated electricity utility based on changes in non-controllable costs – that is, costs that are beyond the control of the Utility (such as the costs resulting from foreign currency exchange rates, inflation and fuel costs) - which must be passed through to the customer tariff.

“Automatic water and sanitation tariff adjustment” means a tariff adjustment by the regulated water and sanitation utility based on changes in non-controllable costs – that is, costs that are beyond the control of the Utility (such as the costs resulting from currency devaluation, a change in bulk tariffs, power tariff, taxes) - which must be passed through to the customer tariff.

“Capital Costs” means actual costs prudently incurred by a licensee in connection with planning, development, financing, designing, engineering, procurement, supply, construction, installation, completion, commissioning, testing, insurance and ownership of licensed facility that is used and useful in relation to the provision of regulated service;

“capacity-weighted distance model” means setting the allowed revenue and creating a segmented network representation;

"Capital Work in Progress (CWIP)" means accumulated capital costs of an asset under construction/installation which will be capitalized or transferred to Plant in Service after commercial operation date;

"Cost Reflective Tariff" means a tariff which is based on all conceivable costs necessary to install, operate and maintain the assets and provide reasonable return to the licensee for rendering regulated services;

“capital expenditure” means the actual costs prudently incurred by a utility in procuring and restoring assets and investment costs such as planning, development, financing, design, engineering, procurement, supply, construction, installation, completion, testing, commissioning and insurance;

“customer” means a person who purchases or receives regulated services for own use or sale;

“customer class” means a category of persons who purchase or receive regulated services and are specified according to the use or sale;

"Emergency Tariff Application" means an application submitted by the Applicant with a Certificate of Urgency from the responsible Minister;

“Formal presentation” means a written presentation by an interested party who has registered for a public hearing;

Interested party” means a person with an interest in or who is affected by the subject matter of a public hearing

"Grants" means financial support from the government or donor agency to a licensee to meet operational or capital expenditures;

“Letter of No Objection” means any permit or approval granted by the sector ministry to any regulated public utility signifying the ministry’s consent to the tariff application submitted to EWURA;

"licensee" means a holder of a licence to conduct regulated activity and shall include any entity that is exempted from obtaining a licence pursuant to the provisions of the applicable law;

"operating expenditure" means a category of expenditure that a business incurs as a result of performing its normal business operations;

"postage stamp" means a fixed charge per unit of energy transmitted within a particular zone, regardless of the distance that the energy travels;

"Rate of Return" or "WACC" means the nominal rate of return per annum as determined by using nominal post-tax weighted average cost of capital;

"rate setting methodology" means a methodology approved by the Authority that a licensee uses to determine a tariff;

"Reasonable return" means the level of return that a licensee would seek for enterprises of similar risk.

"regulated activity" means:

- (a) electricity generation, transmission, system operation, market operation and distribution services;
- (b) natural gas processing, transmission and distribution services; and
- (c) water supply and sanitation services.

"reference utility" means an ideal or hypothetical efficient utility that is used to benchmark a licensee for estimation of operational costs of providing regulated services under the same conditions;

"Regulatory Asset Base" or "RAB" means the total cost to be depreciated over the economic life of the asset and shall include Capital Costs, lenders fees and commissions, interest during construction, the initial debt service reserve account value, development costs and any withholding tax applied and grossed up on interest paid to the lenders prior to the COD;

"Regulatory Year" means each period of three hundred and sixty-five days (or three hundred and sixty-six days in a "leap year") commencing on the Expansion Project COD and thereafter on each anniversary of such date until the end of the Term;

"Reseller" means the owner of an apartment building, residential or

commercial complex who is supplied with regulated services by a licensee and sell the services to the occupants of the reseller's premises;

"Revenue Requirement" represents the total amount of money a utility must collect from customers to pay all costs which includes operating and maintenance expenses, depreciation and a reasonable return on investment so as to properly operate and maintain its system and meet its financial obligations and shall be determined from time to time in accordance with Rule 19;

"Sub metering" means the installation of equipment to determine the actual usage of the regulated services for each residential unit in an apartment building, residential or commercial unit;

"Subsidy" means financial support from the government or donor agency to meet all or part of operating expenses and / or capital expenditure;

"tariff" means any charge, fee, price or rate charged for the provision of a regulated activity as shall be approved by the Authority;

"Tariff Period" means a period, in a designated number of years, for which the approved tariffs shall apply;

"Tariff Schedule" means the detailed set of rates and charges to be applied by a Licensee to its customers for the provision of regulated activities;

"Tariff Application Guidelines" means the guidelines issued by the Authority to regulate the procedure on applying for a tariff;

"Test year" means a period of measurement for a recent, consecutive twelve-month period consisting of a full year of operations where data is readily available;

"Tariff Application Top Sheet or "Top Sheet" means the cover sheet of the application containing information prescribed under rule 5;

Cap. 285 "Tribunal" means the Fair Competition Tribunal established under the provisions of the Fair Competition Act; and

"WACC" means the Weighted Average Cost of Capital.

PART II
TARIFF APPLICATION AND RATE SETTING PROCEDURE

Preparation and
Submission of
Tariff
Application

5. (1) A licensee shall apply to the Authority for tariffs pursuant to these rules and the respective sector Tariff Application Guidelines prepared by the Authority.

(2) The application under sub rule (1) shall be made at least one hundred and fifty (150) days prior to the applicability of the proposed tariff.

(3) Tariff review applications shall be prepared by licensees in accordance with the tariff application format prescribed in the guidelines prepared by the Authority;

(4) The licensee shall submit a complete tariff application accompanied with supporting documents and other information necessary to comply with the requirements of these rules;

(5) Notwithstanding the provisions of sub rule (4), an application for tariff shall, at least, be accompanied by the following information:

(a) Top Sheet which shall comprise of:

- (i) registered name of the applicant;
- (ii) full address of the applicant to which communications in the matter will be sent;
- (iii) full name, title and contact information of the applicant's chief executive officer or authorized person;
- (iv) verifiable reference of an applicant's license by EWURA (or a preceding Authority) to provide a regulated service;
- (v) a succinct statement of the regulatory action being requested; and
- (vi) The signature of the chief executive officer or a duly authorized officer of the applicant.

(b) In the water sector, evidence in the form of attendance register of participants that the Regulated water and sanitation utility has consulted a representative sample of its customers on the intention to review its existing tariff;

- (c) In the water sector, evidence in the form of Minutes of the Board that the Regulated water and sanitation utility has submitted to its Board proposed tariff that the applicant is requesting for approval;
- (d) implementation status of conditions contained in the previous order issued to the applicant, if any;
- (e) business plan which provides in detail the applicant's strategic objectives and implementation plan;
- (f) audited financial statements, covering the past three financial years and the most recent interim financial statements prior to the date of the application;
- (g) statement explaining how the proposed adjustment of the current tariff will benefit the customers;
- (h) financial implications to the applicant if the requested changes in tariff are not approved. These may include ability of the applicant to pay for its creditors, to meet contractual financial obligations, to service its debt; to cover all the fixed costs; and to spend on capital investment projects;
- (i) an affirmation that states that all contractual agreements that may have impact on the proposed tariffs have been included in the application; and
- (j) any other information required by the Authority.

(6) Notwithstanding the provisions of sub rule (5), an Applicant may be required to submit a letter of No Objection from respective ministry.

