



Regulating Energy for Sustainable Development

THE NEW TARIFF METHODOLOGY

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1 ABBREVIATIONS AND ACRONYMS

“**SMO**” stands for System Market Operator.

“**SB**” stands for Single Buyer.

“**PPA**” stands for Power Purchase Agreement.

“**IPP**” stands for Independent Power Producer.

“**O&M**” stands for Operation and Maintenance.

“**RAB**” stands for Regulatory Asset Base.

“**CAPEX**” stands for Capital Expenditure.

“**OPEX**” stands for Operating Expenditure.

“**CPI**” stands for Consumer Price Index as published by the National Statistics Office.

“**kWh**” stands for Kilowatt-hour.

“**MWK**” stands for Malawi Kwacha.

“**TOU**” stands for Time of Use.

2 CHAPTER I: DEFINITIONS

“**Bulk Customer Service Transactions and Stabilization Account**” means a market stabilization account funded by end-users with a last resort back-up from the Government aimed at avoiding volatility in end-users tariffs.

“**Regulator**” means the Malawi Energy Regulatory Authority (MERA).

“**Depreciated optimized replacement value**” means that the regulatory asset base is "re-valued" to be equal to the price of building or buying a modern equivalent asset, depreciated to reflect the shorter remaining life of the existing assets. An optimized system is a reconfigured system using modern technology designed to serve the current load with current technology, with some allowances for growth. This method excludes any unused or underutilized assets and allows for potential cost savings that may have resulted from technological improvement.

“**Distribution**” means the conveyance of electricity at less than 66,000 volts, or as may be prescribed by notice in the Gazette, from the transmission grid to customers through a distribution power system, and the terms “**distribute**” and “**distributing**” have corresponding meanings.

“**Economic value of the assets**” means the value of an asset derived from its ability to generate income.

“**Eligible customer**” means an end-user electricity customer that can freely choose a supplier and negotiate the electricity price.

“ESCOM Ltd.” means the Electricity Supply Corporation of Malawi.

“Generation Plant” means the electricity generating facility and equipment located at a single Site, comprising generating equipment, substation and all protective, connecting, associated or ancillary plant, equipment or buildings.

“Licensee” means a holder of a licence granted or deemed to be granted by the Authority under the Energy Regulation Act, for the generation, transmission, distribution, SMI, SB, importation or exportation of electricity.

“Net Imports” means the difference between imports and exports of electricity form Malawi to another country.

“Power Purchase Agreement or PPA” means a contract between a generator and the Single Buyer license to buy electricity for a pre-established period of time.

“Regulatory Year” means a period commencing on 1st of July of a calendar year and ending on 30th of June of the subsequent calendar year.

“Tariff Period” means a multi-year period fixed by The Regulator from time to time, usually 4 years, for which the principles of determination of revenue requirement and tariff will be fixed.

“Tariff Schedule” means the end-user tariffs.

“Transmission” means the conveyance of electricity at 66,000 volts or more, or as may be prescribed by notice published in the Gazette, from generators or import points to distributors or large customers or export points through a transmission power system, and the terms **“transmit”** and **“transmitting”** have corresponding meanings.

“Transmission Customers” are those customers connected to the transmission grid.

3 CHAPTER II: COMPONENTS OF THE TARIFF

This Tariff Methodology is issued in compliance with the principles included in Conditions (16), (17) and (18) of the Electricity Act.

The Tariff Schedule shall:

- (a) be in a form which shall be approved by the Regulator considering the principles of:
 - I. predictability of adjustments,
 - II. financial sustainability of licensees,
 - III. price stability,
 - IV. equity and fairness,

- V. cost of service,
 - VI. improving quality of service, and
 - VII. considering the value of the Malawi Kwacha in relation to foreign currencies.
- (b) contain such detail as shall be necessary to enable any customer to make a reasonable estimate of the charges to which he would become liable for purchases of electricity;
 - (c) be set at levels sufficient to allow the licensee an opportunity to recover his costs of service, including a reasonable return on capital and encourage efficiency;
 - (d) be set excluding expenses that cannot be reasonably associated with the supply of electricity; and
 - (e) separately identify in its determination:
 - I. the component of the tariff relating to the use of the Licensee's Distribution System and Customer Service to end-users;
 - II. the component of the tariff relating to the use of the Transmission System;
 - III. the component of the tariff relating to the System and Market Operation (hereinafter SMO);
 - IV. the component of the tariff relating to Single Buyer (hereinafter SB); and
 - V. the component of the tariff related to electricity generation and imports.

In this methodology, the components are grouped as follows:

- (a) The Bulk Customer Service Tariffs,
 - I. that are charged by the SB Licensee to the distribution Licensee,
 - II. that include the component of the tariff relating to the use of the Transmission System, System and Market Operation and the component of the tariff related to electricity generation, as specified in Chapter III: Bulk Customer Service Tariffs;
- b) The Distribution Tariff, that includes the component of the tariff relating to the use of the Licensee's Distribution System and Customer Service to end user, as specified in Chapter IV: Distribution and Customer Service tariffs.

Transmission Customers shall only pay the Bulk Customer Service Tariff, while other Customers shall pay a tariff comprising all five components.

SMO Licensee shall charge SMO tariffs to SB Licensee. Transmission Licensee shall charge transmission tariffs to SB Licensee.

Charges between licensees shall be levied monthly. Where the two licensees are separate legal entities the charge will be made through an invoice and where the two licensees operate within a single legal entity the charge will be made through a journal voucher.

4 CHAPTER III: BULK CUSTOMER SERVICE TARIFFS

4.1 RATIONALE

The SB, pursuant to Condition [X] of the SB License, shall determine the Bulk Customer Service Tariffs by computing the generation costs, the transmission costs, the SMO costs and SB costs according to the methodology herein established, and submit them to the Regulator for approval.

4.2 GENERATION COSTS

4.2.1 Structure

Electricity production is a responsibility of the Generation Licensees (hereinafter the “Generators”), licensed by the Regulator. The energy and capacity produced by the Generators, shall be purchased by the SB Licensee.

Prices for Capacity and Energy sold by the Generators and purchased by the SB Licensee are defined in the Power Purchase Agreements (PPAs) establishing commercial conditions for such sales and purchases.

Based on the prices established in the PPAs and the quantities generated by each Generator arising from the economic dispatch performed by the SMO Licensee, the SB Licensee shall determine the generation costs that shall be used to calculate the Bulk Customer Service Tariffs.

The economic dispatch performed by the SMO shall be subject to the conditions stated in the market rules.

4.2.2 Power Purchase Agreements (PPAs)

There shall be two types of PPAs:

- (a) PPAs between each Independent Power Producer (IPPs) (existing or to be commissioned in the future) and the SB Licensee;
- (b) PPAs between each power plant belonging to [name of recently unbundled] Generation Licensee and the SB Licensee.

4.2.2.1 PPAs with IPPs

The PPAs with IPPs shall be the agreements signed between such IPPs and the SB Licensee provided they are approved by the Authority.

4.2.2.2 PPAs with [] Generation Licensee

Power Purchase Agreements (PPAs) shall be established between the [] Generation Licensee and the SB Licensee for each Generation Plant, on the following basis:

4.2.2.2.1 For existing Thermal Generation

For Thermal Generation, the Generation Licensee shall establish, for each Generation Plant included in the Generation License, a PPA with a minimum duration of fifteen (15) years.

The price formula in such a PPA shall be a two-part tariff, comprising:

- (a) a capacity price, aimed at recovering fixed costs associated with each generating Plant, including:
- I. Depreciation of the assets in case the assets are not fully depreciated.
 - II. Efficient O&M fixed costs, including administrative costs.
 - III. A fair and reasonable rate of return on assets on the non-depreciated value of assets.
 - IV. For the purpose of calculation if the capacity charge, the initial regulatory asset base shall be the existing economic value of the assets considering current revenues for each power plant and existing operation and maintenance costs.
 - V. Taxes when applicable.
 - VI. Capacity prices shall be recalculated on an annual basis based on the criteria included in this methodology and supplementary guidelines that the Regulator may issue in the future.
- (b) energy price, aimed at recovering:
- I. fuel costs (including no load heat rate and incremental heat rate);
 - II. efficient variable O&M costs;
 - III. startup costs;
 - IV. others as may deem needed;
 - V. Energy prices shall be only adjusted because of fuel cost changes every six months based on the criteria included in this methodology and supplementary guidelines that the Regulator may issue in the future.

4.2.2.2.2 For existing hydropower Generation

For Hydro Generation, the Generation Licensee shall establish, for each Generation Plant included in the Generation License, a PPA with a minimum duration of fifteen (15) years.

The price formula in such a PPA take the form of a capacity payment. The capacity price, aimed at recovering fixed costs associated with each generating Plant, including:

- I. Depreciation of the assets in case the assets are not fully depreciated.
- II. Efficient O&M costs, including administrative costs.
- III. A fair and reasonable rate of return on assets on the non-depreciated value of assets.
- IV. For the purpose of calculation of the capacity charge, the initial regulatory asset base shall be the existing economic value of the assets considering current revenues for each power plant and existing operation and maintenance costs.
- V. Taxes when applicable.
- VI. Capacity prices shall be recalculated on an annual basis based on the criteria included in this methodology and supplementary guidelines that the Regulator may issue in the future.

4.2.2.2.3 For new power plants

The PPAs with [] Generation Licensee regarding new power plants shall be the agreements signed between [] Generation Licensee and the SB Licensee provided they are approved by the Authority

4.2.2.2.4 For major overhauls of existing facilities

Upon decision by SB Licensee, a case of a large overhauling of an existing facility shall be considered a cause for termination of existing PPA. The new PPAs to be signed between SB Licensee and [] Generation Licensee shall ensure the financial sustainability of the Generation Licensee. All agreements shall be approved by the Authority.

4.2.2.3 Filing and Approval of [] Generation PPAs for existing power plants

Capacity and energy prices for each [] Generation PPA, shall be prepared by the [] Generation Licensee, and submitted to the Regulator by the SB Licensee for approval according to the filing procedure established by the Regulator in accordance with provisions in Chapter V: Tariff filing and information disclosure.

4.2.2.4 Indexation

Capacity prices stated in each [] Generation PPA shall be recalculated. No indexation is allowed within the year.

Fuel prices stated in each [] Generation PPA shall be indexed to fuel prices every six months based on the change in relevant fuel prices as provided by [local supplier to Licensee], or other entity, with which the [] Generation Licensee has entered into a Fuel Supply Agreement (FSA).

4.3 ALLOWED REVENUES FOR TRANSMISSION LICENSEE

This section of the Tariff Methodology deals only with the Transmission Business costs, revenues and tariffs.

This section of the methodology defines:

- (a) type of Tariff Methodology for the Transmission Business;
- (b) the methodology to determine the Transmission System Allowed Revenue;
- (c) the allocation methodology, specifying how the Transmission System Allowed Revenue is charged to the users of the Transmission System (hereinafter “Transmission Users”).

4.3.1 Type of Tariff Methodology

The Transmission System Allowed Revenue is the revenue that the Transmission Licensee is allowed to collect from the Transmission Users for the use of the Transmission System, excluding connection charges¹.

