



Multi-Year Tariff Framework
Rule for Determining the Revenue Requirement for
Distribution Network Service Providers

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CHAPTER I

GENERAL PROVISIONS

Article 1

Purpose and Scope

- 1 The purpose of this Rule is to describe the methodology for setting the Revenue Requirement s for the provision of regulated distribution and related activities. In the determination of the Revenue Requirement s, this document should be read in conjunction with the open access rules and guidelines, and the transmission and distribution pricing methodology, which will be developed by the ERB when describing the proposed unbundled charges for network providers. The ring-fencing of costs of Licensees in the energy sector should be done as required by the terms of the licensing conditions and in line with the guidelines that will be developed by the ERB on the separation of operation and accounts among activities, ensuring that costs of regulated services are allocated on a fair and reasonable basis.
- 2 This Rule sets:
 - 2.1 The methodology for setting the Revenue Requirement s of a Distribution Network Service Provider;
 - 2.2 The methodology according to which the Revenue Requirement s will be determined periodically and will be automatically updated and adjusted to reflect differences between projected and actual costs; and
 - 2.3 The principles according to which the Distribution Network Service Provider recovers the Revenue Requirement s.
- 3 This Rule shall apply to:
 - 3.1 All Distribution Network Service Providers providing the following regulated services:
 - 3.1.1 Regulated Distribution Services;
 - 3.1.2 Regulated Distribution Connection Services; and
 - 3.1.3 Regulated Retail Services.
 - 3.2 The regulated services as described in Paragraph 3.1 above are defined as follows:
 - 3.2.1 Regulated Distribution Services

- 3.2.1.1 Activities undertaken for the provision of transporting electricity on a Distribution System for delivery to a Regulated Customer;
 - 3.2.1.2 Activities undertaken relevant to planning, installation, maintenance, augmentation and operation of a Distribution System; and
 - 3.2.1.3 Activities undertaken relevant to billing, collection and customer service for Regulated Customers purchasing Regulated Distribution Services and Regulated Distribution Connection Services.
- 3.2.2 Regulated Distribution Connection Services
- 3.2.2.1 Activities undertaken for the provision of access services; and
 - 3.2.2.2 Activities undertaken relevant to planning, installation, maintenance, augmentation, and operation of Distribution Connection Assets.
- 3.2.3 Regulated Retail Services
- 3.2.3.1 Activities undertaken for the provision of planning, installation, augmentation, maintenance, and reading of electricity meters that are used for Non-Contestable Customers; and
 - 3.2.3.2 Activities undertaken relevant to billing, collection, customer service, energy trading and electricity sales for Non-Contestable Customers.

Article 2

General Principles

- 1 The Revenue Requirements of the Distribution Network Service Provider shall be set during each Periodic Review and shall remain fixed for the duration of the Regulatory Period.
- 2 The Revenue Requirements shall be adjusted during each Regular Adjustment to reflect differences between projected and actual revenues or non-controllable costs.

- 3 The regulated charges shall be calculated each Tariff Year at such a level which ensures that the Distribution Network Service Provider is able to recover the Revenue Requirements for the forthcoming Tariff Year.
- 4 Revenue Requirements may also be calculated during an Extraordinary Periodic Review, which is triggered by the occurrence of Extraordinary Event(s) leading to differences between projected and actual costs which breach a pre-determined Materiality Threshold.

Article 3

Definitions

- 1 This Rule uses the following terms and definitions:
 - 1.1 “Allowed Depreciation Cost” – as defined in Article 7;
 - 1.2 “Allowed Investment Plan” – means the plan approved during Periodic Reviews, which features the capital projects which will be implemented during the forthcoming Regulatory Period;
 - 1.3 “Allowed Operating and Maintenance Cost” – as defined in Article 7;
 - 1.4 “Allowed Return” – as defined in Article 7;
 - 1.5 “Date of Commencement” – means the commencement date of the forthcoming Tariff Year;
 - 1.6 “Date of Effectiveness” – means the commencement date of the forthcoming Regulatory Period;
 - 1.7 “Day” – means a calendar day;
 - 1.8 “Distribution Connection Assets” – means the components of the Distribution System which are used to provide Regulated Distribution Connection Services in respect of that Distribution System;
 - 1.9 “Distribution Network Service Provider” – means a Licensee responsible for operating, maintaining and developing a Distribution System in an area, and is regulated by the ERB;
 - 1.10 “Distribution System” – has the meaning given to it in the Electricity Act of 2019, which states that a Distribution System means a portion of an electricity network, which delivers electric energy from transformation points on the transmission network of bulk power system to an enterprise at a voltage whose upper limit is sixty-six kilovolts;