(7) The application submitted shall be in both hard copy and electronic form including a workable MS Excel worksheet and must be signed by the Chief Executive or an authorized representative of the applicant in accordance with the format prescribed in the guidelines;

(8) In case of any inconsistency on the information provided under sub rule (4), the hard copy shall prevail;

(9) When the application is not in compliance with the requirements under this rule, the Authority shall refer back or reject the application.

Authority's Own
Motion to
review tariff

6. – (1) The Authority, on its own motion, may initiate an inquiry to review a tariff of any licensee where:

- (a) there are changes in the circumstances that require tariff adjustment;
- (b) tariff charged by a licensee was not approved by the authority;
- (c) the applicable assumptions used to calculate the tariff have significantly changed; and
- (d) the licensee has failed to submit tariff review application to the Authority within the prescribed time.

(2) the licensee shall be obliged to submit any information required by the Authority when excising its power to review tariff on its own motion under sub – rule (1).

Exemptions **7.** – The Authority may grant exemption to a licensee from complying with a specified provision of these Rules upon an application with justification to the Authority.

Confidentiality **8.- (1)** All information submitted to the Authority for tariff application shall be presumed not to be confidential and shall become a matter of public record, scrutiny and inquiry.

(2) A licensee may request the Authority not to circulate specific data or information that it has provided to the Authority, provided, that only the Authority shall determine that such information is confidential.

(3) The Authority shall limit or prohibit the publication of any information to the public in the event it makes a determination that such information is confidential.

Emergency tariff application **9. (1)** A licensee may submit to the Authority an emergency tariff application to address an emergency situation.

(2) the application under sub rule 1 shall, at minimum contain the Top Sheet and certificate of Urgency from the Minister responsible of the sector.

(3) depending on the nature of the application, the Authority may deal with the emergency tariff application without undergoing a full inquiry and evaluation process.

Public Inquiry **10. – (1)** The Authority shall conduct an inquiry before exercising power to regulate any rate or charges.

(2) The inquiry under sub rule (1) shall involve issuance of a public notice on the application and the solicitation of comments from stakeholders and the general public regarding the reasonableness of the proposed tariff review.

(3) Any interested person may submit written comments to the Authority in connection with an application within twenty one (21) days from the date of the notice or ten (10) days after the public hearing meeting.

(4) The closure of the Public Inquiry process shall be twenty one (21) days after the date of the public notice or seven (7) days after the public inquiry meeting, whichever is later.

(5) The applicant shall submit to EWURA the responses to all raised comments within three (3) working days from the date of closure of the Inquiry process.

Intervention

11. – (1) Any person who wishes to intervene in the approval process for a tariff application must declare his intention to do so in writing within five (5) working days from the date of the public notice;

(2) The intention to intervene must clearly state the name and address of the person seeking intervention and the reasons for that intervention;

(3) The Authority shall, after reviewing an application to intervene, either grant or deny such application.

(4) The Authority shall, in the event it denies intervention, inform the applicant of such decision in writing, including the reasons thereof.

Evaluation of
tariff application

12. – (1) The Authority shall, after receipt of the application under rule 5, evaluate and decide on such application pursuant to the Act, sector legislation, these rules and the respective Tariff Application Guidelines.

(2) The tariff set by the Authority under sub-rule (1) shall be published in the Government *Gazette* and subject to the provisions of sub-rule (3) or other applicable legislation, be in use for a period of three years.

(3) Notwithstanding the provision of sub-rule (2), the Authority may review the tariff before the period of three years where it discovers that the tariff set is contrary to the provisions of the Act, sector legislation and these rules.

Evaluation
Criteria

13. – (1) All Tariff Application filed under these rules shall be evaluated by the Authority on the basis of and in accordance with the following criteria:-

(a) tariffs shall reflect the average cost of service of each licensee;

(b) tariffs shall include a mechanism to allow licensee a benefit from and penalties for failure to achieve, benchmarks set by the Authority through yardstick regulations for, inter alia and without limiting the generality of such regulation, capacity utilization, operation and maintenance and unaccounted regulated services;

(c) tariffs shall be determined in a manner which promotes continued reasonable investment in equipment, facilities and research and development for qualitative and quantitative improvement in the provision of regulated activities;

(d) tariffs shall be determined in a manner that protects consumers

against monopolistic and oligopolistic pricing;

- (e) tariffs shall generally be determined taking into account a reasonable rate of return, prudent operation and maintenance costs, depreciation, government levies and if applicable financial services and cost of regulated services;
- (f) while determining the value of a licensee's fixed assets in operation, the value of assets funded wholly or partially, on a nonrefundable basis by a person other than a licensee shall be excluded to the extent of such contribution;
- (g) only such capital expenditure shall be included in the rate base as is prudent, cost effective and economically efficient; and
- (h) depreciation of a licensee's assets shall be allowed on the basis of their useful life as may be determined from time to time by the Authority.

(2) The Authority shall strike a balance, to the extent possible, in order to optimize the benefits to all persons likely to be affected by the Authority ' s determination of the tariffs when evaluating the tariff application.

Decision of the Authority

14.-(1) The Authority shall, after due consideration of all material facts to the application, issue a Tariff Order prescribing the approved tariff and charges to be applied by the applicant in providing regulated services.

(2) No licensee shall charge any customer a tariff exceeding that approved by the Authority pursuant to these rules and published in the Government Gazette.

Periodic Tariff adjustments in the electricity sub-sector

15. – (1) The Authority shall, upon application by a licensee:

- (a) on quarterly basis, review and adjust the tariffs for costs associated with fuel and exchange rate fluctuation;
- (b) on half yearly basis adjust the tariffs for costs associated with inflation;
- (c) on annual basis, review and adjust the tariffs based on performance of the planned projects; and
- (d) adjust the tariff accordingly, whenever the licensee receives a tax exemption, grant or a subsidy from the Government.

(2) The tariff adjustments for costs associated with fuel, exchange rate fluctuations and inflation shall be done in accordance with the formula provided for in the First Schedule.

(3) Notwithstanding the generality of sub-rule (1), the Authority may, on its

own motion, effect periodic tariff adjustment.

(4) The Authority shall, on quarterly, half yearly and annual basis, as the case may be, publish the adjusted tariffs under sub-rule (1), in newspapers of wide circulation.

Tariff
adjustments in
the water sector

16. – (1) In case of a water sector, the Authority shall, upon application by a licensee, conduct tariff adjustment before the end of a multi-year period on occurrence of the following:

- (a) An increase in electricity tariff;
- (b) A change in the tariff charged by a licensed bulk water supplier;
- (c) a change in law that relate directly to water or wastewater services, the environment;
- (d) a change in the required service or performance standards;
- (e) a change in the service area;
- (f) an unforeseen drop-out of big customers; or
- (g) significant change in the underlying assumptions used in determining the multiyear tariff.

(2) Tariff adjustment shall either be Automatic Tariff Adjustment or Extra-Ordinary Review and the related procedures shall be stipulated in the respective Tariff Application Guidelines for Regulated Water and Utilities prepared by the Authority.

Sub metering by
Resellers

17.- (1) Any person who owns an apartment building, residential or commercial complex and receives electricity, water or natural gas from a licensee may provide for sub metering of each dwelling house or rental unit for the measurement of quantity of electricity, water or natural gas consumed by the occupant of the unit.