¹ Connection costs will be directly negotiated between the Transmission Licensee (Transmission Business) and the Transmission Users on a case by case basis.

Allowed Revenue shall be calculated based on a Multi-Year Tariff System in which a cap on overall revenues shall be imposed during the tariff period regardless of the number of Transmission Users, energy transmitted, etc.

The Tariff Period shall be four (4) years.

Transmission System Allowed Revenue shall be annually adjusted considering the factors contained in the Revenue Control Formula.

The Transmission Licensee shall make a Tariff Filing to the Regulator based on the Tariff Methodology established in this section.

- (a) The Tariff Filing shall be done before the commencement of the Tariff Period and it shall include the approved cost components and the Revenue Control Formula.
- (b) Once every year after the initial Tariff Filing, a simplified filing shall be done to demonstrate that the revenue control formulae are properly applied.

4.3.2 Transmission Base Allowed Revenue

The base allowed revenue shall be determined for a Tariff Period.

The Transmission System Allowed Revenue shall be calculated based on a forecast cash flow for firm² discounted at the Allowed Rate of Return on Capital for the Tariff Period, considering:

- (a) Initial Regulatory Asset Base (RAB) (the value of the assets belonging to the Licensee to provide the transmission service, excluding connection assets);
- (b) Rolling forward of the initial RAB, considering Capital Expenditure (CAPEX) for the period;
- (c) Depreciation of existing non-depreciated assets;
- (d) Return on capital;
- (e) Efficient operational expenditure (OPEX);
- (f) Taxes.

4.3.2.1 Initial Regulatory Asset Base

To compute the assets and their valuation, the depreciated optimized replacement value shall be calculated based on the existing market conditions and the used and useful assets to provide the service fulfilling the quality level requested by the License and/or associated regulations issued by the Authority. The asset base shall exclude the value of the subsidized assets paid for through donations/grants or by customers. CAPEX that may have been incurred after closing the annual accounts shall not be considered until a new tariff is approved for the subsequent Tariff Period.

The asset base shall include the working capital required to run the business. Working capital needs shall be filed by the Licensee and approved by the Authority.

² The free cash flow each year under a cash flow for firm is calculated as EBITDA (earnings before interest, taxes, depreciation and amortization) minus taxes and CAPEX.

4.3.2.2 Depreciation Allowance

Depreciation shall be calculated on the straight line method and the depreciation rates shall be those that are currently used in the statutory accounts. Once an asset is fully depreciated, it shall be removed from the gross value of the assets. Depreciation allowance shall include the depreciation of the assets financed by third parties or granted on advantageous conditions.

4.3.2.3 Return on Assets

The calculation of the Transmission Allowed Revenue shall include a return on invested capital. The Regulator shall define which methodology is used in each tariff review for defining the return on assets. The rate of return on assets shall be calculated considering a weighted average of the cost of debt and equity, employing the actual debt to asset ratio. The rate of return on assets shall be defined by the Regulator for each Tariff Period.

Assets financed by third parties, granted on advantageous conditions (non-debt associated or below-market interest rates), shall not be recognized with any return on assets.

4.3.2.4 Capital Expenditure (CAPEX) Allowance

RAB shall be determined for every year of the Tariff Period. The closing value (value at the end of one year) of the RAB is set equal to the opening value of the RAB plus the CAPEX during the year, minus regulatory depreciation during the year.

The Forecast CAPEX program for the Transmission Licensee shall be the Transmission Development Plan approved by the Regulator for the next 4 years. The CAPEX program shall include both load-related CAPEX and non-load related CAPEX.

4.3.2.5 Treatment of Differences between Forecast CAPEX and Actual CAPEX

Every year during the Tariff Period, the Regulator will conduct an ex-post analysis, checking what CAPEX has actually been incurred.

- (a) In case of underinvestment in relation to the forecast CAPEX included in the filing for the Transmission Allowed Revenue, the difference will be fully clawed-back including the time value of money, at a rate defined by the Authority and transferred to customers through tariffs in the following Tariff Period provided that the cumulated effect on the allowed revenue calculated using the actual CAPEX be lower than 10%.
- (b) In case the actual CAPEX is higher than the forecast, the Regulator will request for all the relevant information to determine whether the additional investment has been prudent and efficient, and the difference will be allowed, including the time value of money at a rate defined by the Authority, and transferred to customers through tariffs in the following Tariff Period provided that the cumulated effect on the allowed revenue calculated using the actual CAPEX be lower than 10%.
- (c) In the cases the cumulated effect on the allowed revenue calculated using the actual CAPEX be higher than 10% in any sign, the deviation shall be fully clawed-back, and transferred to customers through tariffs in the following year of the Tariff Period.

4.3.2.6 Operating Expenditure (OPEX) and administrative costs

The OPEX to be included in the calculation of the Transmission Base Allowed Revenue shall be the OPEX forecast for the tariff period by the Transmission Licensee. The Licensee shall justify the OPEX forecast based on the forecast demand increase and the actual OPEX of the audited accounts of the last financial year. This OPEX shall include the expenditure on License requirements (levies, insurance, etc.), the efficient cost of operating the Transmission System and the required administrative costs of the utility.

The OPEX component of the Transmission Base Allowed Revenue shall be adjusted at a rate defined by an Efficiency factor (OPEXX) per year during the Tariff Period. OPEXX (%) shall be fixed by the Regulator before the commencement of the Tariff Period.

For successive Tariff Periods, the Regulator may revise the methodology for computing the efficient OPEX to be included in the Transmission Base Allowed Revenue.

4.3.2.7 Taxes

All taxes applicable to the Transmission Business and imposed by the relevant Tax Laws and Regulations shall be included in the tariff filing, together with the proposed adjustment mechanisms in case the tax scheme changes during the Tariff Period.

4.3.2.8 Adjustments to Transmission Base Allowed Revenues

The adjustment mechanisms are intended to adjust the Transmission Base Allowed Revenue within the Tariff Period, to account for inflation and exchange rate variations.

The adjustment shall be based on two indices: (i) Malawi Consumer Price Index (CPI) and (ii) foreign exchange (KWACHA : USD) rate. Weights to be used for each one of them shall be proposed by the Transmission Licensee for approval as a part of the tariff filing.

4.3.2.9 Revenue Control Formula

Based on the previous definitions, the following control formula will be applied to the transmission base allowed revenue:

$$AR_y = AR_{y-1} \times (1 - X) \times \left[a \times (1 + CPI_{y-1}) + (1 - a) \times \left(\frac{FX_y}{FX_{y-1}} \right) \right]$$

where:

AR_y	Allowed Base Revenue in year “y”
AR_{y-1}	Allowed Base Revenue in year “y-1”
a	Share of local costs in total costs of the Transmission Licensee to be approved by the Regulator based on the filing by Transmission Licensee.
CPI_{y-1}	Accumulated change in Consumer Price Index (%) during year “y-1”
FX_y/FX_{y-1}	Average change in the KWACHA : USD exchange rate during last quarter of year “y-1”
X	OPEXX (%)

All aspects requiring detailed procedures for implementation of this formula with regard to availability and sources of indices shall be proposed by the Transmission Licensee along with the tariff filing, and would be subject to Regulatory approval.

4.3.2.10 Filing

Tariffs and required information, shall be submitted to the Regulator by the Transmission Licensee for approval according to the filing procedure established by the Regulator in accordance with provisions in Chapter V: Tariff filing and information disclosure.

4.3.3 Technical Losses

Technical losses in the Transmission System will be allowed to be the passed-through to Bulk Customer Service Tariffs. The forecast transmission losses shall be calculated by the SMO Licensee as a part of the Annual Operating Plan, and the actual transmission losses shall be measured through the metering system. In the event that the metering system is not available, the Regulator may allow the Transmission Licensee to use forecast transmission losses for determining the Bulk Customer Service Tariffs.

The Regulator may establish a cap for the maximum losses in the Transmission System.

4.3.4 Allocation Methodology

Transmission System Allowed Revenue shall be collected in the form of a Transmission Tariff, only from the SB Licensee.

The Transmission Tariff shall be in the form of a one-part capacity charge. Details for its calculation are included in the Bulk Customer Service Tariff Section.

4.3.5 Reactive Power Tariffs

The Regulator may establish a compensation mechanism for reactive power through a Reactive Power Tariff, if deemed necessary.

4.4 ALLOWED REVENUES FOR SMO LICENSEE

4.4.1 Type of Tariff Methodology

The SMO Allowed Revenue is the revenue that the SMO Licensee is allowed to collect due to its activity. SMO Allowed Revenue shall be calculated based on a Multi-Year Tariff System in which a cap on overall revenues shall be imposed during the tariff period.

The Tariff Period shall be four (4) years.

The SMO shall make a tariff filing to the Regulator based on the methodology established in this section, in the following way:

- (a) Before the beginning of the Tariff Period, the filing shall be complete, including approval of cost components and Revenue Control Formulae.
- (b) Once a year after the initial filing, during the Tariff Period, a simplified filing with the purpose of demonstrating that the Revenue Control Formulae are properly applied.

4.4.2 SMO Allowed Revenue

The SMO Allowed Revenue shall be calculated based on a forecast cash flow for firm for the tariff period, considering:

- (a) Initial Regulatory Asset Base (RAB) (the value of the assets belonging to the Licensee to provide the service).
- (b) Rolling forward of the initial regulatory asset base, considering the forecast CAPEX for the period.
- (c) Depreciation of existing non-depreciated assets.
- (d) Return on capital.
- (e) Efficient operational expenditure (OPEX).
- (f) Taxes.

Calculation of Allowed Revenues shall take into account the non-regulated revenues that may exist.

4.4.2.1 Initial Regulatory Asset Base

To compute the assets and their valuation, the depreciated optimized replacement value shall be calculated based on the existing market conditions and the used and useful assets to provide the service fulfilling the quality level requested by the License and/or associated regulations issued by the Authority. The asset base shall exclude the value of the subsidized assets paid for through donations/grants or by customers. CAPEX that may have been incurred after closing the annual accounts shall not be considered until a new tariff is approved for the subsequent Tariff Period.

4.4.2.2 Depreciation Allowance

Depreciation shall be calculated on the straight line method and the depreciation rates shall be those that are currently used in the statutory accounts. Once an asset is fully depreciated, it shall be removed from the gross value of the assets. Depreciation allowance shall include the depreciation of the assets financed by third parties or granted on advantageous conditions.

4.4.2.3 Return on Assets

The calculation of the SMO Allowed Revenue shall include a return on invested capital. The Regulator shall define which methodology is used in each tariff review for defining the return on assets.

The rate of return on assets shall be calculated considering a weighted average of the cost of debt and equity employing the actual debt to asset ratio. The rate of return on assets shall be defined by the Regulator for each tariff period.

Assets financed by third parties, granted on advantageous conditions (non-debt associated or below-market interest rates), shall not be recognized with any return on assets.