- 1.11 “Economic Asset Life” – means the asset life used to calculate the depreciation allowance which is equal to the technical life of the asset unless ERB determines, for a particular asset, that a life shorter than the technical life shall be used to calculate the Allowed Depreciation Cost;
- 1.12 “ERB” – means the Energy Regulation Board established under the Energy Regulation Act of 2019;
- 1.13 “Extraordinary Event” – means the occurrence of a change in the costs of the Distribution Network Service Provider, which is for reasons outside of its control, cannot be recovered by Regular Adjustments and breaches the Materiality Threshold;
- 1.14 “Extraordinary Periodic Review” – means a Periodic Review other than the normal periodic review which can be triggered by a change in costs which breaches the Materiality Threshold;
- 1.15 “Inflation” – means the Consumer Price Index for “All Items” published by the Zambia Statistics Agency;
- 1.16 “Licensee” – has the meaning given to it in the Electricity Act of 2019, which defines a Licensee as a holder of a license authorising it to undertake an activity under the Electricity Act of 2019;
- 1.17 “Materiality Threshold” – refers to a change which significantly affects the Revenue Requirement and which is set at 10% of the Revenue Requirement, unless ERB determines otherwise;
- 1.18 “Revenue Requirement ” – as defined in Article 7;
- 1.19 “Net Present Value” – refers to the financial method of discounting future cash flows which, for the purpose of this Rule, shall be calculated using the Weighted Average Cost of Capital as the discount rate;
- 1.20 “Non-Contestable Customers” – means electricity end-users connected to the Distribution System of a Distribution Network Service Provider, who receive their electricity retail services from such Distribution Network Service Provider in a non-competitive environment, in the absence of other economically competitive option of sourcing these services from alternative suppliers;
- 1.21 “Periodic Review” – means the detailed review of the build u of the Revenue Requirement s of the Distribution Network Service Provider which takes place at the beginning of a forthcoming Regulatory Period;
- 1.22 “Regular Adjustment” – as defined in Article 5;

- 1.23 “Regulated Customer” – any customer who is provided electricity under regulated charges;
- 1.24 “Regulated Distribution Connection Services” – as defined in Article 1;
- 1.25 “Regulated Distribution Services” – as defined in Article 1;
- 1.26 “Regulated Retail Services” – as defined in Article 1;
- 1.27 “Regulatory Asset Base” – refers to the value of all assets used and useful in providing regulated service, calculated in line with the stipulations provided in Article 8;
- 1.28 “Regulatory Guidelines for Periodic Reviews” – as defined in Article 4;
- 1.29 “Regulatory Period” – means a period of four years commencing on the date the approved tariffs are effective or as determined otherwise by the ERB during the Periodic Review;
- 1.30 “Revenue Adjustment Factor” – as defined in Article 7;
- 1.31 “Rule” – means this “Multi-Year Tariff Framework Rule for Determining the Revenue Requirement for the Distribution Network Service Provider”;
- 1.32 “System Losses” – means the total losses in a Distribution System, including technical and non-technical losses (but excluding administrative or commercial losses) calculated as the difference between the energy obtained from grid connection points and connection points to embedded generators, and that delivered and invoiced to Regulated Customers;
- 1.33 “Tariff Year” – means the 12-months period from the date the approved tariff is effective;
- 1.34 “Unregulated Income” – means any income that is generated using regulated resources and is not generated through regulated charges. This may be deemed as a net Unregulated Income to the extent that such net Unregulated Income is reasonable. The net Unregulated Income shall be determined as Unregulated Income minus relevant expenses not recovered through regulated charges;
- 1.35 “Used and Useful Assets” – means assets that have been commissioned and contribute to the delivery of the required regulated services;
- 1.36 “Weighted Average Cost of Capital” – as defined in Article 9;
- 1.37 “Working Capital” – as defined in Article 10.