(2) A person who has provided for sub metering under sub rule (1) shall charge each user a tariff rate similar to the tariff the user would pay if receiving services directly from a licensee.

(3) Notwithstanding the provision sub-rule (1) in the absence of sub-meters, energy and other electricity charges to the tenants shall be distributed proportionally based on the agreed criteria provided that the cost to be incurred by the tenants shall not exceed the bill paid by the owner of the premises to the utility.

Offences

18. Any person who:

- (a) offers for sale or sells regulated services at a tariff that exceeds the approved tariff and charges;

- (b) either individually or jointly with another person creates an artificial shortage of the regulated services;
- (c) refuses or fails to conduct its licensed activity in the absence of an authorization to do so by the Authority; or
- (d) fails to implement conditions stated in the Tariff Order
commits an offence and shall be liable to the applicable fines prescribed in the sector legislation or five hundred thousand shillings whichever is higher.

PART IV TARIFF SETTING METHODOLOGY

Revenue Requirement

19. (1) The Authority shall use a Revenue Requirement Methodology in determining tariff for regulated sectors.

(2) The Revenue Requirement methodology shall be framed on the principles that revenues of the regulated utilities have to cover their operating and maintenance expenses, depreciation, taxes and shall ensure a fair return on assets employed in rendering regulated services. The revenue requirement shall be determined by the following formula:

$$RR = O\&M + D + T + (WACC \times RAB)$$

Where:

- RR means Revenue Requirement for the regulatory year;
- O&M means Operation and maintenance expenses;
- D means Depreciation charge;
- T means Corporate Taxes;
- WACC means Weighted Average Cost of Capital; and
- RAB means assets of the licensee which are used and useful in the provision of regulated service to the customers.

(3) For the purpose of sub rule (2):

- (a) Operating and maintenance expenses shall include all expenditure just and reasonable incurred wholly and exclusively for the provision of regulated activity and shall meet the following qualification criteria;
 - (i) expenses must be incurred in an arm's length transactions;
 - (ii) expenses must be incurred in the normal operation of the licensee including a reasonable level of refurbishment, repairs and maintenance costs;
 - (iii) expenses must be prudently incurred after careful consideration of available options and such consideration would entail a competitive bidding and transparency in the procurement process;

- (b) Regulatory Asset Base shall be determined as per the First Schedule and shall include all used and useful assets in the provision of regulated activity and shall be considered in the determination of annual depreciation charge, irrespective of sources of financing;
- (c) The Regulatory Asset Base shall cover all assets employed by the applicant in the provision of regulated activities. The said assets should be prudently designed, competitively procured and or constructed.
- (d) The Return on Regulatory Asset Base for the applicant shall be calculated using the Weighted Average Cost of Capital (WACC) which shall be determined according to the First Schedule.
- (e) The depreciation charge of the allowed revenue requirement shall be computed on the Historical cost of the Regulatory Asset Base using a straight line method over the useful economic life of the asset or project according to the First Schedule;
- (f) Subject to the requirements of the Income Tax Act, any taxes including corporate taxes paid or to be paid by the licenses may be considered in the determination of revenue requirement provided that exempted taxes in the provision of regulated services shall not be included in the determination of revenue requirement.

(4) Notwithstanding the generality of sub rule (2) and (3), the Authority may specify provisions that are specific to the water sector, the natural gas sub-sector or different segments of the electricity sub-sector for determination of the revenue requirement.

Electricity tariff setting methodology

20. Methodologies for determination of the electricity generation, transmission, system operation, market operation, distribution and supply tariffs shall be as prescribed in the Second Schedule.

Natural Gas tariff setting methodology

21. Methodologies for determination of natural gas processing, transmission and distribution tariff shall be in accordance with Petroleum (Natural Gas Pricing) Regulations, 2016, Government Notice No. 285 of 2016

Water supply and sanitation tariff setting method

22. Methodologies for determination of water supply and sanitation tariffs shall be as prescribed in the Third Schedule.

PART V
GENERAL PROVISIONS

- Summoning process **23.** – (1) The Authority may summon any person it believes to be capable of supplying information necessary to assist it in fulfilling its obligations.
- (2) A summon made under sub-rule (1) may require a person to:
- (a) furnish information in writing;
 - (b) produce any document to the Authority; or
 - (c) appear before the Authority to give evidence.
- Offences **24.** Any person who without lawful excuse refuses or fails to comply with a summons to provide information commits an offence and shall, on conviction, be liable to fine not exceeding three hundred thousand shillings or imprisonment for a term not exceeding fifteen months or to both.
- Appeal **25.** Any person who is aggrieved by the decision of the Authority made under these Rules may appeal to the Tribunal pursuant to the provisions of the Fair Competition Act.
- General penalty **26.** Any person who breaches any provisions of these rules for which no specific penalty is prescribed shall be liable to a fine not exceeding five hundred thousand shillings or prescribed fine in the applicable sector legislation whichever is higher.
- Revocation of GN..... **27.** - (1) The Electricity (Tariff Setting) Rules, 2013 are hereby revoked.
- (2) Notwithstanding the revocation of the Electricity (Tariff Setting) Rules, 2013, all orders, exemptions or directives made or issued or deemed to have been made or issued under those rules shall be deemed to have been made under these rules, and shall remain in force until revoked or otherwise expire or cease to have effect.
- Authority to Supplement Procedures **28.** The Authority may, in the event procedures are not provided for under these rules, do whatever is necessary and permitted by the Act, the EWURA Act and relevant laws to enable it to effectively and completely adjudicate on any matter before it.

FIRST SCHEDULE

(Made under Rule 19)

GENERAL METHODOLOGY FOR DETERMINATION OF SOME COMPONENTS OF REVENUE REQUIREMENT

Regulatory Asset Base

1. (1) The Regulatory Asset Base (RAB) shall be determined using the following methodology:

$$RAB = \frac{(RAB_t + RAB_{t-1})}{2}$$

whereas:

RAB_t means Regulatory Asset Base at the end of year t (current year)

RAB_{t-1} means Regulatory Asset Base at the end of year t-1

- (2) The Regulatory Asset Base at the end of year t shall be determined by the following formula:

$$RAB_t = RAB_{t-1} + CAPEX_t - S_t - D_t + \Delta WC_t$$

whereas:

RAB_t means Regulatory Asset Base on year t (current year)

RAB_{t-1} means Regulatory Asset Base in year t-1

$CAPEX_t$ means capital additions during year t,

S_t means asset disposals during year t

D_t means depreciation in the reporting year, and

ΔWC_t means change in the working capital in the reporting year.

- (3) RAB shall consist of all assets that are “used and useful” in provision of regulated services.

Weighted Average Cost of Capital

2. (1) The Weighted Average Cost of Capital (WACC) after tax, applicable to the Regulatory Asset Base (RAB) shall be determined using the formula:

$$WACC = \left(\frac{E}{D + E} \times K_e \right) + \left[\frac{D}{D + E} \times K_d \times (1 - T_c) \right]$$

whereas:

“WACC” means the rate of return, expressed as percentage, required by the providers of capital (both debt and equity) which is approved by the Authority;

“E” means the market value of equity expressed in TZS;

“D” means the market value of debt expressed in TZS;

“E+D” market value of the Regulated Licensee expressed in TZS;

“K_e” means the cost of equity expressed as a percentage as determined

in accordance with sub- paragraph (2);
“K_d” means the weighted average cost of debt expressed as percentage; and

“T_c” means applicable statutory corporate tax rate expressed in percentage.