4.4.2.4 Capital Expenditure (CAPEX) Allowance

RAB shall be determined for every year of the tariff period. The closing value (value at the end of one year) of the RAB is set equal to the opening value of the RAB plus the CAPEX during the year, minus regulatory depreciation during the year.

The forecast CAPEX program for the SMO Licensee shall be based on the 4-year Plan developed by the SMO Licensee approved by the Authority.

4.4.2.5 Operating Expenditure (OPEX) and administrative costs

The OPEX to be included in the calculation of the SMO Allowed Revenue shall be the forecast OPEX for the tariff period by the Licensee. The Licensee shall justify the forecast based on the actual OPEX in the audited accounts of the last financial year. This OPEX shall include the expenditure on License requirements (levies, insurance, etc), the efficient cost of operation and the required administrative costs of the utility.

The OPEX component of the base allowed revenue shall be adjusted at a rate defined by an Efficiency Factor (OPEXX) per year during the following years until the end of the tariff period. OPEXX (%) shall be fixed by the Regulator before the start of the tariff period.

In successive Tariff Periods, the Regulator may revise the methodology for computing the efficient OPEX to be included in the SMO Allowed Revenue.

4.4.2.6 Taxes

All taxes applicable to the SMO business and imposed by the Tax Laws and Regulations shall be included in the tariff filing, together with the proposed adjustment mechanisms in case the tax scheme changes during the Tariff Period.

4.4.2.7 Adjustments

The adjustment mechanisms are intended to adjust the SMO Allowed Revenue within the Tariff Period for inflation and exchange rate variations.

The adjustment shall be based on two indices: (i) Consumer Price Index (CPI) and (ii) foreign exchange (KWACHA:USD) rate. Based on the filed shares by the SMO Licensee, the Regulator will approve the share to be employed in the revenue control formula.

4.4.2.8 Revenue Control Formula

Based on the previous definitions, the following control formula shall be applied to the SMO Allowed Revenue:

$$AR_y = AR_{y-1} \times (1 - X) \times \left[a \times (1 + CPI) + (1 - a) \times \left(\frac{FX_y}{FX_{y-1}} \right) \right]$$

where:

AR_y	Allowed base revenue in year “y” (MWK)
AR_{y-1}	Allowed base revenue in year “y-1” (MWK)
a	share of local costs in total costs of TL to be approved by the Regulator based on the filing by TL.
CPI_{y-1}	accumulated change Consumer Price Index (%) of year “y-1”
FX_y/FX_{y-1}	Average change in the Malawi KWACHA:USD exchange rate of year “y-1”
X	Efficiency factor (%) is the translation of OPEXX in terms of total revenues

4.4.3 Filing

Tariffs and required information, shall be submitted to the Regulator by the SMO Licensee for approval according to the filing procedure established by the Regulator in accordance with provisions in Chapter V.

4.5 ALLOWED REVENUES FOR SB LICENSEE

This section establishes the allowed revenues for the SB Licensee required for performing the duties of the Single Buyer in the corresponding License.

The allowed revenue for the SB Licensee shall include the following two main components:

- (a) The allowed revenue required for operation of Single buyer Business
- (b) The working capital allowance for the Bulk Customer Service Transactions and stabilization Account

4.5.1 Allowed Revenue Required for Operation of Single buyer Business

4.5.1.1 Type of Tariff Methodology

The SB Allowed Revenue is the revenue that the SB Licensee is allowed to collect due to its activity

SB Allowed Revenue shall be calculated based on a Multi-Year Tariff System in which a cap on overall revenues shall be imposed during the tariff period.

The Tariff Period shall be four (4) years.

The SB shall make a tariff filing to the Regulator based on the methodology established in this section, in the following way:

- (a) before the beginning of the Tariff Period, the filing shall be complete, including approval of cost components and Revenue Control Formulae.
- (b) once a year after the initial filing, during the Tariff Period, a simplified filing with the purpose of demonstrating that the Revenue Control Formulae are properly applied.

4.5.1.2 SB Allowed Revenue

The SMO Allowed Revenue shall be calculated based on a forecast cash flow for firm for the tariff period, considering:

- (a) Initial Regulatory Asset Base (SB) (the value of the assets belonging to the Licensee to provide the service).
- (b) Rolling forward of the initial regulatory asset base, considering the forecast CAPEX for the period
- (c) Depreciation of existing non-depreciated assets
- (d) Return on capital
- (e) Efficient operational expenditure (OPEX)
- (f) Taxes

Calculation of Allowed Revenues shall take into account the non-regulated revenues that may exist.

4.5.1.2.1 Initial Regulatory Asset Base

To compute the assets and their valuation, the depreciated optimized replacement value shall be calculated based on the existing market conditions and the used and useful assets to provide the service fulfilling the quality level requested by the License and/or associated regulations issued by the Authority. The asset base shall exclude the value of the subsidized assets paid for through donations/grants or by customers. CAPEX that may have been incurred after closing the annual accounts shall not be considered until a new tariff is approved for the subsequent Tariff Period.

The asset base shall include the working capital required to run the business. Working capital needs shall be filed by the Licensee and approved by the Authority.

4.5.1.2.2 Depreciation Allowance

Depreciation shall be calculated on the straight line method and the depreciation rates shall be those that are currently used in the statutory accounts. Once an asset is fully depreciated, it shall be removed from the gross value of the assets. Depreciation allowance shall include the depreciation of the assets financed by third parties or granted on advantageous conditions.

4.5.1.2.3 Return on Assets

The calculation of the SB Allowed Revenue shall include a return on invested capital. The Regulator shall define which methodology is used in each tariff review for defining the return on assets.

The rate of return on assets shall be calculated considering a weighted average of the cost of debt and equity employing the actual debt to asset ratio. The rate of return on assets shall be defined by the Regulator for each tariff period.

Assets financed by third parties, granted on advantageous conditions (non-debt associated or below-market interest rates), shall not be recognized with any return on Assets.

4.5.1.2.4 Capital Expenditure (CAPEX) Allowance

RAB shall be determined for every year of the Tariff Period. The closing value (value at the end of one year) of the RAB is set equal to the opening value of the RAB plus the CAPEX during the year, minus regulatory depreciation during the year.

The forecast CAPEX program for the SB Licensee shall be based on the 4-year Plan developed by the SB Licensee and approved by Authority.

4.5.1.2.5 Operating Expenditure (OPEX) and Administrative costs

The OPEX to be included in the calculation of the SB Allowed Revenue shall be the forecast OPEX for the tariff period by the Licensee. The Licensee shall justify the forecast based on the actual OPEX in the audited accounts of the last financial year. This OPEX shall include the expenditure on License requirements (levies, insurance, etc), the efficient cost the SB activity and the required administrative costs of the utility.

The OPEX component of the base allowed revenue shall be adjusted at a rate defined by an Efficiency Factor (OPEXX) per year during the Tariff Period. OPEXX (%) shall be fixed by the Regulator before the start of the tariff period.

For successive Tariff Periods, the Regulator may revise the methodology for computing the efficient OPEX to be included in the SB Allowed Revenue.

4.5.1.2.6 Taxes

All taxes applicable to the SB business and imposed by the relevant Tax Laws and Regulations shall be included in the tariff filing, together with the proposed adjustment mechanisms in case the tax scheme changes during the Tariff Period.

4.5.1.2.7 Adjustments

The adjustment mechanisms are intended to adjust the SB Allowed Revenue within the Tariff Period for inflation and exchange rate variations.

The adjustment shall be based on two indices: (i) Consumer Price Index (CPI) and (ii) foreign exchange (KWACHA : USD) rate. Weights to be used for each one of them shall be proposed by the SB for approval as a part of the tariff filing.

4.5.1.2.8 Revenue Control Formula

Based on the previous definitions, the following control formula shall be applied to the SB Allowed Revenue:

$$AR_y = AR_{y-1} \times (1 - X) \times \left[a \times (1 + CPI) + (1 - a) \times \left(\frac{FX_y}{FX_{y-1}} \right) \right]$$

where:

AR_y	Allowed base revenue in year “y” (MWK)
AR_{y-1}	Allowed base revenue in year “y-1” (MWK)
a	share of local costs in total costs of TL to be approved by the Regulator based on the filing by TL.
CPI_{y-1}	accumulated change Consumer Price Index (%) of year “y-1”
FX_y/FX_{y-1}	Average change in the Malawi KWACHA: USD exchange rate of year “y-1”
X	Efficiency factor (%) is the translation of OPEXX in terms of total revenues

4.5.2 Bulk Customer Service Transactions Account

The Bulk Customer Service Transactions Account shall be used to settle transactions between the SB Licensee and the following parties:

- (a) Transmission Licensee;
- (b) Generation Licensees;
- (c) SMO Licensee;
- (d) Distribution Licensee;
- (e) Transmission Customers.

In this account, the following transactions shall take place:

- (a) Payments made by the Distribution Licensee and Transmission Customers for the purchase of Bulk Customer Service Electricity;
- (b) Payments to the Transmission Licensee;
- (c) Payments to the SMO Licensee;
- (d) Payments to Generation Licensees for selling of generation according to the PPAs;
- (e) Other transactions as directed by the Authority.

4.5.3 Working Capital Allowance for the Bulk Customer Service Transactions and Stabilization Account

The Bulk Customer Service Transactions and Stabilization Account requires working capital in form of contingent cash, as there is the probability that the forecast Bulk Customer Service Tariff to be different from actual. The allowed Bulk Customer Service Transactions and Stabilization Account Working Capital shall be used as liquid capital to make effective the payments to the Creditors when needed.

The SB Licensee in coordination with the Government of Malawi shall implement the Transactions and Stabilization Account to ensure that the working capital is adequate to meet payments needs in all cases.

The Transactions and Stabilization Account shall be a ring-fenced account managed by SB Licensee and funded through end-user tariffs. Last resort funding shall be provided by the Government of Malawi.

The SB License shall file for an increase in tariffs to guarantee the funding of the Transactions and Stabilization Account as long as the available funds are lower than the 10% of the expected 6 months cumulated payments form the Account.

SB Licensee may provide liquidity in case of deviations from the forecast Bulk Customer Service Tariff or under any unexpected emergency situation. In this case, the SB shall be compensated due to the additional financial burden at cost. The Regulator shall approve any provision of liquidity by the PB Licensee.

The Bulk Customer Service Transactions and Stabilization Account liquidity may be invested in a prudent and efficient way following the guidelines that the Regulator shall issue.

Automatic adjustment of the end-user tariffs shall be implemented in the case of a total depletion of the Bulk Customer Service Transactions and Stabilization Account.

4.5.3.1 SB Licensee Limited Liability

The SB Licensee shall make payments from the funds available in the Bulk Customer Service Transactions and stabilization Account. In situations of cash shortfalls, the SB Licensee liability shall be limited to the funds available in the Bulk Customer Service Transactions and stabilization Account.

The management of this account shall be established by the Regulator through “Bulk Customer Service Transactions Account Management Guidelines” in cooperation with the other licensees and the Government of Malawi.

4.5.3.2 Filing

Tariffs and required information, shall be submitted to the Regulator by the SB Licensee for approval according to the filing procedure established by the Regulator in accordance with provisions in Chapter V.