CHAPTER II TARIFF-SETTING PROCESS

Article 4

Periodic Reviews

- 1 The Revenue Requirements of the Distribution Network Service Provider shall be determined during each Periodic Review, which shall be conducted prior to the beginning of each Regulatory Period.
- 2 The formula to calculate the Revenue Requirements of the Distribution Network Service Provider during Periodic Reviews is provided in Article 7.
- 3 All inputs, assumptions and parameters relevant to the calculation of the Revenue Requirements shall be determined by the ERB prior to each Periodic Review.
- 4 The Allowed Operating and Maintenance Cost, Allowed Depreciation Cost and Allowed Return components of the Revenue Requirements shall remain fixed for the duration of the Regulatory Period, except for the adjustments following the Regular Adjustment process.
- 5 The annual operating and maintenance costs forecasts submitted by the Distribution Network Service Provider during the Periodic Review must be accompanied by a justification against each major cost category indicating the reason why the forecast cost is necessary and is reasonable for the level proposed. The written justification must further explain improvements in operational efficiency compared to the previous Regulatory Period. The operating and maintenance costs forecasts shall be supported by benchmarks against operational parameters, such as number of staff, energy delivered, and service performance. The operating and maintenance costs forecasts shall also demonstrate that they shall support the projected growth in connections, peak demand and energy delivered, and shall allow the Distribution Network Service Provider to achieve its performance targets for the upcoming Regulatory Period.
- 6 During the Periodic Review, the forecast annual capital expenditure projects submitted as part of the investment plan of the Distribution Network Service Provider must include a justification for each major capital expenditure project indicating why the project is necessary, is based upon best available prices, and is reasonably efficient from a design and implementation point of view. The capital expenditure forecasts shall also demonstrate that it shall support the forecast growth in connections, peak demand and energy delivered, and shall allow the Distribution Network Service Provider to achieve its performance targets for the upcoming Regulatory Period.

- 7 During the Periodic Review, the ERB shall review the operating and maintenance costs forecasts and the capital expenditure forecasts, along with the supporting information and justification submitted by the Distribution Network Service Provider. The ERB shall determine whether the projected costs are reasonable and will allow the Distribution Network Service Provider to support the projected growth and achieve the target levels of performance.
- 8 The Regulatory Period shall be for the period as defined in Article 3 of this Rule, unless otherwise decided by ERB, at its sole discretion, prior to the commencement of the Periodic Review.
- 9 Periodic Reviews shall be initiated at least six months prior to the commencement of the forthcoming Regulatory Period.
- 10 Prior to the commencement of each Regulatory Period, ERB shall issue the Regulatory Guidelines for Periodic Reviews, which shall include, among others:
 - 10.1 The timeline for completing the Periodic Review, including expected public consultation phases;
 - 10.2 The duration of the forthcoming Regulatory Period, should ERB determine that a period other than the default period stipulated under this Article 4 is more appropriate;
 - 10.3 The Periodic Review pro-forma application templates and the associated application guidelines;
 - 10.4 Any additional information, which ERB may require to justify the reasonableness of the actual or projected operating and maintenance or capital expenditure costs.
- 11 At least 90 days prior to the Date of Effectiveness of the new Revenue Requirements and regulated charges, ERB shall issue a consultation paper presenting their evaluation of the allowed costs required to provide the regulated service;
- 12 ERB shall allow for a consultation period of at least 30 days following the publication of the notice;
- 13 ERB shall take a final decision on the new Revenue Requirement and proposed regulated charges within 30 Days from the date of the public hearing.

Article 5

Automatic Cost Adjustment Process

- 1 Regular Adjustments shall take place in between each Tariff Year of the Regulatory Period.
- 2 During Regular Adjustments, ERB shall undertake the following adjustments to the Revenue Requirement s:
 - 2.1 Undertake the indexation of the Allowed Operating and Maintenance Costs, Allowed Depreciation Cost and Allowed Return to inflation;
 - 2.2 Update differences between projected and actual subsidies and Unregulated Income;
 - 2.3 Update allowed revenue components to account for differences between projected and actual currency exchange rates; and
 - 2.4 Update for any reward or penalty related to the level of performance.
- 3 The Distribution Network Service Provider shall submit to ERB their proposals of Revenue Requirement and regulated charges resulting from the Regular Adjustment process at least 90 days prior to the commencement of the forthcoming Tariff Year.
- 4 The ERB shall notify the Distribution Network Service Provider whether it has approved the Distribution Network Service Provider's Regular Adjustment calculation at least 70 days prior to the commencement of the forthcoming Tariff Year.
- 5 In the event that ERB approves the Distribution Network Service Provider's Regular Adjustment calculations, the Revenue Requirement s and regulated charges proposed by the Distribution Network Service Provider shall apply from the Date of Commencement of the forthcoming Tariff Year.
- 6 In the event that ERB does not approve the Distribution Network Service Provider's Regular Adjustment calculation, the ERB shall provide the reasons and an alternative calculation of the Revenue Requirement s and regulated charges, which shall apply from the Date of Commencement of the forthcoming Tariff Year.
- 7 Differences in Revenue Requirement s, which may result from incorrect calculations and updated information or assumptions, shall be recovered in the subsequent relevant Tariff Years.
- 8 The formula to calculate the Revenue Requirement s of the Distribution Network Service Provider during Periodic Reviews is provided in Article 7.