(2) The cost of equity shall be calculated using the Capital Asset Pricing Model (CAPM) as given hereunder:

$$R_e = R_f + \beta_e \times [R_m - R_f]$$

whereas:

R_e means the return on equity capital;

R_f means the risk free rate of return;

β_e means the equity beta as determined in sub-paragraph (3); and

[R_m-R_f] means the return over the risk free rate that investors would expect in order to invest in a well-diversified portfolio of equities (otherwise referred to as the equity or market risk premium).

(3) The equity beta shall be determined using the following formula:

$$\beta_e = \beta_a \times \left(1 + \frac{D}{E}\right)$$

whereas:

β_e means the return on equity capital;

β_a means the asset beta; and

D/E means the debt to equity ratio.

(4) The cost of debt capital shall be calculated by the following formula:

$$R_d = R_f \times DRP$$

whereas:

R_d means the cost of debt;

R_f means the risk free rate of return; and

DRP means the debt premium, that is, the increment above the risk free rate that reflect the additional risk of borrowing compared with Government bonds.

(5) In the event that some parameters in the computation of the cost of equity are not readily available in the Tanzanian market, the applicant may suggest the cost of equity applicable to utilities in other countries with similar conditions as that of Tanzania.

Regulatory
Depreciation

3. Regulatory depreciation of each asset for any Regulatory Year ‘t’, shall be determined using a straight line method using the following formula-

$$D_t = \frac{RAB}{N}$$

whereas:

- D_t means the annual regulatory depreciation for the Regulatory Year 't';
- RAB means Regulatory Asset Base of each asset as determined in paragraph 1 of this Schedule; *and*
- N means capital redemption period expressed as a number of regulatory years based on the remaining useful economic life of each regulatory asset.

SECOND SCHEDULE

(Made under Rule 20)

PART I

GENERATION RATE SETTING METHODOLOGY

Generation
Service Charge

1. - (1) Generation Service Charge (GSC) shall include the Weighted Average Cost of Generation and Power Purchases as determined under sub-paragraph (2).

Weighted
Average Cost of
Generation

(2) The Weighted Average Cost of Generation (WACG) shall be determined as follows:

$$WACG = \frac{\sum_{i=1}^n G_i X_i + (FC_t * IC_t)}{\sum_{i=1}^n X_i}$$

whereas:

- X_i means forecast total units planned to be generated by generator i in year t and expressed in MWh;
- G_i means benchmark generation costs of generator i and shall include all known variable costs;
- FC_t means benchmark fixed costs (capacity costs) expressed in TZS/MW as determined in sub-rule (3); and
- IC_t means installed capacity of used and useful plants in year t expressed in MW.

(3) Fixed costs for generation shall include the cost of investment annuity (the fixed assets multiplied by the weighted average cost of capital plus depreciation) and the fixed operation and maintenance costs as follows:

$$Fixed\ Cost = (FA * WACC) + DP + Fixed\ O\&M$$

whereas:

- FA means Fixed Assets;
- WACC means the Weighted Average Cost of Capital as determined in paragraph 2 of the First Schedule; and
- DP means the Regulatory Depreciation calculated using the Straight Line Depreciation Method as per paragraph 3 of the First Schedule.

PART II

TRANSMISSION SYSTEM OPERATOR RATE SETTING METHODOLOGY

Transmission Pricing **1.** Transmission tariff shall be determined using a postage stamp methodology.

Determination of Revenue Requirement **2.** The Revenue Requirement of the Transmission System Operator shall be determined using the following methodology:

$$RR = (RAB * WACC) + D + O\&M - R$$

whereas:

RR means the Revenue Requirement,

RAB means the average Transmission Regulatory Asset Base which shall be determined as per paragraph 1 of the First Schedule;

WACC means Weighted Average Cost of Capital which shall be determined as per paragraph 2 of the First Schedule;

D means the regulatory depreciation which shall be determined using the straight line method in accordance to paragraph 3 of the First Schedule;

O&M means the operation and maintenance costs which shall be prudently incurred for the provision of service by the Transmission System Operator in accordance with the technical standards used in Tanzania and applicable legal regulations.

R means other revenues related to the regulated activity including the net amount (revenues - expenditures) realised through the cross-border trade.

Determination of Transmission Tariff **3.** The transmission tariff shall comprise the transmission tariff paid by Producers, Distribution Network Operator and eligible customers and shall be determined in accordance with the following formula;

$$T_{tso} = \frac{Rg_{tso} + Rd_{tso} + Re_{tso}}{kWh}$$

whereas:

T_{tso} means the Average Transmission Tariff;

R_{g_{tso}} means Revenue Requirement in respect of transmission service rendered to generators which shall consist of energy and capital related components;

R_{d_{tso}} means Revenue Requirement in respect of transmission services rendered to Distribution Network Operators which shall consist

of energy and capital related components;
Re_{ISO} means Revenue Requirement in respect of transmission services rendered to eligible customers which shall consist of the energy and capital related components; and
kWh means annual units transmitted through the transmission line.

PART III

SYSTEM OPERATOR RATE SETTING METHODOLOGY

System Operation Pricing 1. System Operation fee shall be charged to customers that are connected to the voltage levels of 400 kV, 220 kV, 132 kV and 66 kV and shall include the following elements:

- (a) Active electric energy injected in the transmission network by generators connected to the transmission network;
- (b) Take-off of active electric energy; and
- (c) Ancillary services including excessive take-off of reactive electric energy.

Determination of Revenue Requirement 2. The Revenue Requirement of the System Operator shall be determined using the following methodology:

$$RR_{SO} = O\&M + D - R$$

where,

RR_{SO} means total Revenue Requirement to be generated from customers ($R_{c_{so}}$) and generators ($R_{g_{so}}$),

D means the regulatory depreciation which shall be determined by the straight line method in accordance to paragraph 3 of the First Schedule;

O&M means the operation and maintenance costs which shall be prudently incurred for the provision of service by the System Operator in accordance with the technical standards used in Tanzania and applicable legal regulations.

R means other revenues related to the regulated activity including the net amount (revenues - expenditures) realised through the cross-border trade.

Determination of System Operator's Fee 3. The System Operator's fee shall be paid by generators, Transmission System Operator, Distribution Network Operators and eligible customers, and shall be determined in accordance with the following methodology;

$$T_{so} = \frac{Rg_{so} + Rt_{so} + Rd_{so} + Re_{so}}{kWh}$$

Where,

T_{so} means the Average System Operator's Fee

Rg_{so} means Revenue Requirement in respect of the System Operator's services rendered to generators which shall consist of energy and capital related components;

$R_{t_{so}}$ means Revenue Requirement in respect of System Operator's services rendered to the Transmission System Operator which shall consist of energy and capital related components.

$R_{d_{so}}$ means Revenue Requirement in respect of System Operator's services rendered to Distribution System Operators which shall consist of energy and capital related components and

$R_{i_{so}}$ means Revenue Requirement in respect of System Operator's services rendered to eligible customers which shall consist of energy and capital related components.

kWh means annual active electric energy taken over by customers

PART IV

MARKET OPERATOR RATE SETTING METHODOLOGY

Transmission
Pricing

1. Market Operation Tariff shall be charged in respect of market operation services offered to customers connected to voltage levels of 400 kV, 220 kV, 132 kV and 66 kV.

