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1. **BACKGROUND**

This document details the procedures for determining electricity tariffs for customers directly regulated by the Energy Regulation Board (ERB), other than customers regulated through Power Supply Agreements (PSAs) or Power Purchase Agreements (PPAs). It provides both the ERB’s administrative process of handling a tariff review for Utilities in the Electricity Supply Industry (ESI) and how tariffs for various retail customer categories are determined.

2. **LEGAL PROVISION**

The ERB draws its mandate to determine electricity tariffs from the Electricity Act Cap 433 Section 8 of the Laws of Zambia which provides as follows:

Subject to other provisions of this section, an operator of an undertaking that supplies electricity to the public may, with due regard to any or all of the following circumstances:

a) the amount of electricity consumed;

b) the uniformity or regularity of demand;

c) the time when or during which the electricity is required;

d) the expenditure of the operator of the undertaking in furnishing supply;

e) any other circumstances approved by the Board; vary prices in respect of the supply of electricity to a particular consumer either above or below the charges specified in the licence governing the undertaking and may, from time to time, alter the charges so varied.

(2) If an operator considers it expedient to vary or alter charges in respect of any supply of electricity, the operator shall give notice to the consumer of the proposal to vary or alter those charges, as the case may be.
(3) If the consumer does not make any application under subsection (4) within thirty days of the date of notice referred to in subsection (2), the variation or alteration, as the case may be, shall, unless the operator of the undertaking and the consumer otherwise agree, come into effect thirty days after the date of that notice or from such later date as the operator may in that notice fix.

(4) The Board shall, on an application by a consumer, review a proposal referred to in subsection (2), taking into consideration any submissions made by the consumer.

(4A) The Board may, if it considers it appropriate, on its own motion review a notice by an operator of undertaking to vary or alter charges in respect of any supply of electricity.

(5) Any application made under subsection (4), together with any objection of the operator to that application, shall be submitted to the Board.

(6) Any consumer who makes an application under subsection (4), or the operator of any undertaking who objects to such an application, may, either by themselves or by their legal practitioner, appear before the Board and lead evidence in support of the application or objection, as the case may be.

(7) After considering the application referred to in subsection (4) and any objection thereto, the Board may-

(a) Confirm the proposed variation or alteration, as the case may be, to which the application relates;

(b) Order that the proposed variation or alteration, as the case may be, to which the application relates shall not be made; or

(c) Order the operator of the undertaking to make such other variation or alteration, as the case may be, as the Board considers fit.
3. **GOVERNMENT POLICY GUIDELINE ON PRICING OF ELECTRICITY TARIFFS**

The Government of the Republic of Zambia’s (GRZ’s), National Energy Policy (NEP) of 2008 seeks to expand generation and transmission capacity and also accessibility to electricity and private participation. Consequently, among the policy measures and strategies to achieve this objective is to migrate electricity tariffs to Cost reflective levels. Therefore, in electricity tariff determination, the ERB is guided by the need to move tariffs to cost reflectivity.

4. **ELIGIBILITY**

The process of determining electricity tariffs detailed in this paper covers the following customer categories:

   a) Residential -(capacity 15 kVA)
   
   b) Services -(capacity 15 kVA)
   
   c) Commercial Customers- (Capacity 15 kVA)
   
   d) Maximum demand 1-small power-(capacity between 16-300 kVA)
   
   e) Maximum demand 2-small power-(capacity 301 to 2,000 kVA)
   
   f) Maximum demand 3-large power- (capacity 2,001 to 7,500kVA)
   
   g) Maximum demand 4-large power- (capacity above 7500kVA)
5. **TARIFF APPLICATION AND REVIEW PROCEDURE**

Energy Regulation Board Tariff Application Procedure

1. Tariff application by the Utility

2. Notification of the duly lodged application

3. Application may be resubmitted within 21 days

2. Notification of the unduly lodged application

3. Notification of the public by the Utility (30 days)

4. Public Consultation Paper (Administrative procedure)

5. Receipt of written submissions from consumers and the public

6. Public Hearing

7. Tariff Determination and Announcement (within 90 days)
The tariff application shall be in accordance with the procedures outlined below:

5.1 **Tariff Application**

5.1.1 The process of tariff adjustment is initiated by the Utility. The Utility submits an application to the ERB for tariff adjustment, six (6) months, before the commencement of its financial test year\(^1\).

5.2 **Notification of the duly Lodged Application**

5.2.1 The ERB reviews the application to ensure that it conforms to the ERB Tariff Filing Guidelines (TFGs)\(^2\). The applicant is notified that the application is duly submitted within 14 days of its submission.

5.3 **Notification of the unduly lodged application**

5.3.1 Where a tariff application has not been duly lodged in accordance with the TFGs, the ERB rejects the application and notifies the applicant within 14 days of receipt of the application. The notice shall give reason(s) for such a rejection. The applicant is, however, allowed to resubmit the application within 21 days of the notification of the unduly lodged application.