Article 6

Extraordinary Periodic Reviews

- 1 Extraordinary Periodic Reviews are Periodic Reviews triggered by the occurrence of an Extraordinary Event which is material enough to cause a change in costs that cannot be recovered through Regular Adjustments.
- 2 The Materiality Threshold of the change in costs shall be as defined under Article 3.1.17, unless otherwise specified by ERB during Periodic Reviews.
- 3 Extraordinary Periodic Reviews can be initiated:
 - 3.1 At the initiative of the ERB; or
 - 3.2 By a duly lodged application from a Distribution Network Service Provider, subject to ERB accepting, at its own discretion, that the submitted request is justified and meets the required criteria to trigger an Extraordinary Periodic Review.
- 4 The ERB shall inform the Distribution Network Service Provider, within 14 days of receiving the application for an Extraordinary Periodic Review, whether it has been duly lodged with all the information required by ERB to determine whether a review is warranted.
- 5 In the event that ERB establishes that the request is duly lodged, ERB shall inform the Distribution Network Service Provider, within 14 days of the duly lodged notification, whether it considers that the Materiality Threshold to trigger an Extraordinary Periodic Review has been breached.
- 6 In the event that ERB establishes that an Extraordinary Periodic Review is warranted, the ERB shall initiate an Extraordinary Periodic Review for the Distribution Network Service Provider.
- 7 The schedule and the process for completing an Extraordinary Period Review shall be the same as the one for a Periodic Review.

CHAPTER III DETERMINING REVENUE REQUIREMENT

Article 7

Revenue Requirement s of the Distribution Network Service Provider

- 1 The Revenue Requirement of the Distribution Network Service Provider shall be calculated according to the following formula:

$$MAR_t = OPMC_t + DEPC_t + RTRN_t + WCLC_t - SUBS_t - UREG_t + REVA_t$$

where:

MAR_t Revenue Requirements of the Distribution Network Service Provider in year t

$OPMC_t$ Allowed Operating and Maintenance Cost in year t

$DEPC_t$ Allowed Depreciation Cost in year t

$RTRN_t$ Allowed Return in year t

$WCLC_t$ Working Capital costs in year t

$SUBS_t$ any recurring subsidies the Distribution Network Service Provider may receive in year t

$UREG_t$ any Unregulated Income received in year t

$REVA_t$ Revenue Adjustment Factor in year t

2 Allowed Operating and Maintenance Costs shall:

- 2.1 Be set during Periodic Reviews and shall stay fixed for the duration of the Regulatory Period;
- 2.2 Include only reasonable and efficient costs to be incurred by the Distribution Network Service Provider to effectively operate the Distribution System;
- 2.3 Include only a reasonable level of bad debts that shall reflect a comprehensive and effective approach to collections, consistent with the Distribution Network Service Provider's strategy for debt collection improvement. Unless ERB decides otherwise, bad debts shall be the lowest of (a) 1% of outstanding accounts receivables, (b) 4-year average of actual accounts written off, (c) lowest of the actual accounts written off for the last four years;
- 2.4 Include only the portion of costs of the Distribution Network Service Provider that can be attributed to the following regulated services:
 - 2.4.1 Regulated Distribution Services;
 - 2.4.2 Regulated Distribution Connection Services;
 - 2.4.3 Regulated Retail Services;
- 2.5 Include only a portion of corporate costs of a parent company or an associated entity which can be attributed to the Distribution Network Service Provider based on clearly quantifiable cost allocators shared with ERB; and,