Determination of
Revenue
Requirement

2. The Revenue Requirement of the System Operator shall be determined using the following methodology:

$$RR_{IMO} = O\&M + D - R$$

where,

RR_{IMO} means the Revenue Requirement,

D means the regulatory depreciation which shall be determined by the straight line method;

$O\&M$ means the operation and maintenance costs which shall be prudently incurred for the provision of market services by the Market Operator; and

R means other revenues related to the regulated activity including the net amount (revenues - expenditures) realised through the cross-border trade.

Determination of
Market Operator's
Fee

3. The Market Operator's fee shall be charged to generators, Transmission System Operators, Distribution Network Operator and eligible customers, and shall be determined in accordance with the following methodology;

$$T_{mo} = \frac{Rg_{mo} + Rt_{mo} + Rd_{mo} + Re_{mo}}{kWh}$$

where,

T_{mo} means the Average Market Operator's Tariff;

Rg_{mo} means Revenue Requirement in respect of Market Operator's services rendered to generators which shall consist of energy and capital related components;

Rt_{mo} means Revenue Requirement in respect of Market Operator's services rendered to Transmission System Operators which shall consist of energy and capital related components;

Rd_{mo} means Revenue Requirement in respect of Market Operator's services rendered to Distribution Network Operators which shall consist of energy and capital related components;

Re_{mo} means Revenue Requirement in respect of Market Operator's

services rendered to eligible customers which shall consist of
energy and capital related components;
kWh means annual active electric energy taken over by customers

PART V

DISTRIBUTION AND SUPPLY TARIFF SETTING METHODOLOGY

Distribution and
Supply Cost

1. (1) Distribution and Supply cost shall be determined using the following formula:-

$$\mathbf{D\&S = O\&M + (WACC * RAB) + D + NL + DN}$$

whereas:

- "D&S" means the Distribution and Supply cost expressed in TZS;
- "O&M" means Operation and maintenance Costs;
- "WACC" means the rate of return, expressed as percentage, as determined paragraph 2 of the First Schedule;
- "RAB" means the Regulatory Asset Base (RAB) determined based on historical costs applying the formula stipulated in paragraph 1 of the First Schedule;
- "D" means the Depreciation as determined in paragraph 3 of the First Schedule;
- "NL" means Capital and O&M expenditure required to reduce Network Losses
- "DN" means Capital expenditure required for expansion of the distribution network

(2) The costs in sub-paragraph (1) shall be approved by the Authority based on efficiency in the sense of cost and technically compliant, sufficient to meet demand and quality to meet supply.

Operation and
Maintenance
Expenses

2. Operation and Maintenance Expenses shall be determined by using the Reference Utility Model or projections based on historical costs, whichever is lower.

Capital
Contribution

3. Asset acquired through Government/consumer contribution or funds allowed in tariff for the expansion of the distribution network shall be considered in the calculation of depreciation but shall be excluded from the calculation of Rate of Return.

Network Losses

4. Cost associated with Network Losses may be considered in the determination of distribution expenses. The Authority shall determine such costs on an annual basis.

Distribution
Network
Expansion

5. Funds for expansion of the distribution network may be considered by the Authority if it is proven that the Rural Energy Agency (REA) can't finance such projects, the utility cannot source financing from financial institutions or the available funds from an approved tariff will not be sufficient to finance the approved expansion plan.

PART VI

AUTOMATIC ADJUSTMENT AND PASS THROUGH COSTS

Fuel Cost Charge (1) All electrical energy units purchased by electricity customers shall be liable to a Fuel Cost Charge which shall be calculated in accordance with the following formula:

Fuel Cost Charge in TZS/kWh calculated to the nearest **Shilling**:

$$= \frac{1}{1-L} \times \left\{ \frac{\sum C_i G_i S_i + \sum P_i}{G} \right\} \times 100$$

Where:

- C_i means actual price in TZS/litre or TZS/mmBTU paid by the Utility or Electric Power Producers for fuel consumed by Plant i , where $i= 1, 2, \dots n$, during the quarter preceding the first month of the following quarter at all existing thermal plants on the Interconnected System and the Off-Grid System, as the case may be. This shall also include other thermal power plants to be constructed and in respect of which the distribution or supply licensee shall enter into Power Purchase Agreements with Electric Power Producers for the supply of electricity;
- G_i means all units generated and or purchased by the utility from Electric Power Producers' Plant i , where $i= 1, 2, \dots, n$, during the quarter preceding the first month of the following quarter at each existing thermal plant on the Interconnected System and the Off-Grid System, and imports/exports from Uganda Electricity Transmission Company Limited, Zambia Electric Company, Kenya Power Lighting Company adjusted for system losses as the case may be. This shall also include other thermal power plant(s) to be constructed and in respect of which the distribution or supply licensee shall enter into Power Purchase Agreement(s) with Electric Power Producer(s) for the supply of electricity;
- S_i means Specific fuel consumption in litre/kWh or mmBTU/kWh for any thermal plants;
- P_i means sum of fuel displacement costs and other pass through charges based on power purchased from Power Plant i , where i

=1, 2 ... n., Emergency Power Plants and other power plants to be constructed in respect of which a generation licensee shall enter into a Power Purchase Agreement with Electric Power Producers for the supply of electricity to a distribution or supply licensee.

All fuel displacement and pass through costs shall be converted to Tanzania Shillings using the actual mean exchange rate obtained by the licensee as reported by the Bank of Tanzania in the quarter preceding the first month of the following quarter;

G means total of all units generated by the utility, purchased by the utility from Electric Power Producer(s), and net imports during the quarter preceding the first month of the following quarter, including Off-Grid power stations and imports; and

L means the target System loss factor in transmission and distribution system.

Foreign Exchange
Rate Fluctuation
Adjustment

2. All electrical energy units purchased by electricity customers shall be liable to a Foreign Exchange Rate Fluctuation Adjustment which shall be calculated in accordance with the following formula:

Foreign Exchange Rate Fluctuation Adjustment in TZS/kWh calculated to the nearest **Shilling**:

$$FERFA = \frac{1}{1-L} \left\{ \frac{(\sum(F_{t-1} \times Z_t \times X_o)) + (\sum(P_{t-1} \times Z_t \times X_o)) + (\sum(S_{t-1} \times Z_t \times X_o))}{G} \right\} \times 100$$

Where:

F_{t-1} Sum of the foreign currency costs on non fuel cost items incurred by a generation licensee in the quarter preceding the first month of the following quarter;

P_{t-1} Sum of the foreign currency costs paid by the Transmission System Operator and the distribution or supply licensee in the quarter preceding the first month of the following quarter;

S_{t-1} Sum of the foreign currency costs paid by the System and Market Operators in the quarter preceding the first month of the following quarter;

G means Total of all units purchased by a distribution or supply licensee from Electric Power Producer(s), generated by a generation licensee and net imports during the quarter preceding the first month of the following quarter, including

Off-Grid power stations and imports;

L means the Target System loss factor in transmission and distribution systems; and

Z_t The factor Z_t is the proportionate change in the exchange rate (X_t) in the current Billing Period t from the Base Exchange rate (X₀) in the base period and shall be determined according to the following formula:

$$Z_t = \frac{X_t - X_0}{X_0}$$

where:

X_t actual mean exchange rate obtained by the licensee as reported by the Bank of Tanzania for the quarter preceding the first month of the following quarter;

X₀ mean exchange rate which was used in the computation of approved tariffs for the given tariff period;

Inflation
Adjustment

3. All Tariffs for electrical energy specified above shall be liable to an Automatic adjustment for inflation at the end of every six month period starting from the date to be specified by the Authority.