4.6 DETERMINATION OF BULK CUSTOMER SERVICE TARIFF

4.6.1 Structure

Bulk Customer Service Tariffs shall be the sum of the following components:

- (a) Generation tariff
- (b) Transmission tariff
- (c) SMO tariff
- (d) SB Business tariff

Each component shall be determined following the rules established in this methodology for their determination.

Bulk Customer Service Tariffs shall be of two parts:

- (a) capacity charge
- (b) energy charge

The energy charge shall vary according to two intervals as follows:

- (a) Peak, from [] to []
- (b) Off-peak, from [] to []

4.6.2 Forecast Bulk Customer Service Tariffs

The Forecast Bulk Customer Service Tariffs will be used to determine the end use customer tariffs. The Forecast Bulk Customer Service Tariffs will be passed through to the end use customer tariffs according to the methodology defined in 5.1.2.2. The Forecast Bulk Customer Service Tariffs are calculated and filed once every six months by the SB Licensee, following the procedure defined in this methodology. The Forecast Bulk Customer Service Tariffs include the forecast for the corresponding six-month period and an adjustment factor to compensate the differences between the forecast and actual Bulk Customer Service Tariffs.

4.6.2.1 Forecast Generation Costs

Generation Costs, shall have two components:

- (a) Capacity Costs;
- (b) Energy Costs.

4.6.2.1.1 Forecast Generation Capacity Cost

The Forecast Generation Capacity Cost shall be determined once in every six-month period and shall be equal to the sum of the forecast capacity payments to Generators, based on a monthly simulation of capacity payments under each PPA.

The Forecast Generation Capacity Tariff for the period shall be equal to the Forecast Generation Capacity Cost divided by the Forecast System Coincident Peak Demand (MW) for the six-month period.

$$GC_{y,p}^F = \frac{\sum_n CP_{y;p;n}^F}{P_{y,p}^F} \left[\frac{MKW}{MW} \right]$$

$GC_{y,p}^F$: Forecast Generation Capacity Tariff

$CP_{y;p;n}^F$: Forecast capacity payment for year “y”, six month period “p” and generator “n”

$P_{y,p}^F$: Forecast System Peak Demand for year “y”, six month period “p” metered at each point of delivery to the Distribution Licensee and Transmission Customers.

“F”: Forecast

“N”: All generators

4.6.2.1.2 Forecast Generation Energy Costs

The SB Licensee shall determine the forecast total costs, by adding the forecast energy payment to all Generation Licensees and net imports according to their forecast energy delivered in all hours and the energy prices stated in PPAs. This forecast shall consider:

- (a) The forecast fuel prices provided by [] or other suppliers and the Fuel Supply Agreements
- (b) A generation dispatch schedule developed for the purpose of setting the Bulk Customer Service Tariff. This dispatch should be based on an Annual Operating Plan for a period of 12-months ahead, considering a probability of occurrence of 70%, and the best available information about the storage level of reservoirs and planned maintenance of Generating Plants. This information should be made available by SMO Licensee in due time and according to the Market rules.
- (c) A monthly simulation of the energy-related payments under each PPA.
- (d) Forecast for net import/export costs.

This total Forecast Generation Energy Costs divided by the total forecast energy purchased by the distribution licensee and transmission customers during the six month period, will provide the forecast average energy tariff.

$$GE_{y;p}^F = \frac{\sum_n \sum_{t=1}^6 EG_{y,p;n;t}^F \times EP_{y;p;n;t}^F + IC_p}{\sum_n \sum_{t=1}^6 EG_{y,p;n;t}^F + NI_p} \quad [MKW/MWh]$$

Where,

$GE_{y;p}^F$: Forecast Generation Energy tariff for the six-month period “p”

$EG_{y,p;n;t}^F$: Forecast Energy Generated for the six month period “p” by Generator “n” during month t

$EP_{y;p;n;t}^F$: Forecast Energy tariff according to the PPA for the Generator “n” in the month t of the six-month period “p” and the Energy import costs.

NI_p : Forecast Net Imported Energy in the period “p”

IC_p : Forecast Net Imported Energy Cost in the period “p”

“F”: Forecast

“N”: All Generators

“t”: –Month

4.6.2.2 Forecast Transmission Tariff

The Forecast Transmission tariff shall have two components:

- (a) Forecast Transmission Capacity Tariff
- (b) Forecast Transmission Loss Factor

4.6.2.2.1 Forecast Transmission Capacity Tariff

The SB Licensee shall determine the Forecast Transmission Capacity tariff per month for each year of the Tariff Period by dividing the Transmission System Allowed Revenues by the forecast System Peak Demand (MW) for the period according to the Annual Operating Plan, in accordance with the equation given below, assuming that the total transmission revenues are evenly recovered in each month.

$$TR_{y;p}^F = \frac{1}{12} \frac{TSAR_y}{P_{y,p}^F} \quad [MKW/MW]$$

Where,

$TR_{y;p}^F$: Forecast Transmission Capacity tariff per month for year “y”, six month period “p”

$TSAR_y$: Transmission System Allowed Revenues year “y”

$P_{y,p}^F$: Forecast System Peak Demand for year “y”, six month period “p” metered at delivery points to the Distribution Licensee and Transmission Customers.

4.6.2.2.2 Forecast Transmission Loss Factor

The SB Licensee shall determine the Forecast Transmission Loss Factor for each Time Interval according to the following methodology:

- (a) Based on the dispatch simulation provided by SMO Licensee, the SB Licensee shall calculate the forecast total losses for each Time Interval, by subtracting from the total energy received by the Transmission System, the total energy supplied from the Transmission System to the Distribution Licensee and Bulk Customer Service Customers.
- (b) The Forecast Transmission Loss Factor shall be determined for each Time Interval by dividing the Forecast Total Losses per Time Interval by the Forecast Energy Supplied per Time Interval.

$$TLF_{y,p,h}^F = \frac{TL_{y,p,h}^F}{\sum_m^M ES_{y,p;m,h}^F}$$

Where

$TLF_{y,p,h}^F$: Forecast Transmission Loss Factor, for year “y”, six month period “p” and Time Interval “h”

$TL_{y,p,h}^F$: Forecast Total Transmission Losses for Time Interval “h”, for year “y”, six month period “p”

$\sum_m^M ES_{y,p;m,h}^F$: Total Forecast Energy Supplied in year “y”, six month period “p” to the Distribution Licensee or Transmission Customer “m” in Time Interval “h”

“M”: Distribution Licensee and transmission Customers

“h”: Time Intervals 1, 2

The Regulator has the right to impose a cap on $TLF_{y,p,h}^F$ to foster efficiency in the transmission operation.

4.6.2.3 Forecast SB Business tariff

The SB Licensee shall determine the Forecast SB Business tariff for each month for the period, in accordance with the equation given below, by dividing the SB Business Allowed Revenues by the forecast System Peak Demand (MW) according to the Annual Operating Plan, presuming that the total SB Business revenues are evenly recovered in each month.

$$BSS_{y,p}^F = \frac{1}{12} \frac{BSOB_y}{P_{y,p}^F} \left[\frac{MKW}{MW} \right]$$

Where,

$BSS_{y,p}^F$: Forecast SB Business tariff for six-month period “p” of year “y”

$BSOB_y$: SB Business Allowed Revenue for year “y”

$P_{y,p}^F$: Forecast System Peak Demand for year “y”, six month period “p” metered at delivery points to the Distribution Licensee and Transmission Customers.

4.6.2.4 Forecast SMO tariff

The SB Licensee shall determine the Forecast SMO tariff for each month for the period, in accordance with the equation given below, by dividing the SMO Allowed Revenues by the forecast System Peak Demand (MW) according to the Annual Operating Plan, presuming that the total SMO revenues are evenly recovered in each month.

$$SMOS_{y,p}^F = \frac{1}{12} \frac{SMOB_y}{P_{y,p}^F} \left[\frac{MKW}{MW} \right]$$

Where,

$SMOS_{y,p}^F$: Forecast SMO tariff for six-month period “p” of year “y”

$SMOB_y$: SMO Allowed Revenue for year “y”

$P_{y,p}^F$: Forecast System Peak Demand for year “y”, six month period “p” metered at delivery points to the Distribution Licensee and Transmission Customers.

4.6.2.5 Resulting forecast Bulk Customer Service Tariffs

The two-parts, two- interval forecast Bulk Customer Service Tariffs shall include:

- (a) The addition of the tariffs of the different components.
- (b) An adjusting factor to compensate SB Licensee because of the differences between forecast tariffs and actual tariffs.

The calculation of the forecast Bulk Customer Service Tariffs shall be as follows:

$$BST_{y,p}^F(C) = GC_{y,p}^F + TR_{y,p}^F + BSS_{y,p}^F + SMOS_{y,p}^F - ADC(C)_{y,p} \left[\frac{MKW}{MW} \right]$$

$$BST_{y,p}^F(E1) = (1 + TLF_{y,p,1}^F) \times GE1_{y,p}^F - ADC(E1)_{y,p} \left[\frac{MKW}{MWh} \right]$$

$$BST_{y,p}^F(E2) = (1 + TLF_{y,p,2}^F) \times GE2_{y,p}^F - ADC(E2)_{y,p} \left[\frac{MKW}{MWh} \right]$$

Where,

$BST_{y,p}^F(C)$: Forecast Bulk Customer Service Tariff (Capacity) for year “y” and period “p”

$BST_{y,p}^F(E1)$: Actual Bulk Customer Service Tariff (Energy in peak Interval 1) for year “y” and period “p”

$BST_{y,p}^F(E2)$: Actual Bulk Customer Service Tariff (Energy in off-peak Interval 2) for year “y” and period “p”

$TLF1_{y,p,1}^F$; $TLF2_{y,p,2}^F$: Transmission Loss Factor for Time Intervals 1, 2 for year “y” and period “p”

$ADC(C)_{y,p}$: Adjusting component for capacity tariff for year “y” and period “p” as defined in 4.6.3.5.

$ADC(E1)_{y,p}$: Adjusting component for Tariff (Energy in peak Interval 1) for year “y” and period “p” as defined in 4.6.3.5.

$ADC(E2)_{y,p}$: Adjusting component for Tariff (Energy in off-peak Interval 2) for year “y” and period “p” as defined in 4.6.3.5.

4.6.3 Actual Bulk Customer Service Tariffs

Actual Bulk Customer Service Tariffs shall be calculated monthly in order to control for the deviations from the forecast Bulk Customer Service Tariffs. Nevertheless, adjustments to the end-user tariffs shall only be applied if the accumulated variation is higher than 5% or if under a total depletion of the stabilization account, as defined in 6.3.

4.6.3.1 Actual Generation Costs

Generation Costs, as defined in previous section, shall have two components:

- (a) Capacity Costs
- (b) Energy Costs

4.6.3.1.1 Actual Generation Capacity Costs

The Actual Generation Capacity Cost shall be determined monthly and this shall be equal to the addition of the actual capacity payments to Generators based on the outcomes of the actual operation registered during the month by the SMO. In cases when liquidated damages apply, this amount shall be discounted from the Actual Generation Capacity Costs.