- 2.6 Be smoothed and indexed to projected inflation in line with the formula specified in Article 10 of this Rule.
- 3 Allowed Depreciation Cost shall:
 - 3.1 Be set during Periodic Reviews and shall stay fixed for the duration of the Regulatory Period;
 - 3.2 By default, be calculated using the straight-line depreciation method, unless otherwise approved by ERB, for a specific project, and based on a justified request of the Distribution Network Service Provider;
 - 3.3 In calculating the Allowed Depreciation Cost, ERB shall use asset lives for specific categories of assets reflecting the Economic Asset Life of the asset; and,
 - 3.4 Be smoothed and indexed to annual inflation in line with the formula specified in Article 10 of this Rule.
- 4 Allowed Return shall:
 - 4.1 Be set during Periodic Reviews and shall stay fixed for the duration of the Regulatory Period;
 - 4.2 Be calculated as the product of the Weighted Average Cost of Capital and the average opening and closing value of the Regulatory Asset Base in any given Tariff Year; and,
 - 4.3 Be smoothed and indexed to annual inflation in line with the formula specified in Article 10 of this Rule.
- 5 Working Capital Costs shall:
 - 5.1 Be sufficient to allow the Distribution Network Service Provider to cover the financing costs of the working capital; and,
 - 5.2 Be calculated according to the formula provided under Article 10 of this Rule.
- 6 Revenue Adjustment Factor shall:
 - 6.1 Be a correction factor to adjust for over or under recovery of revenue during Regular Adjustments; and,
 - 6.2 Be calculated according to the formula provided under Article 10 of this Rule.

Article 8

The Regulatory Asset Base

- 1 The Regulatory Asset Base shall be the sum of all Used and Useful Assets in providing the following regulated services:
 - 1.1 Regulated Distribution Services;
 - 1.2 Regulated Distribution Connection Services; and,
 - 1.3 Regulated Retail Services.
- 2 The Regulatory Asset Base shall stay fixed for the duration of the Regulatory Period.
- 3 The Regulatory Asset Base shall be used to calculate the Allowed Depreciation Cost and Allowed Return components of the Revenue Requirements.
- 4 An asset valuation shall be undertaken by the Distribution Network Service Provider during each Periodic Review. The asset valuation shall be undertaken using the depreciated historic cost valuation method in order to arrive at value of the Regulatory Asset Base.
- 5 The asset valuation undertaken during each Periodic Review must differentiate between those assets forming part of Paragraph 1 above, and assets which are to be excluded from the Regulatory Asset Base.
- 6 During Periodic Reviews, assets remaining in service beyond their Economic Asset Life shall remain part of the Regulatory Asset Base, subject to review by the ERB. Such assets and their residual value must be separately identified in the asset valuation. The residual value shall be determined in accordance with Article 13 of this Rule.
- 7 The details of the asset valuation must be reconciled back to the Distribution Network Service Provider's asset register or general ledger, and such reconciliation must be fully documented and submitted to the ERB together with the valuation report.
- 8 During Periodic Reviews, in the event that the actual unit cost is higher than the allowed unit cost of a capital expenditure project, the Distribution Network Service Provider shall seek the approval from ERB that the Regulatory Asset Base is adjusted to reflect the higher actual unit cost rather than the allowed unit cost, after providing sufficient evidence, to ERB's satisfaction, that the difference between the allowed and actual unit cost of a capital expenditure project is a result of reasons beyond the control of the Distribution Network Service Provider.

- 9 In calculating the opening value of the Regulatory Asset Base for the forthcoming Regulatory Period, the Regulatory Asset Base shall be updated to account for Inflation during the previous Regulatory Period.
- 10 During Periodic Reviews, ERB shall approve the Allowed Investment Plan, which features a list of capital expenditure projects that are allowed to be implemented and included in the Regulatory Asset Base.
- 11 Invested assets shall be added to the Regulatory Asset Base at the middle of the year in which they are commissioned and at the value allowed by the ERB.
- 12 The Distribution Network Service Provider shall be allowed to earn a return to compensate for financing costs during construction.
- 13 The Allowed Investment Plan for the Regulatory Period, once approved, stays fixed for the duration of the Regulatory Period.
- 14 During the Regulatory Period, the Distribution Network Service Provider may choose to substitute a capital investment approved in the Allowed Investment Plan with an alternative investment. In such cases, the Distribution Network Service Provider shall seek approval from ERB after providing sufficient justification that the alternative capital investment brings equal or better value to Regulated Customers than the original one.
- 15 Capital expenditure subsidies shall be deducted in full from the total value of the Regulatory Asset Base unless ERB, at its sole discretion and in exceptional circumstances, determines otherwise depending on the ownership of the Distribution Network Service Provider and the provider of the subsidy.