The effect of domestic and international inflation on cost of supply shall be calculated in accordance with the following formula:

$$INFA_t = \frac{1}{1-L} \times \left(\frac{INFA_{G\&N} + INFA_{T\&D} + INFA_{SO\&MO}}{G_p} \right) \times 100$$

where,

INFA_t = Total Inflation Adjustment in TZS/kWh for the half year period t. The first adjustment shall be effected on the date to be specified by the Authority.

L = means the Target System loss factor in transmission and distribution systems.

G_p= Total Units generated and/or purchased by a distribution or supply licensee from Electric Power Producer(s), during the half-year Adjustment Period. This shall also include other power plants to be constructed and in respect of which a distribution or supply licensee shall enter into a Power Purchase Agreement with Electric Power Producers.

INFA_{Gen} means a total of inflation adjustment relating to non-fuel costs of generation facilities of the licensee which shall be determined as follows:

$$INFA_{Gen} = \sum INFAKP_i$$

Where

INFAKP_i means Specific Inflation Adjustment in half-year period, relating to generation licensee's contracted plant i, which shall be determined as follows:

$$((KP_i \times FOMCR_{bi}) + (GK_i \times VOMCR_{bi})) \times (0.7 \times 0.3) \left(\frac{CPIU_t}{CPIU_b} - 1 \right) + 0.3 \left(\frac{USCPI_t}{USCPI_b} - 1 \right)$$

Where:

KP_i means contracted capacity for generation licensee's plant i in kW.

FOMCR_{bi} means the base Fixed Operation and Maintenance Charge for generation licensee's plant i in TZS/kW/year, divided by two

GK_i means Units purchased from licensee's plant i in kWh in the half-year Adjustment Period.

VOMCR_{bi} means the base Variable Operation and Maintenance Charge or variable energy charge rate as applicable, for generation licensee's plant i in TZS/kWh

CPIU_t means the Underlying Consumer Price Index for the month of March for adjustments effected in the period July – December; and September for adjustments effected in the period January – June every year as posted by the Tanzania National Bureau of Statistics.

CPIU_b means the Underlying Consumer Price Index for September 2017 as posted by Tanzania National Bureau of Statistics.

USCPI_t means the “Consumer Prices Index for all urban consumers (CPI - U) for the US city average for all items 1982 - 84 =100” as published by the United States Department of Labour Statistics index for the month of March for adjustments effected in the period July – December; and for September for adjustments effected in the period January – June every year.

USCPI_b means the “Consumer Prices Index for all urban consumers (CPI - U) for the US city average for all items 1982 - 84 =100” as published by the United States Department of Labour Statistics index for September 2017.

INFA_{T&D} Is the Specific Inflation Adjustment in half-year period, relating to transmission and distribution operation and maintenance costs,

which shall be determined as follows:

$$INFA_{T\&D} = TDOM_b \left[0.7 \times 0.3 \left(\frac{CPIU_t}{CPIU_b} - 1 \right) + 0.3 \left(\frac{USCPI_t}{USCPI_b} - 1 \right) \right]$$

Where,

$TDOM_b$ means the transmission and distribution network operation and maintenance costs excluding depreciation of assets and provision for bad debts in the previous year, divided by two.

$CPIU_b$ means the Underlying Consumer Price Index for September 2017 as posted by Tanzania National Bureau of Statistics.

$CPIU_t$ means the Underlying Consumer Price Index for the month of March for adjustments effected in the period July – December; and September for adjustments effected in the period January – June every year as posted by the Tanzania National Bureau of Statistics.

$USCPI_b$ means the “Consumer Prices Index for all urban consumers (CPI - U) for the US city average for all items 1982 - 84 =100” as published by the United States Department of Labour Statistics index for September 2017.

$USCPI_t$ means the “Consumer Prices Index for all urban consumers (CPI - U) for the US city average for all items 1982 - 84 =100” as published by the United States Department of Labour Statistics index for the month of March for adjustments effected in the period July – December; and for September for adjustments effected in the period January – June every year.

$INFA_{SO\&MO}$ Is the Specific Inflation Adjustment in half-year period, relating to the operation and maintenance costs of the System Operator and Market Operator, which shall be determined as follows:

$$INFA_{SO\&MO} = SMOM_b \left[0.7 \times 0.3 \left(\frac{CPIU_t}{CPIU_b} - 1 \right) + 0.3 \left(\frac{USCPI_t}{USCPI_b} - 1 \right) \right]$$

where,

$SMOM_b$ means the System and Market Operators’ base costs of operation and maintenance excluding depreciation of assets and provision for bad debts in the previous year, divided by two.

$CPIU_b$ means the Underlying Consumer Price Index for September 2017 as posted by Tanzania National Bureau of Statistics.

$CPIU_t$ means the Underlying Consumer Price Index for the month of March for adjustments effected in the period July – December; and September for adjustments effected in the period January – June every year as posted by the Tanzania National Bureau of Statistics.

$USCPI_b$ means the “Consumer Prices Index for all urban consumers (CPI -

U) for the US city average for all items 1982 - 84 =100" as published by the United States Department of Labour Statistics index for September 2017.

USCPI_t means the "Consumer Prices Index for all urban consumers (CPI - U) for the US city average for all items 1982 - 84 =100" as published by the United States Department of Labour Statistics index for the month of March for adjustments effected in the period July – December; and for September for adjustments effected in the period January – June every year.

Note:

Any difference between the total inflation costs and the actual billed amount for a given half year adjustment period shall be adjusted for in the following half year period.

THIRD SCHEDULE

(Made under Rule 22)

WATER SUPPLY AND SANITATION TARIFF SETTING METHODOLOGY

Revenue
Requirement

1. The Revenue Requirement for a water utility for any Regulatory Year 't' shall be calculated in accordance with the formula:

$$RR_t = OM_t + D_t + T_t + WACC \times RAB_t$$

where:

- RR_t = Revenue Requirement for year t including all corrections that are carried over from the previous multiyear period;
- OM_t = Operation and Maintenance expenses in year t;
- D_t = Depreciation charge in year t;
- T_t = Corporate Taxes (if any) in year t;
- WACC = Weighted Average Cost of Capital; and
- RAB_t = Regulatory Asset Base in year t

Operation and
Maintenance
Costs

2. Operation and Maintenance expenses in the regulatory year 't' (OM_t) shall include prudently incurred production costs, distribution costs, repair and maintenance costs, sewerage disposal costs, personnel costs, administration costs, business promotion expenses, events and donation expenses and financial costs as described in the Tariff Setting Guidelines for Regulated Water and Sanitation Utilities, 2017 as amended from time to time.

Regulatory
Depreciation

3. Regulatory Depreciation (Dt) in respect of the Regulatory Asset Base for any Regulatory Year 't', and shall be calculated using straight line depreciation method based upon the remaining useful life of the asset as indicated in the formula below.

$$Dt = \frac{C - RV}{EL}$$

Whereas

Dt = Regulatory depreciation for regulatory year t;

C = Cost or Revalued asset value;

RV = Estimated residual value;

EL = Estimated economic life.