The Actual Generation Capacity tariff for the period, shall be equal to the Actual Generation Capacity Cost divided by the Actual System Coincident Peak Demand (MW) for the month.

$$GC_t^A = \frac{\sum_n CP_{t,n}^A}{P_t^A} \quad [MKW/MW]$$

GC_t^A : Actual Generation Capacity tariff for month “t”

$CP_{t,n}^A$: Actual Capacity payment for Generator “n” in month “t”

P_t^A : Actual System Monthly Peak Demand in month “t” metered at delivery points to the Distribution Licensee and Transmission Customers.

“A”: Actual

“N”: All Generators

“t”: Actual month

4.6.3.1.2 Actual Generation Energy Costs

Based on the actual operation registered by the SMO Licensee, the SB Licensee shall determine the actual total monthly energy for each Time Interval, by adding the actual energy payments to all Generating Plants costs in this month, according to their actual energy delivered in each Time Interval and the energy prices stated in PPAs plus the net import costs.

This total monthly actual Generation Energy Costs divided by the total actual energy delivered in each Time Interval during the month, will give the Actual Energy tariff for each Time Interval.

$$GE1_t^A = \frac{\sum_n^N \sum_{h=...}^{....} EG_{t;n,h}^A \times EP_{t;n}^A + IC_t}{\sum_n^N \sum_{h=...}^{....} EG_{t;n,h}^A + NI_t} \quad [MKW/MWh]$$

$$GE2_t^A = \frac{\sum_n^N \sum_{h=...}^{....} EG_{t;n,h}^A \times EP_{t;n}^A + IC_t}{\sum_n^N \sum_{h=...}^{....} EG_{t;n,h}^A + NI_t} \quad [MKW/MWh]$$

Where,

$GE1_t^A$: Actual Generation Energy tariff for peak Interval

$GE2_t^A$: Actual Generation Energy tariff for off-Time Interval

$EG_{t;n,h}^A$: Actual Energy Generated by Generator “n” during hours “h” of month “t”

$EP_{t;n}^A$: Actual Energy tariff according to the PPA, for Generator “n” of month “t”

NI_t : Net Imported Energy

IC_t : Net Imported Energy Cost

“A”: Actual

“N”: All Generators

“h”: Hours from – to

“t”: Actual month

4.6.3.2 Actual Transmission Tariff

The Actual Transmission tariff shall have two components:

- (a) Actual Transmission Capacity tariff
- (b) Actual Transmission Losses Factor

4.6.3.2.1 Actual Transmission Capacity Tariff

The SB Licensee shall determine the Actual Transmission tariff for the period by dividing the Transmission System Allowed Revenues by the Actual System Peak Demand (MW) registered by the SMO for the month, and divided by twelve, assuming the total Transmission Capacity Costs are evenly recovered in each month.

$$TR_t^A = \frac{1}{12} \frac{TSAR_y}{P_t^A} \left[\frac{MKW}{MW} \right]$$

Where,

TR_t^A : Actual Transmission Capacity tariff for month “t”

$TSAR_y$: Transmission System Allowed Revenues year “y”

P_t^A : Actual System Coincident Peak Demand for month “t”, metered at delivery points to the Distribution Licensee and Transmission Customers.

4.6.3.2.2 Actual Transmission Loss Factor

Actual transmission losses shall be considered as the forecast ones.

4.6.3.3 Actual SB business tariff

The SB Licensee shall determine the Actual SB Business Tariff for the period according to the following equation, by dividing the SB Business Allowed Revenue by the Actual Coincident System Peak Demand (MW).

$$BSS_t^A = \frac{1}{12} \times \frac{BSOB_y}{P_t^A} \left[\frac{MKW}{MW} \right]$$

Where,

BSS_t^A : Actual SB business tariff for month “t”

$BSOB_y$: SB Business Allowed Revenue for year “y”

P_t^A : Actual System Coincident Peak Demand for month “t”, metered at delivery points to the Distribution Licensee and Transmission Customers.

“t”: Actual month

4.6.3.4 Actual SMO tariff

The SB Licensee shall determine the Actual SMO Tariff for the period according to the following equation, by dividing the SMO Allowed Revenue by the Actual Coincident System Peak Demand (MW).

$$SMOS_t^A = \frac{1}{12} \times \frac{SMOB_y}{P_t^A} \left[\frac{MKW}{MW} \right]$$

Where,

$SMOS_t^A$: Actual SMO tariff for month “t”

$SMOB_y$: SMO Allowed Revenue for year “y”

P_t^A : Actual System Coincident Peak Demand for month “t”, metered at delivery points to the Distribution Licensee and Transmission Customers.

“t”: Actual month.

4.6.3.5 Resulting Actual Bulk Customer Service Tariffs

The two-parts, two- interval Actual Bulk Customer Service Tariffs shall be:

$$BST_t^A(C) = GC_t^A + TR_t^A + BSS_t^A + SMOS_t^A \quad [LKR/MW]$$

$$BST_t^A(E1) = (1 + TLF_{t,1}^F) \times GE1_t^A \quad [LKR/MWh]$$

$$BST_t^A(E2) = (1 + TLF_{t,2}^F) \times GE2_t^A \quad [LKR/MWh]$$

Where,

$BST_t^A(C)$: Actual Bulk Customer Service Tariff (Capacity) for month “t”

$BST_t^A(E1)$: Actual Bulk Customer Service Tariff (Energy in peak Interval 1) for month “t”

$BST_t^A(E2)$: Actual Bulk Customer Service Tariff (Energy in off-peak Interval 2) for month “t”

“t”: Actual month

4.6.3.6 Adjusting Components

The adjusting components defined in 3.6.2.5 shall be calculated as follows:

$$ADC_{y,p}(C) = \left[\left(\sum_{t=1}^6 P_{t,p-2}^A \times (BST_{y;p-2}^F(C) - BST_{y;t,p-2}^A(C)) \right) \times \frac{1}{P_{y,p}^F} \right] \times (1 + r_{p-1}) \quad [MKW/MW]$$

$$ADC_{y,p}(E1) = \left[\left(\sum_{t=1}^6 EG_{t,1,p-2}^A \times (BST_{y;p-2}^F(E1) - BST_{y;t,p-2}^A(E1)) \right) \times \frac{1}{EG_{y;1,p}^F} \right] \times (1 + r_{p-1}) \quad [MKW/MWh]$$

$$ADC_{y,p}(E2) = \left[\left(\sum_{t=1}^6 EG_{t,2,p-2}^A \times (BST_{y;p-2}^F(E2) - BST_{y;t,p-2}^A(E2)) \right) \times \frac{1}{EG_{y;2,p}^F} \right] \times (1 + r_{p-1}) \quad [MKW/MWh]$$

Where,

r_{p-1} : Average reference Interest rate of six month period “ $p-1$ ” to be defined by the Authority

$EG_{y,1,p}^F ; EG_{y,2,p}^F$: Forecast energy generated for “ y ” including net imports, six month period “ p ” in time interval 1 and 2.

All other parameters have been previously defined.

4.7 SETTLEMENT

4.7.1 Transactions with Generation Licensees

Generation Licensees shall send monthly invoices to the SB Licensee, discriminating Capacity Costs and Energy Costs, according to the provisions of the PPAs. The invoices shall indicate energy delivered to the Transmission System by the generating plants, hourly discriminated and based on measurements obtained through the metering system approved in compliance with the Market Rules, number of start-ups, hours of no load cost, hours of incremented heat rate, etc., according to official records accepted by the SMO.

On the payment due date, the SB Licensee shall proceed to make the payment out of the Bulk Customer Service Transactions Account according to the Bulk Customer Service Transactions and Stabilization Account Management Rules.

4.7.1.1 Transactions with the Distribution Licensee and Transmission Customers

The SB Licensee shall charge the Distribution Licensee and Transmission Customers, through an invoice or journal voucher as appropriate, based on the physical information and the forecast Bulk Customer Service Tariffs for the corresponding month no later than [] of each month.

The Distribution Licensee and Transmission Customers shall deposit the due amounts in the Bulk Customer Service Transactions and Stabilization Account no later than [] of the corresponding months. Upon crediting of the funds in the account, the Bulk Supplier shall remit the corresponding receipt.

4.7.1.2 Transactions with the Transmission Licensee

On the specific date established by the Authority, the Transmission Licensee shall charge the SB Licensee, through an invoice or journal voucher as appropriate, the due amount applicable for that month, consisting of one twelfth of the Transmission System Allowed Revenues for the year “ y ” ($TSAR_y$).

On the due date established by the Authority, the SB Licensee shall pay the due amount to the Transmission Licensee out of the Bulk Customer Service Transactions and Stabilization Account. Upon receiving the payments, the Transmission Licensee shall acknowledge receipt as appropriate.

4.7.1.3 Transaction with the SMO Licensee

On the specific date approved by the Authority, the SMO Licensee shall enter its Invoice or journal voucher with the due amount applicable for that month, consisting of one twelfth of the SMO Allowed Cost into the Bulk Customer Service Transactions Account.

On a specific date approved by the Authority, the SB Licensee shall transfer out of the Bulk Customer Service Transactions Account the corresponding amount to the Bulk Customer Service Operations Business Internal Account. Upon receiving the payments, the SMO Licensee shall remit the corresponding receipt.

5 CHAPTER IV: DISTRIBUTION AND CUSTOMER SERVICE TARIFFS

The Electricity Distribution and Customer Service License includes two main businesses for the Distribution Licensee:

- (a) Distribution Business;
- (b) Customer Service Business.

Distribution and Customer Service Tariff methodology is presented in this chapter. This section of the methodology defines:

- (a) type of tariff methodology;
- (b) the methodology to determine the distribution Allowed Revenue;
- (c) the methodology to determine the Customer Service Allowed Revenue;
- (d) the allocation methodology, that is how the distribution and Customer Service allowed Revenue is charged to the end-users users.

5.1 ALLOWED REVENUES DISTRIBUTION AND CUSTOMER SERVICE LICENSEE

5.1.1 Distribution business

5.1.1.1 Type of Tariff Methodology

The Distribution Allowed Revenue is the revenue that the Distribution and Customer Service Licensee is allowed to collect from the distribution users due to the use of the distribution system (wire business), excluding Allowed Charges (connection, reconnection, meter testing, etc) that shall be separately regulated by the Authority.

Distribution Allowed Revenue shall be calculated based on a Multi-Year Tariff System in which a cap on overall revenues shall be imposed during the tariff period. This cap will be adjusted for:

- (a) Changes in the number of distribution users and energy distributed as prescribed by the Revenue Control Formula;
- (b) Changes in the indices contained in the Revenue Control Formula.

The Tariff Period shall be four (4) years.

The Distribution and Customer Service Licensee shall make a tariff filing to the Regulator based on the methodology established in this section, in the following way:

- (a) before the beginning of the Tariff Period, the filing shall be complete, including approval of cost components and Revenue Control Formulae.

- (b) once a year after the initial filing, during the Tariff Period, a simplified filing with the purpose of demonstrating that the Revenue Control Formulae are properly applied.