5.4 **Notification to the public**

5.4.1 Once the application has been accepted by the ERB as duly lodged, the Utility is obligated to issue a notice to customers and the general public, in print and electronic media of its intention to vary the tariffs for a period of 30 days.

5.4.2 The notice to the public by the Utility must specify the following:

- a) The proposed tariff adjustment in percentage terms per customer category;

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1 Test year is the year in which the proposed tariff will be implemented

2 Tariff Filing Guidelines are set of approved framework for information reporting for electricity tariff filing purposes. It provides both the regulatory accounts and the Energy Regulation Board’s (ERB) administrative process of handling tariff review applications for utilities in the electricity supply industry
b) The current tariffs and proposed tariffs in monetary terms per customer category;

c) Reasons for the proposed tariff adjustment;

d) Latest audited statements of revenue, net profit/loss and proposed revenue, net profit/loss after tariff adjustment; and

e) Areas where revenues derived from the proposed tariffs will be applied to.

5.5 Public Consultation Paper

5.5.1 Although not a legal requirement under the Act, but as an administrative procedure to make the process transparent, once the ERB accepts an application, it issues a Public Consultation Paper (PCP) for a period of 30 days in the print and electronic media inviting consumers to submit written submissions (comments and their views) on the tariff application. The PCP may include information from the application. The Utility shall indicate in the application which of the information is deemed confidential. The ERB shall make the final decision on confidentiality.

5.6 Receipt of written submissions from consumers and the public

5.6.1 Written submissions from consumers and the public received by the ERB shall be availed to the Utility before the public hearings are held. The applicant shall prepare written responses to the submissions which shall be submitted to the ERB before the hearings.

5.7 Public Hearing

5.7.1 Following receipt of submissions from consumers and members of the public, the ERB convenes public hearings in selected parts of the country, where those who made written submissions and the applicant are accorded an opportunity to make oral presentations of their submissions.
5.7.2 The notice of invitation to the public hearing is issued to members of the public and those who made written submissions not later than 14 days after expiration of the notice inviting submissions.

5.8 Tariff Determination and Announcement

5.8.1 After the public hearings, the ERB considers the application including submissions from various stakeholders and then renders its decision on the tariff application. Where no submissions have been received, the ERB may proceed to consider the tariff application and makes its decision and an announcement to the public of the decision. The applicant is also notified in writing accordingly.

6. ELECTRICITY TARIFF DETERMINATION

6.1 Revenue Requirement Methodology

6.1.1 The ERB uses the Revenue Requirement (RR) Methodology otherwise known as the Rate of Return (RoR) or the Cost of Service approach in determining electricity tariffs.

6.1.2 The main principle of RoR is that revenues of the regulated Utilities have to cover their operating and maintenance expenses, taxes and depreciation, and have to ensure a fair rate of return on assets utilised for generating, transmission, distribution and supply of electricity. The generic formula for RR is shown below:

\[ RR = O + D + T + (r \times B) \]

Where:

\[ RR \quad = \quad Revenue \quad Requirement \]
\[ O \quad = \quad Allowed \quad operating \quad and \quad maintenance \quad expenses \]
\[ D \quad = \quad Depreciation \quad is \quad allowed \quad depreciation \quad expense \quad associated \quad with \quad the \quad Rate \quad Base \]
\[ T \quad = \quad Corporation \quad tax \]
\[ r \quad = \quad Allowed \quad rate \quad of \quad return \quad (WACC \quad or \quad Benchmarked) \]
\[ B \quad = \quad Rate \quad Base \quad (or \quad Regulatory \quad Asset \quad Base) \]

\(^3\) R is currently benchmarked at 6% Real
6.1.3 To arrive at a tariff, ERB reviews and verifies all information related to the components that make up the revenue requirement in the Utility’s tariff application. The applicable formula for average tariff determination for each customer category is shown below:

\[ T_F = \frac{RR}{E} \]

Where:

- \( T_F \) = average tariff per customer category
- \( RR \) = Utility’s revenue requirement attributable to a customer category
- \( E \) = energy demand in kilowatt hours

6.2 The principles underlying Revenue Requirement

6.1.1 In determining tariffs for all customers, the ERB ensures that tariffs approved for each customer category reflect the cost each customer category imposes on the system;

6.1.2 Recovery of prudently incurred costs by the Utility, that is, only just and reasonable costs incurred wholly and exclusively for the provision of electricity are allowed in the tariff determination process;

6.1.3 Recognition of used and useful Utility assets, that is, only assets currently used by the utility to provide electricity to its customers are included in the rate base;

6.1.4 Financial sustainability of the Utility, that is, the applicable tariffs should enable the utility cover both capital and operational costs as well as earn a reasonable return;

6.1.5 The need to attain cost reflective tariffs, that is, the determined tariff must be consistent with the Government’s National Energy Policy (NEP) of 2008 that advocates for cost reflective pricing of all energy services and products;

6.1.6 Delivery of quality service, that is, the determined tariff must be accompanied by noticeable improvements in the quality of services provided; and
6.1.7 Social considerations for customers with low income levels, that is, the tariff must remain accessible and affordable. (In the case of Zambia R1\(^4\) is a proxy for a lifeline tariff).