Regulatory Asset
Base

4. Regulatory Asset Base (RAB) shall be computed as follows:

$$RAB = NCA - Grants + AWC$$

Whereas

NCA = Non-current assets;

Grants = Grants or any third party contributions;

AWC = Allowable working capital.

5. Allowable working capital means that working capital shall not exceed 45 days per annum and this limit is calculated as the annual Operation and Maintenance Expenses divided by eight, i.e.:

$$\text{Allowable Working Capital} \leq \frac{\text{Annual O \& M Expenses}}{8}$$

Weighted
Average Cost of
Capital

6. WACC shall be computed as as described in the following formula:

$$WACC = r_D \times (1 - t) \times (D/V) + r_E \times (E/V)$$

Where:

r_D = cost of debt

$1-t$ = tax adjustment for interest expenses

D = Total value of debt as in the Applicant's recent Statement of Financial Position

V = total value of capital as in the Applicant's recent Statement of Financial Position

r_E = cost of equity

E = Total value of equity as in the Applicant's recent Statement of Financial Position.

7. In estimating the WACC, the applicant shall need to establish the following main elements.

(a) Capital Structure shall be determined by using regulated water Utilities' Balance Sheet.

(b) Equity shall constitute of own generated funds..

(c) Debt shall constitute of long term debt from commercial banks or government (sub-loan).

- (d) Cost of Equity shall be computed as the average of 10-year Tanzania monthly bank rates (discount rates) provided by the Central Bank of Tanzania.
- (e) Cost of Debt shall be computed as the weighted average of the nominal interest rates quoted in the loan instruments. The Return on Debt, therefore, is the total of the historical and current or new weighted average costs of debts. The Return on Debt shall be computed using the following formula:

$$r_d = \sum_{i=1}^n w_i r_i$$

Where:

- r_d = Cost of debt
- r_i = Nominal interest rate on loan.
- w_i = Weights of the constituent debt..

Replacement,
Rehabilitation and
Investment Costs

8. Determination of replacement, rehabilitation and new investment costs shall be limited by the estimated value of the sum of Return on Investment (ROI) and depreciation charge

$$CAPEX \leq Dt + ROI$$

Whereas

CAPEX is the annual capital expenditures constituting replacement, rehabilitation, and new investment costs;

Dt is the regulatory depreciation; and

ROI is the return of investment/asset which is the product of Regulatory Asset Base and Weighted Average Cost of Capital.

9. EWURA may use benchmarking method with other similar water Utilities to determine the allowed capital costs in the revenue requirement if it is observed that the estimated “CAPEX” results in tariff shock or there is inadequate information to warrant proper estimation of return on investment and depreciation

10. For Utilities with low coverage and which suffer diseconomies of scale, EWURA may allow higher repair, rehabilitation and new investment costs which exceeds the sum of return on investment and depreciation. The

level of capital costs shall be determined by making reference to existing investments in water utilities having similar level of water demand.

Average Water
Tariff

11. Regulated Water and Sanitation Utilities shall determine Average Water Tariff (AT) using the following formula:

$$AT_{proposed} = \frac{RR_{water}}{Q*(1-NRW)}$$

Whereas

RR_{water} = Water Related Revenue requirement
 Q = Annual water production as projected in the regulated water and sanitation utility's Business Plan.
 NRW = Non-Revenue Water target for the year as projected in the Regulated Water and Sanitation Utility's Business Plan.

Water Related
Revenue
Requirement

12. Revenue Requirement for water sales shall be determined using the following formula

$$RR_{water} = RR - OI$$

Where;

RR is the Total Revenue Requirement

OI are "Other Incomes" which reflect the sum of revenue requirements associated with customer related charges (such as service charge, new connection fees, and reconnection fees) as well as sewerage tariff and charges (such as cesspit emptying and sewer disposal charges).

Metered Water
Tariff for
Individual
Categories

13. Adjustment of individual tariffs per customer category and block is done using the following formula and as shown in Form 13A of the Tariff Setting Guidelines Schedule.

$$T_{i,proposed} = T_{i,current} \times \frac{AT_{proposed}}{WAT_{current}}$$

$$T_{i,proposed} = T_{i,proposed} \times \frac{AWT_{proposed}}{WAT_{current}}$$

Where

$T_{i,proposed}$ = Newly adjusted water tariff for consumer category i (TZS/m³)

$T_{i,current}$ = current water tariff for consumer category i (TZS/m³)

$AT_{proposed}$ = Computed Average Tariff (TZS/m³) calculated based on recommended revenue requirement as in the Form 11 of the tariff application guidelines.

$WAT_{current}$ = Current weighted Average Tariff (TZS/m³) calculated using the proposed consumption pattern (C_i) computed such that:

$$WAT_{current} = \sum(C_i \times T_{i,current})$$

14. The Applicant shall ensure that $WAT_{proposed}$ defined in is approximately equal to $AT_{proposed}$

where;

$$AT_{proposed} = \sum(C_i \times T_{i,proposed})$$

Tariff Design

15. Tariff design among individual customer groups shall be based on:
- (a) Water as a basic need. Therefore, industrial customers shall have the highest rate or charge, followed by commercial, then institutional and lowest tariff group will be the domestic customers including kiosks. Tariff spread among the customer groups shall be based on the average tariff spread in the Regional Water Authorities.
 - (b) Water conservation. With a homogenous group of customers such as domestic, a relatively high consumption shall be charged a relatively high tariff in order to encourage water conservation.

Tariff Structure –
Two Part Tariff

16. A regulated water and sanitation Utility shall use a two-part tariff structure which is a combination of a fixed charge and a volumetric rate as per the formular below

$$\text{Monthly Bill} = \text{Sales from Vol. Rate} + \text{Sales from Fixed Charge}$$

Whereas

Sales from Vol. Rate = the part of monthly customer bill reflecting charges due to the amount of water consumed;

Sales from Fixed Rate = the part of monthly customer bill in the form of service charge per month.

Tariff Structure –
Increasing Block
Tariff

17. An increasing block tariff shall be adopted for domestic customer category with the aim of encouraging efficient consumption of water, while the tariff structure for non-domestic customers shall be a uniform volumetric tariff

18. EWURA recommends three consumption blocks for a domestic customer.

- (a) The first consumption block shall be set equal to the lifeline consumption for a household, which is up to 5 cubic meters and shall be charged the minimum of the domestic rate.
- (b) The second consumption block shall be in excess of the first block and shall end at the average monthly consumption for domestic customers in the Regulated Water Utility.
- (c) The remaining third consumption block of the tariff structure is then thought for consumption above the second consumption block with the normal needs and has to generate revenues for the cross subsidizing of the first block of consumption (lifeline consumption).

19. In an increasing block tariff structure, the water bill shall be calculated as follows:

$(Q^*) P1$ if $Q^* < Q1$ or;

$P1Q1 + (Q^* - Q1)P2$ if $Q1 < Q^* < Q2$ or;

$P1Q1 + P2Q2 + (Q^* - (Q1+Q2))P3$ if $Q1 + Q2 < Q^* < Q3$.