5.1.1.2 Distribution Allowed Revenue

For the Distribution and Customer Service Licensee, the Distribution Allowed Revenue shall be calculated based on a forecast cash flow for firm for the tariff period, considering:

- (a) Initial Regulatory Asset Base (RAB) (the value of the assets belonging to the Licensee to provide the distribution service).
- (b) Rolling forward of the initial regulatory asset base, considering the forecast CAPEX for the period
- (c) Depreciation of existing non-depreciated assets
- (d) Return on capital
- (e) Efficient operational expenditure (OPEX)
- (f) Taxes

Calculation of Allowed Revenues shall take into account the non-regulated revenues that may exist.

5.1.1.3 Initial Regulatory Asset Base

To compute the assets and their valuation, the depreciated optimized replacement value shall be calculated based on the existing market conditions and the used and useful assets to provide the service fulfilling the quality level requested by the License and/or associated regulations issued by the Authority. The asset base shall exclude the value of the subsidized assets paid for through donations/grants or by customers. CAPEX that may have been incurred after closing the annual accounts shall not be considered until a new tariff is approved for the subsequent Tariff Period.

The asset base shall include the working capital required to run the business. Working capital needs shall be filed by the Licensee and approved by the Authority.

5.1.1.4 Depreciation Allowance

Depreciation shall be calculated on the straight line method and the depreciation rates shall be those that are currently used in the statutory accounts. Once an asset is fully depreciated, it shall be removed from the gross value of the assets. Depreciation allowance shall include the depreciation of the assets financed by third parties or granted on advantageous conditions.

5.1.1.5 Return on Assets

The calculation of the distribution Allowed Revenue shall include a return on invested capital. The Regulator shall define which methodology is used in each tariff review for defining the return on assets.

The rate of return on assets shall be calculated considering a weighted average of the cost of debt and equity employing the actual debt to asset ratio. The rate of return on assets shall be defined by the Regulator for each tariff period.

Assets financed by third parties, granted on advantageous conditions (non-debt associated or below-market interest rates), shall not be recognized with any return on assets.

5.1.1.6 Capital Expenditure (CAPEX) Allowance

RAB shall be determined for every year of the Tariff Period. The closing value (value at the end of one year) of the RAB is set equal to the opening value of the RAB plus the (CAPEX) during the year, minus regulatory depreciation during the year

The Forecast CAPEX program for the Distribution and Customer Service Licensee shall be the Distribution Development Plan approved by the Regulator for the next 4 years, and other capital investments not related to load, such as for refurbishments, information technology and vehicles..

5.1.1.7 Treatment of Differences between Forecast CAPEX and Actual CAPEX

Every year, the Regulator will conduct an ex-post analysis, checking what CAPEX has been developed and commissioned.

- (a) in case of underinvestment in relation to the forecast CAPEX included in the filing for the Transmission Allowed Revenue, the difference will be fully clawed-back including the time value of money, at a rate defined by the Authority, and transferred to customers through tariffs in the following Tariff Period provided that the cumulated effect on the allowed revenue calculated using the actual CAPEX be lower than 10%.
- (b) in case the actual CAPEX is higher than the forecast, the Regulator will request for all the relevant information to determine whether the additional investment has been prudent and efficient, and the difference will be allowed, including the time value of money at a rate defined by the Authority, and transferred to customers through tariffs in the following Tariff Period provided that the cumulated effect on the allowed revenue calculated using the actual CAPEX be lower than 10%.
- (c) In the cases the cumulated effect on the allowed revenue calculated using the actual CAPEX be higher than 10% in any sign, the deviation shall be fully clawed-back, and transferred to customers through tariffs in the following year of the Tariff Period.

5.1.1.8 Operating Expenditure (OPEX) and administrative costs

The OPEX to be included in the calculation of the distribution Allowed Revenue shall be the forecast OPEX for the tariff period by the Licensee. The Licensee should justify the forecast based on the forecast demand increase and the actual OPEX in the audited accounts of the last financial year. This OPEX shall include the expenditure on License requirements (levies, insurance, etc), the efficient cost of developing the Distribution and Customer service activity and the required administrative costs of the utility.

The OPEX component of the base allowed revenue will be adjusted at a rate defined by an Efficiency Factor (OPEXX) per year during the following years until the end of the tariff period. OPEXX (%) will be fixed by the Regulator before the start of the tariff period.

In successive Tariff Periods, the Regulator may revise the methodology for computing the efficient OPEX to be included in the distribution Allowed Revenue.

The Regulator shall recognize as OPEX for the distribution Licensee the existing levies and license fees (4.5% MAREP levy & 1% MERA levy) and future ones if any.

5.1.1.9 Taxes

All taxes applicable to the distribution business and imposed by the Tax code should be included by the Distribution and Customer service Licensee when filing the revenue requirement.

5.1.1.10 Adjustments

The adjustment mechanisms are intended to adjust the Distribution Allowed Revenue within the Tariff Period for inflation and exchange rate variations.

The adjustment shall be based on two indices: (i) Consumer Price Index (CPI) and (ii) foreign exchange (KWACHA:USD) rate. Based on the filed shares by the Distribution Licensee, the Regulator will approve the share to be employed in the revenue control formula.

Adjustments will be done on an annual basis based on the procedures described in Chapter V: Tariff filing and information disclosure.

5.1.1.11 Revenue Control Formula

Based on the previous definitions, the following control formula shall be applied to the Distribution Allowed Revenue:

$$AR_y = AR_{y-1} \times (1 - X) \times \left[a \times (1 + CPI) + (1 - a) \times \left(\frac{FX_y}{FX_{y-1}} \right) \right] \dots \\ \times [b \times (1 + Dcust) + c \times (1 + DkWh) + d] - Diff_y$$

where:

$$Diff_y = [AREV_{y-2} \times (1 - (AL_{y-2} - ACL_{y-2})) - AR_{y-2}] \times (1 + r_{y-1})$$

AR_y	Allowed base revenue in year “y” (MWK)
AR_{y-1}	Allowed base revenue in year “y-1” (MWK)
a	share of local costs in total costs of TL to be approved by the Regulator based on the filing by TL.
CPI_{y-1}	accumulated change Consumer Price Index (%) of year “y-1”
FX_y/FX_{y-1}	Average change in the Malawi KWACHA:USD exchange rate of year “y-1”
X	Efficiency factor (%) is the translation of OPEXX in terms of total revenues
$Diff_y$	Interim adjustment factor to compensate differences between actual distribution revenues and allowed distribution revenues (MWK) of the year “y-2”
$AREV_{y-2}$	Actual distribution revenue based on invoicing (MWK) of the year “y-2”
AR_{y-2}	Allowed revenue (MWK) of the year “y-2”
r_{y-1}	Average reference Interest rate of year “y-1” to be defined by the Authority
b	Allowed revenue coefficient to adjust for increases in the number of customers
$Dcust$	Percentage of customers in excess (negative if in deficit) of the level forecast at the time of setting tariff for the period
c	Allowed revenue coefficient for energy increase
d	1-b-c
$DkWh$	Percentage of energy distributed in excess (negative if in deficit) of the level forecast at the time of setting the tariff for the period

AL_{y-2}	Aggregated allowed level of energy losses for year “y-2” (%)
ACL_{y-2}	Aggregated actual level of energy losses for year “y-2” (%)

5.1.1.12 Allocation Criteria for Distribution Revenues

Regardless of a customer’s social or legal status and the purpose for which the electrical capacity and energy is used, the tariff structure shall reflect the costs that the user imposes on the Distribution System, according to his/her consumption characteristics and the voltage level at which the service is supplied.

Distribution revenue shall be allocated to each voltage level based on an estimation of the long run marginal cost at each voltage level. Overheads and other costs that cannot be directly allocated by voltage level, shall be allocated to each voltage level in proportion to the allocation of direct costs per voltage level.

At each voltage level, costs shall be allocated between customer categories based on the share of the peak demand of each customer category at that voltage level in the sum of peak demands across all categories at that voltage level.

Based on these criteria, allocated distribution revenue in each customer category shall be converted into a tariff by dividing by the non-coincident peak demand of the customer category. In case of one-part tariff, the distribution tariff shall be converted into an energy distribution tariff considering the annual load factor calculated on a representative average load profile of the customer category. In both cases, the calculation should ensure that the level of allowed losses and no more than it is considered when calculating the distribution tariff.

This methodology requires the Distribution and Customer Service Licensee to produce and make public proper representative load profiles for each customer group. Any Load Profile shall be derived from statistically representative samples, following guidelines issued by the Authority

The Regulator may establish a reactive power compensation scheme and a reactive power tariff, if deemed necessary.

5.1.1.13 Filing

Tariffs and required information, shall be submitted to the Regulator by the Transmission Licensee for approval according to the filing procedure established by the Regulator in accordance with provisions in ChapTer V: Tariff filing and information disclosure.

5.1.2 Customer Service Business

The Customer Service business includes:

- (a) Customers Service allowed revenue, and ;
- (b) The “Pass-through” of the bulk Customer Service Tariffs.

5.1.2.1 Customer service allowed revenue

Customer Service allowed revenue includes all the operational costs related to the commercial cycle (meter reading, invoicing and collection), routine meter testing cost and an allowance for bad debt if the Regulator deems such allowance is appropriate.

The Customer Service tariff shall be calculated based on a Multi-Year Tariff System in which a limitation (“a cap”) on average tariff shall be imposed during the Tariff Period.

The Tariff Period shall be four (4) years.

Yearly, the Allowed tariff shall be adjusted considering the CPI.

The Distribution and Customer Service Licensee shall make a tariff filing to the Regulator based on the methodology established in this section before the beginning of the Tariff Period. Additionally, once a year after the initial filing, during the Tariff Period, the Distribution and Customer Service Licensee shall make a simplified filing for the purpose of adjusting the tariff based on the CPI.

The allowed tariff will include a forecast of the efficient operational expenditure required to perform the operations related to the commercial cycle and related costs. The Licensee should justify the forecast based on the forecast customer increase and the actual OPEX stated in audited accounts of the last financial year. Existing assets and capital expenditure that may be needed should be considered when calculating the allowed revenue for the distribution business. The tariff shall be calculated by dividing the total expected operational cost (including a provision for bad debt if deemed necessary) for the period by the expected total number of customers.

The Distribution and Customer Service Licensee may file for a bad debt allowance. A bad debt allowance filing should be developed discriminating the different types of customer. The Regulator may define the total bad debt allowance considering the Licensee’s customer portfolio and the potential efficiency gains in the collection activity.

The Regulator shall set a maximum percentage to be incorporated in tariff determination as bad debt.

The Regulator may apply different Customer Service tariffs to end-users according to their size, location or type. However, in each year of the Tariff Period, the retail service tariff should be the one calculated by the following control formula:

$$RSPC_y = RSPC_{y-1} \times (1 + CPI)$$

where:

$RSPC_y$	Allowed Customer service tariff in year “y” (MWK/customer)
$RSPC_{y-1}$	Allowed Customer service tariff in year “y-1” (MWK/customer)
CPI_y	Accumulated change in Consumer Price Index (%) for the year “y-1”

Customer Service tariffs for end-users shall be filed once a year by the Distribution and Customer Service Licensee based on this procedure. The Regulator will automatically approve them if the calculation has properly followed the criteria.