Article 9

Weighted Average Cost of Capital

- 1 The Weighted Average Cost of Capital shall:
 - 1.1 Be calculated during each Periodic Review and shall stay fixed for the duration of the Regulatory Period;
 - 1.2 Be calculated according to the following formula:

$$WACC = g * r_d + (1 - g) * r_e (1 - t)$$

where:

WACC is the Weighted Average Cost of Capital

- g* is the gearing ratio and is the ratio of debt to the sum of all assets
- r_d* is the return on debt (or cost of debt)
- r_e* is the return on equity (or cost of equity), set according to the Capital Asset Pricing Model (CAPM)
- t* is the corporate tax rate applicable in Zambia

- 2 The allowed cost of debt of the Distribution Network Service Provider is set equal to the weighted average actual cost of debt incurred by the Distribution Network Service Provider, unless ERB considers that the actual cost of debt incurred by the Distribution Network Service Provider is above prevailing market rates, in which case ERB may propose an alternative cost of debt;
- 3 For the avoidance of doubt, subsidized loans which may have a lower interest rate than prevailing market rates will be passed through at the actual rate so that the benefits of a lower rate are passed through to Regulated Customers in the form of a lower Weighted Average Cost of Capital;
- 4 The gearing ratio shall be set to reflect the actual financing structure of the Distribution Network Service Provider except where the gearing ratio is below 0.4 or above 0.7 in which case the ERB shall set the gearing ratio at 0.4 for the former and at 0.7 for the latter;
- 5 The cost of equity shall be set according to the Capital Asset Pricing Model (CAPM) and calculated using the following formula:

$$r_e = r_f + \beta * ERP$$

where:

- r_e* is the return on equity
- r_f* is the risk-free rate
- β* represents the volatility of the individual equity asset compared to that of the market as a whole
- ERP* represents the equity risk premium of the market as a whole

Article 10

Adjusting the Revenue Requirement

- 1 During Regular Adjustments, ERB shall adjust the Revenue Requirement s to:
 - 1.1 Index components of the Revenue Requirement s to Inflation;

- 1.2 Account for differences between projected and actual costs allowed for in Article 5; and,
 - 1.3 Calculate the Working Capital allowance of the Distribution Network Service Provider.
- 2 Allowed Operating and Maintenance Costs (OPMC) shall be re-calculated at each Tariff Year using the following formula:

$$OPMC_t = OPMC_{t-1} * (1 + CPI_{t-1})$$

where:

$OPMC_t$ is the Allowed Operating and Maintenance Costs in Tariff Year t

$OPMC_{t-1}$ is the Allowed Operating and Maintenance Costs in Tariff Year $t-1$, except in Tariff Year 1 where ERB shall use the $OPMC_t$ allowance determined during the Periodic Review, the value is smoothed so that it is equal throughout the Regulatory Period, while maintaining revenue neutrality in Net Present Value terms

CPI_{t-1} is the Inflation index

- 3 Allowed Depreciation Costs (DEPC) shall be re-calculated at each Tariff Year using the following formula:

$$DEPC_t = DEPC_{t-1} * (1 + CPI_{t-1})$$

where:

$DEPC_t$ is the Allowed Depreciation Cost in Tariff Year t

$DEPC_{t-1}$ is the Allowed Depreciation Cost in year $t-1$, except in Tariff Year 1 where ERB shall use the $DEPC_t$ allowance determined during the Periodic Review, the value is smoothed so that it is equal throughout the Regulatory Period, while maintaining revenue neutrality in Net Present Value terms

CPI_{t-1} is the Inflation index

- 4 Allowed Return (RTRN) shall be re-calculated at each Tariff Year using the following formula:

$$RTRN_t = RTRN_{t-1} * (1 + CPI_{t-1})$$

where;

$RTRN_t$ is the Allowed Return in Tariff Year t

$RTRN_{t-1}$ is the Allowed Return in year $t-1$, except in Tariff Year 1 where ERB shall use the $RTRN_t$ allowance determined during the Periodic Review, the value is smoothed so that it stays the same throughout the Regulatory Period, while maintaining revenue neutrality in Net Present Value terms

CPI_{t-1} is the Inflation index

- 5 The Working Capital Allowance shall be re-calculated at each Tariff Year using the following formula:

$$WCLC_t = 1/12 * WACC * (OPMC_t + DEPC_t + RTRN_t - SUBS_t)$$

where:

$WCLC_t$ is the Working Capital Allowance in year t

$WACC$ is the Weighted Average Cost of Capital

$OPMC_t$ is the Allowed Operating and Maintenance Costs in year t

$DEPC_t$ is the Allowed Depreciation Cost in year t

$RTRN_t$ is the Allowed Return in year t

$SUBS_t$ is any recurrent subsidies the Distribution Network Service Provider receives in year t .