6.3 **Allowable operating and maintenance expenses**

6.3.1 Allowable operating expenses relates to all expenditure just and reasonable incurred wholly and exclusively for generation, transmission, distribution and supply of electricity. The costs include:

a) Primary costs directly related to generation of electricity (diesel, water charges),

b) Electricity purchases (from Independent Power Producers (IPP)s, Bilateral Agreements and Southern Africa Power Pool (SAPP));

c) Wheeling charges;

d) Staff costs;

e) Maintenance costs;

f) Financing costs;

g) Operating costs;

h) Overheads; etc.

6.3.2 The qualifying criteria for allowable operating and maintenance costs are outlined below:

a) Expenses must be incurred in an arm’s length transactions;

b) Expenses must be incurred in the normal operation of generation, transmission, distribution and supply of electricity, including a reasonable level of refurbishment, repairs and maintenance costs;

c) Expenses must be prudently incurred after careful consideration of available options. Such consideration

4 Although currently Zambia does not have a life line tariff
would entail a competitive bidding and transparency in the procurement process;

d) Limited expenses for research and development maybe included after the ERB satisfies itself that they related to business operations.

6.3.3 Operating expenses that do not conform to the above criteria may not be included in the revenue requirement. This includes:

a) Expenses above the Key Performance Indicator (KPI) threshold;
b) Donations;
c) Social Responsibility costs;
d) Penalties;
e) Unreasonable costs;
f) Expenditure of a capital nature.

6.4 Allowable Depreciation expense

6.4.1 The depreciation component of the allowed revenue requirement is computed on the Historical cost of the Rate Base on a straight line basis over the useful economic life of the asset.

6.5 Corporate Tax rate

6.5.1 The ERB shall use the marginal corporation tax rate to estimate the impact of taxation on the licensee. The tax rate is equal to fixed rate for manufacturing companies.

6.6 Rate of Return

6.6.1 A real rate of return of 6% shall be applied uniformly to all used and useful assets deployed by the Utility in generation, transmission, distribution and supply of electricity. The rate was determined through a bench marking exercise with other regional regulators.
6.7 Rate Base or Regulatory Asset Base

6.7.1 The Rate Base or Regulatory Asset Base covers all assets employed by the regulated Utility in generation, transmission, distribution and supply of electricity. The following are conditions associated with determining whether assets may be included in the rate base.

a) Assets held by the Utility must be used and useful for the purpose of generating, transmission, distributing and supplying electricity and must be long-term in nature. Used and useful means that assets should be in a condition to supply demand in the short-term (i.e. within 12 months) and long-term in nature means that assets will remain used and useful for a period of more than 12 months.

b) Subsidized assets not financed by the Utility may not be included in the rate base. Partially financed assets may be included on a proportional basis.

c) Future assets are excluded from the rate base until they are useful and useful (enter into commercial operation).

d) Working capital determined as a proportion of the Utility’s annual Operating expenses.

6.8 Asset Valuation

6.8.1 Asset valuation for the purpose of determining the Rate Base is based on the net Replacement Cost.

7. TARIFF STRUCTURE - Residential

7.1 Current tariff structure for residential consumers is based on a three tier inclining block tariffs methodology. The pricing or billing is based on energy and monthly fixed charges.
### Band Consumption level Tariffs ZMW

<table>
<thead>
<tr>
<th>Band</th>
<th>Consumption level</th>
<th>Tariffs ZMW</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Up-to 100kWh</td>
<td>0.15/kWh</td>
</tr>
<tr>
<td>R2</td>
<td>101 – 300 kWh</td>
<td>0.31/kWh</td>
</tr>
<tr>
<td>R3</td>
<td>Above 301 kWh</td>
<td>0.51/kWh</td>
</tr>
<tr>
<td>Fixed Charge</td>
<td>Fixed Monthly Charge</td>
<td>18.23/Month</td>
</tr>
</tbody>
</table>

8. **KEY PERFORMANCE INDICATORS TARIFF DETERMINATION RULES**

8.1 ERB monitors the overall performance of ZESCO using the Key Performance Indicator (KPI) framework. The framework is based on a reward/penalty assessment mechanism that is aligned to the tariff determination process.

8.2 One hundred percent (100%) of the ERB determined tariff would be awarded for scoring 75% and above on the KPIs.

8.3 Seventy five percent (75%) of the ERB determined tariff would be awarded for scoring between 50% and 75%.

8.4 Fifty percent (50%) of the ERB determined tariff would be awarded for scoring between 25% and 50%; and

8.5 Twenty five percent (25%) of the ERB determined tariff would be awarded for scoring less than 25%.

9. **TARIFF DECISION TIME SCALE**

9.1 The Tariff review process has to be completed within 90 days from the date of receipt of duly lodged application as provided for under the Tariff Filing Guidelines.