5.1.2.2 Bulk Customer Service “Pass-through” Tariff

End-users customers shall pay the Bulk Customer Service “Pass-through” Tariffs, which are based on the Bulk Customer Service Tariffs defined in 4.6 and adapted in order to be applied to end-users.

Bulk Customer Service “Pass-through” Tariffs shall consist of two parts:

- (a) capacity charge;

(b) energy charge. The energy part shall be divided into two Time Intervals as defined in 4.6.

Bulk Customer Service “Pass-through” Tariffs shall be differentiated by the voltage levels that the Regulator defines, following the guidelines defined in 5.2.

For each voltage level, a Loss Factor shall be applied. This loss factor acts as a cap on the level of total losses that the Regulator will allow the Distribution and Customer Service Licensee to be passed through to customers in each voltage level. The Loss Factor for each voltage level shall be filed by the Distribution and Customer Service Licensee at the beginning of the Tariff Period, for every year during the Tariff Period, when filing for the Distribution Allowed Revenue. The Licensee shall provide evidence to the Regulator that the proposed Loss Factor is based both on actual levels and the implementation of a prudent loss reduction program. The Regulator may approve declining Loss Factors for every year during the Tariff Period. Loss Factors shall be calculated to comply with acceptable business practices to ensure that the impact of losses due to inefficiency and theft is not averaged out and burdened on end-users tariffs

The Bulk Customer Service “Pass-through” Tariffs that the Licensee is able to charge to retail customers is constrained by the following formula:

$$PTP_{p,i,v} = BST_p^F(E_i) \times (1 + AL_{p,v})$$
$$CP_{p,v} = BST_p^F(C) \times (1 + CAL_{p,v})$$

where:

$PTP_{p,i,v}$	Allowed energy Pass-through tariff (MWK/kWh) for a six-month period “p” in hourly interval “i” at voltage level “v”.
$AL_{p,v}$	Allowed (energy) loss factor (%) at voltage level “v” for the six-month period “p”
$CP_{p,v}$	Allowed capacity Pass-through Tariff (MWK/kVA-month) for the six month period “p”
$CAL_{p,v}$	Allowed (capacity) loss factor (%) for six month period “p” for voltage level “v”

All the other parameters are defined in 4.6.

5.1.2.3 Criteria for Applying Bulk Customer Service “Pass-Through” Tariff to Retail Customers

The Bulk Customer Service “Pass-through” Tariffs shall be applied to end-users as follows:

- Bulk Customer Service “Pass-through” Energy Tariffs (PTP) shall be directly applied in case of end-use customers billed on Time of Use (TOU) rates. In case end-use customers billed on non-TOU rates, the shares of consumption in each Interval based on a representative average load profile of the category shall be taken into account.
- Bulk Customer Service “Pass-through” Capacity Tariff (CP) for end-use customers on two-part tariffs shall be based on the coincident peak of the end-use customer in relation to the system peak. In case of customers on one-part tariffs, the Bulk Customer Service “pass-through” Capacity Tariff (CP) shall be based on the coincident peak of the end-use customer in relation to the system peak and converted into an energy tariff considering the annual

load factor calculated on a representative average load profile of the category of such end-use customers.

The load profiles mentioned above shall be the same as those employed in 5.1.1.12.

Bulk Sup Customer Service ply “Pass-through” Tariffs for end-users shall be filed once every six months by the Distribution and Customer Service Licensee based on this procedure and the approved forecast Bulk Customer Service Tariffs. The Regulator will automatically approve them if the calculation has properly followed the criteria.

5.2 CRITERIA FOR DEFINING THE TARIFF STRUCTURE

The customer categories shall be distinguished by the voltage levels defined by the Authority.

Tariffs for each customer category shall be split into (i) approved Bulk Customer Service “Pass-through” tariff, (ii) approved distribution tariff, (iii) approved Customer Service tariff, and (iv) any approved special levies. The Regulator requires the Distribution and Customer Service Licensee to separately identify these components in customer bills. Any explicit subsidies that are applied to Distribution and Retail Tariffs, or passed through the Single Buyer, shall be identified in the tariff structure and in customer bills.

Where technically and economically feasible, the structure of end-use customer tariffs shall be in two-parts, with capacity and energy charges.

TOU tariffs shall be applied to end-use customers connected to medium voltage and low voltage in case of 3-phase supply. TOU tariffs shall be applied to customers connected to low voltage in case of 1-phase supply where it is technically and economically efficient to install TOU meters. In case where TOU rates are optional, Customers have the right to receive the service at TOU rates if such a customer pays for the new meter, either up-front or through rental fees.

All the tariffs and charges shall be set in Malawian Kwacha.

Every four years, six months before the Distribution and Customer Service Licensee is required to file for a new Distribution Allowed Revenue, the Regulator will publish the detailed criteria for the definition of the tariff schedule to be applied in the next Tariff Period, including the definition of customer categories, structure of charges for each category, penetration of TOU rates, etc.

6 CHAPTER V: TARIFF FILING AND INFORMATION DISCLOSURE

The tariff filing shall be in such form and in such manner as has been specified by the Regulator in these regulations and also as per the provisions of the conduct of business regulations.

The licensee shall also submit the tariff filing in electronic format to the Authority.

The licensee shall furnish to the Authority, such additional information, particulars and documents as the Regulator may require from time to time after such filing of revenue calculations and tariff proposals.

The licensee shall publish, for the information of the public, the contents of the application in an abridged form in such manner as the Regulator may direct and shall host the complete copy of the filing on its website.

The Transmission, SMO and Distribution and customer service Licensee shall be allowed to apply for an extraordinary review in case the accumulated change in the indexation formula during any year surpasses +/-15%. Such applications for an extraordinary review shall be made before 30th December each year, for immediate review and approval by the Regulator. Any application for review after this date shall be considered for implementation on 1st of July in the succeeding year

6.1 SMO, SB, TRANSMISSION AND DISTRIBUTION AND CUSTOMER SERVICE LICENSES FILINGS

6.1.1 Beginning of the Tariff Period - Business Plan Filings

The licensees shall file, for the Regulator's approval, on or before 30th of December of the year, preceding the first year of the control period, or any other date as may be directed by the Regulator, a business plan. The business plan shall be for the entire control period and shall, interalia, contain: -

(c) for Distribution and Customer Service licensee:

- I. sales/demand forecast for each customer category and sub-categories for each year of the control period;
- II. the licensee proposal for sale of electricity for the consumers pertaining to Customer Service business, which shall include tariffs for each consumer category, slab-wise and voltage-wise. The proposed tariff may also be based on energy charges, demand charges, minimum charges, etc along with the tariff rationalization measures;
- III. distribution loss reduction trajectory for each year of the control period;
- IV. collection efficiency for each year of the control period;
- V. power procurement plan based on the sales forecast and distribution loss trajectory for each year of the business plan period; the power procurement plan should also include energy efficiency and demand side management measures;
- VI. Capital investment plan: This shall take into account the sales/demand forecast, power procurement plan, distribution loss trajectory, targets for quality of supply, etc. The capital investment plan shall be consistent with the perspective of the transmission development plan, and shall include the corresponding capitalization schedule and financing plan. The Regulator shall approve capital investment plan of the licensee for the control period commensurate with load growth, distribution loss reduction and quality improvement proposed in the business plan;
- VII. the appropriate capital structure of each scheme proposed and cost of financing (interest on debt and return on equity), terms of the existing loan agreements, etc;
- VIII. the Operation and Maintenance (O&M) costs estimated for the base year and two years prior to the base year with complete details, together with the forecast for each year of the control period based on the proposed efficiency in operating costs, norms for O&M cost allowance including indexation and other appropriate mechanism;

- IX. details of depreciation based on the fair life of the asset and capitalization schedules for each year of the control period;
- X. a set of targets proposed for other items such as collection efficiency, bad debts, working capital, quality of supply targets, etc. The targets shall be consistent with the capital investment plan proposed by the licensee;
- XI. proposals for non-tariff income, with item-wise description and details;
- XII. proposals in respect of income from other businesses like consultancy services, convergence, training facilities, etc;
- XIII. other information: This shall include any other details considered appropriate by the distribution licensee for consideration during determination of tariff; and
- XIV. the filings in addition to the control period, shall also contain the data for the cost and revenue parameters for the last two years.

(d) for transmission licensee:

- I. energy forecast for each year of the control period;
- II. transmission loss reduction trajectory for each year of the control period;
- III. power procurement plan based on the demand forecast and transmission loss trajectory for each year of the business plan period; the power procurement plan should also include energy efficiency and demand side management measures;
- IV. Capital investment plan: This shall take into account the demand forecast, power procurement plan, loss trajectory, targets for quality of supply, etc. The capital investment plan shall be consistent with the perspective plan drawn by the Transmission development plan, and shall include the corresponding capitalization schedule and financing plan. The Regulator shall approve capital investment plan of the licensees for the control period commensurate with load growth, distribution loss reduction and quality improvement proposed in the business plan;
- V. the appropriate capital structure of each scheme proposed and cost of financing (interest on debt and return on equity), terms of the existing loan agreements, etc;
- VI. the Operation and Maintenance (O&M) costs estimated for the base year and two years prior to the base year with complete details, together with the forecast for each year of the control period based on the proposed efficiency in operating costs, norms for O&M cost allowance including indexation and other appropriate mechanism;
- VII. details of depreciation based on the fair life of the asset and capitalisation schedules for each year of the control period;
- VIII. a set of targets proposed for other items such as working capital, quality of supply targets, etc. The targets shall be consistent with the capital investment plan proposed by the licensee;
- IX. proposals for non-tariff income, with item-wise description and details;
- X. proposals in respect of income from other businesses like consultancy services, convergence, training facilities, etc;

- XI. other information: This shall include any other details considered appropriate by the distribution licensee for consideration during determination of tariff; and
- XII. the filings in addition to the control period, shall also contain the data for the cost and revenue parameters for the last two years.

(e) for SMO licensee:

- I. Capital investment plan: This shall take into account the demand forecast, power procurement plan, loss trajectory, targets for quality of supply, etc. The Regulator shall approve capital investment plan of the licensees for the control period commensurate with load growth, distribution loss reduction and quality improvement proposed in the business plan;
- II. the appropriate capital structure of each scheme proposed and cost of financing (interest on debt and return on equity), terms of the existing loan agreements, etc;
- III. the Operation and Maintenance (O&M) costs estimated for the base year and two years prior to the base year with complete details, together with the forecast for each year of the control period based on the proposed efficiency in operating costs, norms for O&M cost allowance including indexation and other appropriate mechanism;
- IV. details of depreciation based on the fair life of the asset and capitalization schedules for each year of the control period;
- V. a set of targets proposed for other items such as working capital, quality of supply targets, etc. The targets shall be consistent with the capital investment plan proposed by the licensee;
- VI. other information: This shall include any other details considered appropriate by the distribution licensee for consideration during determination of tariff; and
- VII. the filings in addition to the control period, shall also contain the data for the cost and revenue parameters for the last two years.