Where

Q^* = amount of water sold to a specific consumer

$Q1$ = maximum amount of water that can be sold in the first block at price $P1$

$Q2$ = maximum amount of water than can be sold to a consumer in the second block at $P2$

$Q3$ = maximum amount of water than can be sold to a consumer in the second block at $P3$.

Flat Rates

20. Flat rate is an estimated bill charged to customers which is not based on the actual water consumption. Where any consumer is supplied with water without a water meter such consumer shall be charged a flat rate per month, irrespective of the amount of water consumed, and such rate shall be approved by EWURA

21. Flat rates for domestic customers shall be a product of average domestic tariff and the average monthly water consumption for metered domestic customers.

Customer related
revenue
Requirement

22. Customer related Revenue Requirement shall include all the costs associated with customer services such as billing, accounting, meter services, and new connection costs and tends to vary with the number of customers involved. The associated fees shall be, but not limited to:

- (a) Service Charge;
- (b) New Connection Fees;
- (c) Reconnection Fees.

Service Charge

23. Service charge shall be used to cover the costs of meter reading, bills processing, maintenance and repair of customer connection, bills delivery and meter service which shall be approved by EWURA.

24. In case of insufficient cost information related to service charge, benchmarking method with regional water Utilities may be used to determine service charge.

25. The revenue requirement associated with service charges shall be calculated based on the following formula.

$$RRscharge = \sum(BSCi \times NoacCustomeri \times Months)$$

Whereas

RR_{charge} = Revenue Requirement or Income related to new connection fees;

BSC_i = Benchmarked/cost based service charges;

$NoacCustomer_i$ = Number of total active customers per year for a particular customer category I;

$Months$ = months of the year that is 12

New Connection
Fee

26. New connection fees shall be intended to cover for costs incurred in surveying, supervision, and transportation and may be set as a percentage of total recoverable expenditure (material and labor) or a fixed charge approved by EWURA.

27. If the new connection fees are calculated based on percentage determined by the Water Supply Regulations, 2013, then the associated revenue requirement will be computed in accordance with the formula below:-

$$RR_{nwcon} = \sum (20\% \times AvConCosts_i \times NonwCustomer_i)$$

Where:

RR_{nwcon} = Revenue Requirement or Income related to new connection fees

$AvConCosts_i$ = Average Costs for a Particular Customer Category i

$NonwCustomer_i$ = Number of projected new connections per year for a particular customer category i

28. If the new connection fees are set as fixed rates, either through a cost based method or benchmarking method, revenue requirement association with the new connection fees will be computed in accordance with the formula below:-

$$RR_{nwconw} = \sum (BNFi \times NonwCustomer_i)$$

Where

RR_{nwconw} = Revenue Requirement or Income related to new connection fees;

$BNFi$ = Benchmarked/cost based new connection fees;

$NonwCustomer_i$ = Number of projected new connections per year for

a particular customer category i.

Reconnection fees

29. Reconnection fees that shall be intended to recover the costs of transport, materials (such as plugs and thread seals); and labour while disconnecting and reconnecting service.

30. In case of insufficient cost information related to reconnection activities, benchmarking method with regional water Utilities may be used to determine reconnection fees.

31. The revenue requirement or income associated with reconnection fees shall be calculated based on the following formula.

$$RRreconw = \sum(BRFi \times NorCustomeri)$$

Where

RRreconw = Revenue Requirement or Income related to new connection fees;

BRFi = Benchmarked/cost based reconnection fees;

NorCustomeri = Number of projected reconnections per year for a particular customer category i.

Sewerage tariff

32. Sewerage tariff shall be based on the recovery of the sewerage related costs such as personnel costs for sewerage staff; sewage tests and treatment; electricity for sewerage and sanitation; maintenance and repair of sewerage infrastructure, depreciation costs and all sewerage investment related costs

33. The amount of water used for computation of sewerage tariff shall not exceed 80% of monthly water consumption.

34. The revenue requirement or income associated with sewerage tariff shall be calculated based on the following formula.

$$RRswtariff = \sum(BSTi \times SewagerFlowi)$$

Where

RRswtariff = Revenue Requirement or Income related to sewerage tariff;

BSTi = Benchmarked/cost based sewerage tariff;

SewagerFlowi = Total volume of sewage flow per year for a particular customer category i which is equivalent to a proposed percentage of monthly water consumption for that customer category i

Cesspit Emptying Charges

35. Cesspit emptying charges are charges for emptying sewage from the customer premises and transporting the sewage to the waste treatment facility operated by a regulated water Utility.
36. Cesspit emptying charges also recover the costs of depreciation, repair and maintenance of the related equipment and all investment related costs pertaining to cesspit emptiers.
37. In case of insufficient cost information related to cesspit emptying activities, benchmarking method with regional water Utilities may be used to determine cesspit emptying charges.
38. The revenue requirement or income associated with cesspit emptying charges shall be calculated based on the following formula.

$$RRcecharge = \sum(CECi \times NoVolume \times NoTripsi)$$

Where

RRcecharge = Revenue Requirement or Income related to cesspit emptying charges;

CECi = Benchmarked/cost based cesspit emptying charges;

NoVolume = Number of specified volumes. That is, for example if cesspit emptying charge is charged per 10m³, then for a 30m³ tanker, *NoVolume* will be 3.

NoTripsi = Estimated number of trips associated with cesspit emptying per year for a particular customer category i.

Sludge Disposal Charges

39. Sludge disposal charges are charges for disposing sewage to the waste treatment facility operated by the Regulated Water Utility.
40. In case of insufficient cost information related to sludge disposal activities, benchmarking method with regional water Utilities may be used to determine sludge disposal charges.
41. The revenue requirement or income associated with sludge disposal charges shall be calculated based on the following formula.

$$RRsdcharge = \sum(SDCi \times NoVolume \times NoTripsi)$$

Where

RRsdcharge = Revenue Requirement or Income related to sludge disposal charges;

SDCi = Benchmarked/cost based sludge disposal charges;

NoVolume = Number of specified volumes. That is, for example if cesspit emptying charge is charged per 10m³, then for a 30m³ tanker,

NoVolume will be 3.

$NoTripsi$ = Estimated number of trips associated with cesspit emptying per year for a particular customer category i ;

Sewerage
Customers Not
Using Water
Services

42. Sewered Customer not using water from a regulated water Utility shall be set based on the average monthly water consumption in a specific location or the whole service area.

43. The amount of water used for sewerage shall not exceed 80% of monthly water consumption.

Sewerage
Customers Not
metered for Water
Services

44. Regulated Water and Sanitation Utilities shall ensure that all sewered customers who also receive water supply services are metered.

Automatic Tariff
Adjustment

45. An Automatic Tariff Review shall be considered during a Multi-Year Tariff period if material changes to specified cost items occur. The average water tariff shall be determined by the formula below

$$AWT_t = \tilde{AWT}_t + \frac{C_t - \tilde{C}_t}{\tilde{Q}_{w_t}}$$

Where

- AWT_t = adjusted average weighted tariff for year t ;
- \tilde{AWT}_t = existing average weighted tariff for year t ;
- C_t = actual total costs after the extraordinary event for year t ;
- \tilde{C}_t = forecast total costs before the extraordinary event for year t ;
- Q_{w_t} = Quantity of billed water for year t ;

29th August 2017
Date

Eng. Godwin Samwel
Acting Director General