- 6 The Revenue Adjustment Factor shall be calculated during each Regular Adjustment using the following formula:

$$REVA_t = (RR_{t-1} - ARR_{t-1}) * (1 + I_t)$$

where:

$REVA_t$ is the Revenue Adjustment Factor in year t

RR_{t-1} is the Revenue Requirement (expressed in Kwacha) of the Regulated Entity in year $t-1$

ARR_{t-1} The amount (expressed in Kwacha) billed/sold to Regulated Customers in year $t-1$

I_t is the short-term interest rate proxied to the Overnight Lending Rate published by the Bank of Zambia or an alternative rate proposed by ERB to reflect the actual lending rate in Zambia

- 7 Regular Adjustments shall include any other adjustments reasonably determined by ERB to reflect any other justifiable differences or adjustments in the Revenue Requirement s, which are not covered by the formulae in Paragraphs (1) – (6) of this Article.

CHAPTER IV

REGULATED CHARGES

Article 11

Distribution Network Service Provider Use of System Charging Principles

- 1 Use of system regulated charges shall reflect the principles of this Article.
- 2 Regulated charges will be volumetric energy charges determined based on the forecast electricity generation of the Distribution Network Service Provider.
- 3 The final structure of the Distribution Network Service Provider is subject to the ERB's review and approval.

CONNECTION CHARGES

Article 12

Connection Charges Principles

- 1 The Distribution Network Service Provider shall set connection charges in accordance with a methodology proposed by the Distribution Network Service Provider and approved by the ERB.
- 2 The methodology referred to in Paragraph 1 of this Article shall enable the Distribution Network Service Provider to set connection charges at a level which ensures recovery of the costs of provisioning installation of plant and equipment for the purpose of constructing or modifying a connection to the Distribution System, so long as these costs are not recovered from other charges.
- 3 Revenues from connection charges shall comprise part of the Revenue Requirement of the Distribution Network Service Provider.

Article 13**Incentives**

- 1 As an incentive to extend the economic use of assets, in cases when assets have actual serviceable lives exceeding their Economic Asset Life, these assets shall be given a residual value of 5% of the historic cost of the asset, or any other residual value deemed appropriate by the ERB. Assets shall be depreciated until they have a zero value. In the following year, if the asset remains in use, subject to review by ERB of these assets, it shall be allocated the residual value. The value of assets used beyond their Economic Asset Life shall be recorded separately and shall be taken into account in the determination of the value of the Regulatory Asset Base.
- 2 Given the rate setting mechanism provided for in this Rule, during a Regulatory Period, the Distribution Network Service Provider automatically retains any savings made on controllable operating and maintenance expenditure as compared with the Allowed Operating and Maintenance Costs. However, any expenditure above the Allowed Operating and Maintenance Costs will be to the account of the Distribution Network Service Provider.
- 3 Any savings in capital expenditure below the approved capital expenditure shall likewise accrue to the Distribution Network Service Provider in the value of capital expenditure savings multiplied by the WACC. However, capital expenditure above the approved capital expenditure shall be for the account of the Distribution Network Service Provider.
- 4 If during Periodic Reviews the ERB determines that operating and maintenance and capital expenditure savings were incurred at the expense of quality of supply i.e., historic service delivery levels have not been properly maintained on the average, the ERB may direct the Distribution Network Service Provider to pay the penalties determined by ERB directly to Regulated Customers.
- 5 The Distribution Network Service Provider shall be entitled to an increase or decrease in the Revenue Requirement during a Tariff Year depending on its operational performance.
- 6 The rewards and penalties applied in any Tariff Year shall not exceed 3% of the Revenue Requirement, or a percentage deemed reasonable by the ERB.
- 7 In consideration of the performance incentives, the Revenue Requirement for a given Tariff Year shall be calculated in accordance with the following formula:

$$MAR_t = MAR_{t-1} + S_t$$

where:

MAR_t is the Revenue Requirement for year t

MAR_{t-1} is the Revenue Requirement for year $t-1$ excluding incentives

S_t a performance incentive factor to reward or penalize the Distribution Network Service Provider for achieving or failing to achieve the specified target level of performance during the twelve-month period of a Tariff Year. For the avoidance of doubt, S_t may be a positive or negative value or may be zero.