(f) for SB licensee:

- I. sales/demand forecast for each year of the control period;
- II. capital investment plan: This shall take into account the demand forecast, power procurement plan, loss trajectory, targets for quality of supply, etc. The Regulator shall approve capital investment plan of the licensees for the control period commensurate with load growth, distribution loss reduction and quality improvement proposed in the business plan;
- III. the appropriate capital structure of each scheme proposed and cost of financing (interest on debt and return on equity), terms of the existing loan agreements, etc;
- IV. the Operation and Maintenance (O&M) costs estimated for the base year and two years prior to the base year with complete details, together with the forecast for each year of the control period based on the proposed efficiency in operating costs, norms for O&M cost allowance including indexation and other appropriate mechanism;

- V. details of depreciation based on the fair life of the asset and capitalisation schedules for each year of the control period;
- VI. a set of targets proposed for other items such as working capital, quality of supply targets, etc. The targets shall be consistent with the capital investment plan proposed by the licensee;
- VII. other information: This shall include any other details considered appropriate by the distribution licensee for consideration during determination of tariff; and
- VIII. the filings in addition to the control period, shall also contain the data for the cost and revenue parameters for the last two years.

The Regulator shall request any other information deemed convenient for the tariff determination.

Based on the licensees' filings the Regulator shall within 150 days of the receipt of the application, complete in all respects, and after considering all suggestions and objections from public and other stakeholders:

- (a) issue a tariff order with such modifications and/or such conditions, as may be deemed fair and appropriate, containing inter alia targets for controllable items and:
 - I. The final percentage tariff change to be implemented with or without conditions.
 - II. The effective date of implementation
 - III. The date for official communication of the approved tariff to the Licensee and to the ministry responsible

The Regulator shall held a public consultation to guarantee the participation of any interested stakeholder. This is a consultation process where representative from stakeholder institutions who are not represented in the Board of the Authority are given a chance to comment and give their views on the proposed tariff change and the justification process through a participatory process. And the representatives of the Utility Company are given an opportunity to present their tariff proposal and justify\defend it. This process shall be regulated by the Authority

6.1.2 Annual Reviews during the Tariff Period

The licensee shall file an application for approval of each tariff for each year of the control period, not later than the 30th of April of the control period or such other date as may be directed by the Authority.

The tariff shall be determined for each year of the control period following the revenue formula included in 4.3, 5.1, 4.4, and 4.5:

- (a) The filings for transmission tariff shall contain the value of the parameters included in revenue cap formula in Allowed Revenues for Transmission Licensee 4.3.
- (b) The filings for Distribution and Customer Service tariff shall contain the value of the parameters included in revenue cap formula in 5.1.

- (c) The filings for SMO tariff shall contain the value of the parameters included in revenue cap formula in 4.4.
- (d) The filings for SB tariff shall contain the value of the parameters included in revenue cap formula in 4.5.

Annual reviews shall be automatically applied the first day of the coming Regulatory Year unless the Regulator claim that the proposed review by the Licensee is not properly defined.

No public consultation process shall be developed in the cases of annual reviews.

6.1.3 Review at the end of the Control Period

Towards the end of the tariff period, the Regulator shall review if the implementation of the principles laid down in these regulations have achieved their intended objectives. While doing this, the Regulator shall take into account, among other things, the industry structure, sector requirements, consumer and other stakeholder expectations and the licensee's requirements at that point in time. Depending on the requirements of the sector to meet the objects of the Act, the Regulator may revise the principles for the second control period.

The end of the first control period shall be the beginning of the second control period and the licensee shall follow the same procedure, unless required otherwise by the Authority. The Regulator shall analyze the performance of the licensee with respect to the targets set out at the beginning of the first control period and based on the actual performance, expected efficiency improvements and other factors prevalent, determine the initial values for the next control period.

6.2 BULK SUPPLY TARIFF WITHIN-YEAR ADJUSTMENTS

SB Licensee shall file the 30th November and 30th May of each year for an adjustment of the bulk supply tariffs, either in case of increase or decrease of the tariff. The SB Licensee shall provide all relevant evidence to justify the filing in due time and form according to the templates and procedures to be issued by the Authority.

Bulk Supply tariff shall be automatically applied the first day of July or January each year unless the Regulator claim that the proposed bulk supply tariffs by the Licensee is not properly defined.

6.3 END-USERS TARIFF ADJUSTMENTS

End User tariffs shall be calculated by the Regulator based on a transparent model. The Model to calculate the tariffs shall be approved and remain public.

Every six months, the Regulator shall collect and verify the Bulk supply tariffs and distribution tariffs. Once the information is collected, the Regulator shall calculate the updated end user tariffs.

End-user tariffs shall only be updated when the cumulated variation on the average end-users tariff is higher than 5% or in the case of complete depletion of the Bulk Customer Service Transactions and stabilization Account.

A public hearing shall be conducted in the case of a tariff increase.

End user tariffs and any reasoning deemed necessary by the Regulator shall be published in the Official Gazette and the Authority's web page.

7 CHAPTER VI: VALIDITY AND IMPLEMENTATION ARRANGEMENTS

This methodology is in force since inception by the Authority. However, the Regulator acknowledges that some conditions stated in this methodology cannot be implemented immediately and therefore transitional provisions are provided as part of this methodology. The Regulator shall decide until when each of the transition provisions stated in Chapter VII: Transition provisions is valid.

This methodology is valid until the Ministry decides to allow Eligible customers to procure power directly from IPPS as stated in Condition (23.3) of the Electricity Act. The Regulator shall adapt this methodology accordingly when corresponding.

No later than March 2016, [] Generation Licensee shall present to the Regulator the opening Balance sheet audited by a recognized third party.

[] Generation Licensee shall file for the generation tariffs to be included in the PPAs no later than April 2016. The filing shall follow the principles stated in this methodology and all relevant information shall be provided in due time and form as requested by the Authority. The Regulator shall approve the PPAs between [] generation License and SB License no later than June 2016.

ESCOM Ltd. shall submit to the Regulator for evaluation and an accounting unbundling plan no later than June 2016. This Plan shall include allocation of assets and liabilities as well as allocation of staff and overhead costs of ESCOM Ltd. The Regulator shall accept proxy mechanisms for the allocation of ESCOM Ltd overhead cost provided the allocation does not implied cross-subsidization of any license.

No later than March 2017, the SMO Licensee, the SB licensee, the Transmission Licensee and the distribution Licensee shall present to the Regulator opening balance sheets. ESCOM Ltd. as holder of the four licenses shall provide evidence that the four balance sheets are consistent with the audited ESCOM balance sheets. The Regulator has the right to audit the financial accounts of each Licensee when deemed necessary.

No later than June 2016, the SMO Licensee shall place in operation a commercial metering system that allows the proper and transparent settlement of transactions between the SB Licensee and all other Licenses.

The first tariff setting for SMO, SB, transmission and Distribution and Customer Service Licensees shall be Jan 2018.

Not later than December 2017, the Regulator will establish a Road Map for Tariff Reforms and Rebalancing, clarifying the cross-subsidies that will be allowed in the first tariff period under this methodology.

No later than Dec 2017, the Distribution and Customer Service licensee shall submit to the Regulator the results of an end-user load survey that allows to define cost-reflected tariffs for end users based on the principles stated in this methodology.

No later than June 2017, ESCOM Ltd shall adjust its internal procedures and accountings system to allow the inter-licenses transactions for the four licenses under ESCOM Ltd. ownership.

8 CHAPTER VII: TRANSITION PROVISIONS

The component Diff in distribution revenue control formula in 5.1.1.11 is set at zero for the entire first Tariff Period of implementation of this Tariff Methodology.

The Regulator shall allow a maximum of 5% of the bad debt provision to be incorporated in customer service tariff determination as bad debt during the entire first tariff period.

The implied total distribution losses used in the calculation of the loss factors in 5.1.1.11 shall not exceed 12% during the entire first tariff period. The Distribution Licensee shall develop studies to provide reliable to the Regulator about the composition of the losses, discriminating technical and non-technical losses into technical.

For the first Tariff Period of implementation of this Tariff Methodology in the cases of the SMO, SB, Transmission and Distribution and Customer Service Licenses, the X-factor component (X) of the formulae defined in sections 4.3.2.9 and 5.1.1.11 of the methodology is set at zero (0). Not later than December 2020, the Regulator will issue a methodology for setting the X-factor for the second Implementation Period.

The parameters “b” and “c” of the formula defined in section 5.1.1.11 are set at 40% for the first Implementation Period of this methodology. The Regulator may change these parameters for the second Implementation Period.

For the first Implementation Period, the parameter “a” of the formula defined in 4.3.2.9 of this methodology is set at 50%. Similarly, the parameter “a” of the formula defined in 5.1.1.11 of this methodology is set at 60%. The Regulator will issue a methodology for setting the parameter “a”, both for the Transmission and Distribution activity no later than December 2013 for the licensees to file for these parameters during the filing process.

For the first implementation period, in the estimation of the parameters CPI and FX the subscript “y-1” should be read as end-June(y-2) to end-June(y-1)

The parameter “r” of this methodology employed in sections 5.1.1.11 is the 1-year Malawi Inter Bank Interest Rate (MIBR) published by the Reserve Bank of Malawi. Similarly, the parameter “r” of this methodology employed in section 4.6.3.5 is the 6-month MIBR published by the Reserve Bank of Malawi.

Extraordinarily, the Regulator will accept non-audited accounts as the basis for the first filing process of the SMO, SB, Transmission and Distribution and Customer Service Licensees. The SMO, SB, Transmission and Distribution and Customer Service Licensees shall submit to the Regulator non-audited final account for the period Jan 2017 – June 2017 no later than September 2017.

The SB Licensee in cooperation the Transmission Licensee shall present to the Regulator no later than December 2017, the investment program for 2018-2022 discriminating generation and transmission assets, the different types of investment required and providing proper justification for them. Similarly, the transmission and Customer Service Licensee shall present the distribution investment program for 2018 – 2002.

The spirit of this methodology is that end-user tariffs are essentially additive. The filing by the Distribution and customer service licensee shall reflect the changes in the required revenues of the rest of the licenses. In case the Regulator is not able to approve a tariff increase for any reason excluding improper filing by the Licensee, the Bulk Customer Service Transactions and Stabilization Account shall be used to ensure the required revenues of the Licensees. The Government of Malawi shall ensure that the Bulk Customer Service Transactions and Stabilization Account shall have in any moment the required funds to offset the claims by the Licensees and therefore act as last resort to guarantee the supply of the required funds in case of a total depletion of the Account.

[] Generation Licensee shall submit to the Regulator for its approval a proposal for the PPA in the case of Kachipira II. The Regulator shall approve the tariff to be included in this PPA ensuring that the existing commitments with the Government of Malawi are fulfilled.

In case other licenses are granted for the transmission activity, the principles and methodologies prescribed in 4.3 for the calculation of the Transmission Allowed Revenue shall be applied.