- 8 During Periodic Reviews, the ERB shall determine the performance index to be used to measure the system loss performance of the Distribution Network Service Provider, including the manner in which the Distribution Network Service Provider must record and report the actual performance.
- 9 The target level of system loss performance shall be set by the ERB prior to the Period Review.
- 10 The target level of system loss performance may vary between Regulatory Periods, Tariff Years, and for different Distribution Network Service Providers.
- 11 The level of reward, as defined in Article 13.6, shall be set so as to provide an incentive to improve system loss performance but not so as to encourage excessive investment in the reduction of System Losses.
- 12 The level of penalty, as defined in Article 13.6, shall be reasonable and shall be set so as to be proportional to the levels of reward. However, since Distribution Network Service Providers already face a downside potential from the imposed system loss cap, the system loss performance index shall not have a negative measure and will only be either zero or positive.
- 13 The performance incentive factor shall be calculated as follows:

$$S_t = S_{SL,t} \times 0.03 RR_t$$

where:

RR_t is the Revenue Requirement for Tariff Year t ;

S_t is equivalent to $S_{SL,t} = W_{SL} \times Perf_{SL,t-1}$

where:

$S_{SL,t}$ is the S-component for system losses performance for Tariff Year t;

W_{SL} is the approved weight given to the System Losses S-component

$Perf_{SL,t-1}$ system losses performance assessment for the Tariff Year t-1 as at the end of the Tariff Year

14 System Losses shall be calculated as follows:

$$SL = (UI_t - UD_t) \times 100 / UI_t$$

where:

SL is the System Losses

UI_t is the total energy (in MWh) delivered to a Distribution System over the measurement period, measured as the sum of all energy delivered to the Distribution System over that measurement period, at each grid connection point and connection point to an embedded generator

UD_t is the total energy sold (in MWh) to Regulated Customers connected to a Distribution System over the measurement period. The total energy sold to Regulated Customers shall include energy delivered to Regulated Customers that are not paid for, resulting in bad debts

Note:

All generation connection points where energy is delivered into the Distribution System shall be taken into account

Generation connection points are to be described to the ERB and the ERB shall be notified in instances when there are any changes to the connection points

W_{SL} is the approved weight given to the System Losses S-component

15 The performance value shall be determined using the following performance bands:

Performance Band	Description	Performance Index
1	Performance greatly below target	Not applicable
2	Target not achieved	Not applicable
3	Performance as per expectation	0
4	Target exceeded	0.5
5	Target greatly exceeded	1.0

CHAPTER VI PASS-THROUGH COSTS

Article 14

Costs Considered as Pass-Through Costs

- 1 Generation charges and transmission charges are to be considered as pass-through costs and shall not be included under regulated charges for distribution. They shall also not be taken into account in the calculation of the Revenue Requirements for Distribution Network Service Providers.
- 2 Electricity consumption incurred by Distribution Network Service Providers in the course of providing regulated services shall not be considered as a pass-through cost and will instead form part of the Allowed Operating and Maintenance Costs.

Article 15

Recouping System Losses

- 1 Distribution Network Service Providers are entitled to recover System Losses through the system loss charges subject to a system loss cap approved by the ERB. This component shall be separately indicated in electricity invoices to Regulated Customers and shall not be included as part of the Revenue Requirements for Distribution Network Service Providers.

- 2 Distribution Network Service Providers shall be responsible for procuring all energy related to System Losses. Where such System Losses exceed the system loss cap, such shall not be charged to the Regulated Customers and shall be to the account of the Distribution Network Service Providers..

CHAPTER VII FINAL PROVISIONS

Article 16

Interpretation of the Rule

- 1 In the event there is uncertainty about the interpretation of any of the provisions of this Rule, the ERB Board will issue instructions and interpretations.

Article 17

Changes to the Rule

- 1 ERB Board retains the right to change or amend any provisions of this Rule, subject to a public consultation process.
- 2 The procedure for changing this Rule is the same as the one applied for its initial approval.

Article 18

Entry Into Force

1st January 2023