



# **TARIFFS DETERMINATION FOR 2017**

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## 1. Introduction

The National Water of Supply and Sanitation Council (NWASCO) has a function to develop guidelines for the setting of tariffs for the provision of water supply and sanitation services. Guidelines for setting of tariffs have been developed with the following objectives:

- I. **Financial sustainability** –ensuring that the commercial utility (CU) companies are provided with sufficient revenues to cover justified costs associated with water supply and sanitation service provision.
- II. **Affordability**- ensuring that a minimum quantity of water is accessible at an affordable price. The first 6m<sup>3</sup> are considered as lifeline hence they are priced below or at the cost of service provision to ensure that they are affordable to all. The subsequent volumes are used to subsidise the 6m<sup>3</sup>.
- III. **Consumer Protection and Fair pricing**- ensuring that there is value for money for the consumers.

NWASCO endeavours to ensure that the tariff setting process is as transparent and as predictable as possible to both the Commercial utility companies and the consumers.

A cost plus tariff setting approach is used in arriving at the allowed costs and subsequently revenues for the commercial utility companies. This implies that historical costs are used to forecast future costs for the period for which the tariff proposal covers. The aim of the tariff adjustment is to equate the costs and the revenues. In doing both the cost side and the revenue side are analysed. The priority is given to cover O&M, depreciation, interest repayments (and any other finance charges) and eventually return on investment. All these costs have to be justifiable and as prudent as possible in line with prevailing economic factors such as inflation and exchange rate. While on the revenue side, the factors to consider are the volumes of water sold and the number of customers. The cost plus tariff setting approach implies that each CU will have different tariffs depending their costs.

Tariff are approved for multiple years of up to three or a single year depending on both NWASCO's and the CU's judgement of the stability of the economy in general and in particular the dynamics within the CU service area (i.e infrastructure development projects, affordability and ability to pay studies etc.)

## 2. Applications for Tariff Review

In 2017, NWASCO received two applications for comprehensive tariff review from Southern and Eastern WSCs. The last comprehensive tariff review for the two CUs was in 2014 for the period 2015-2017.

The factors advanced by each of the CUs in proposing the upward tariff adjustment were as follows:

### ***Eastern WSC***

- General Inflation which was pegged at an average of 10%
- Interest Rates were projected to be at an average of 30%
- The nominal increase in electricity tariffs was projected to be 25% for each of the years 2018-2020.
- The Labour cost were projected to grow by 20% in 2018 with salary increments accounting for 10% and the remaining 10% attributed to the costs associated with recruitment of additional staff to fill the vacant positions. Thereafter, labour costs were projected to increase only by 10% per annum.

The CU projected the current cost of service provision per cubic meter at **K7.99** and the selling price for a cubic meter at **K5.97**.

Further, the CU indicated that they would become more efficient in their operations by reducing Non-Revenue Water by **5%** per annual and maintain collection efficiency above the benchmark of 85%. With resources generated from these efficiency gains, EWSC projected a business growth of about **10%** per annum.

### ***Southern WSC***

For SWSC, the tariff application was made in consideration of the following factors:

- General rise in the costs of inputs which was considered to have eroded the prevailing tariffs. The increase in input costs was attributed to the increase in electricity, fuel, maintenance materials and labour. On average, the cost of providing a cubic meter of water was estimated at **K4.7** while the average real price for a cubic meter was **K4.5**.
- The inflation rate was projected at average **7%** throughout the tariff period
- Interest rates were projected at an average of **37%** per annual

Additionally, the CU anticipated an increase in the population in its service areas (urbanisation) particularly Choma hence the need for additional resources to extend services. The CU also noted resources were required to maintain the dilapidated infrastructure in most Districts. The CU further stated the need to retain skilled staff and improve service delivery as defence for an upward tariff adjustment.

With the forgoing, EWSC requested for upwards tariff adjustments of **54%**, **30%** and **30%** while SWSC requested an upwards adjustment of **6%**, **5.7%** and **4.1%** for the period 2018, 2019 and 2020 respectively.

With the its tariff application, EWSC committed to increasing service coverage from 85% to 95% over the three years period, increase hours of supply to an average of 22 and generally adhere to Service level guarantees signed with NWASCO.

SWSC on the other hand pledged to extend water supply and sanitation services to unserved areas within its jurisdiction and also increase hours of supply in poorly supplied areas of Choma, Siavonga, Livingstone and Monze.

The proposed cost coverages were **91%**, **88.5%** and **90.6%** for EWSC and **111%**, **121%** and **128%** for SWSC for the years 2018, 2019 and 2020 respectively.

### **3. Analysis of the Tariff Proposals**

The two tariff proposals were analysed by NWASCO in line with the provisions in the tariff guidelines. The following steps were followed:

#### **Step 1: Performance on Tariff Conditions**

CUs were issued with tariff conditions in 2017, of which they were required to achieve a performance score of at least 75% to qualify for consideration of a tariff review.

Both CUs met the minimum requirement with scores of **74.9%** and **75%** for EWSC and SWSC respectively.

## Step 2: Cost Analysis

An analysis of the base year (2017) costs was conducted to establish their prudence and ensure they were justifiable. Reports such as management accounts, inspections and other relevant documents were used to support the cost analysis. Salient issues arising from this analysis were as follows:

For EWSC, the following adjustments were made to the costs:

- The base year of 2017 was used to forecast all costs for the subsequent periods (2018-2020) for consistency as opposed to switching between 2016 and 2017, depending on the values.
- The debt collection fees were disallowed as these were catered for within the 15% allowable loss already incorporated in the tariff computation. It is worth noting that the cost coverage is calculated at 85% collection to allow for normal loss.
- The provisions/costs for retirement benefits were reduced by **50%** as it was understood that these were meant to cater for only those staff that would be due for retirement in each particular year as opposed to providing for all staff.
- Inflation was projected at 10% per annum throughout the period.
- Electricity costs were projected to increase by **15%** per annum throughout the tariff period as indicated by ERB as opposed to the **25%** per annum proposed by the CU.
- Fuel costs were projected to increase by **10%** in the first year and the **7%** in each of the remaining years as opposed to the proposed **25%** per annum

For SWSC the following adjustments were made to the costs:

- Retirement benefits were reduced to K2.2 million (from K4.4 million) for the base year 2017 in line with what was reported in the Management accounts.
- Electricity costs were projected to increase by **15%** per annum as indicated by ERB as opposed to the **5.7%** in the first year and **4.1%** for each of the remaining two years proposed by the CU.
- Fuel cost were projected to increase by **10%** per annum (as opposed to **5%**) in the first year and then **7%** (as opposed to **4%**) for the subsequent years for both water and sewerage.

## Step 2: Revenue Analysis

For Eastern WSC, the projected increase of the number of customers of **10%** per annum was considered to be over ambitious. The growth was reduced to **2%** for the first year and **4%** per annum for the remaining two years. The volumes of water sold were also adjusted accordingly.

For Southern WSC, the volume of water sold for unmetered customers was over understated, hence it was increased in order to harmonise with the number of unmetered customers throughout the period.

With these adjustments for the costs, the total disallowances/allowances for both EWSC and SWSC were as indicated below:

**Table 1: Cost Analysis**

	2018	2019	2020
<b>Eastern WSC</b>			
Proposed Total Costs(K)	48,665,320	54,973,942	61,769,158
Total NWASCO Adjustments(K)	15,775,302	16,135,703	18,154,933
Adjusted Total Costs(K)	32,890,018	38,838,238	43,614,226
Approved Total Cost Coverage at 85% collection	<b>86.3%</b>	<b>89.4%</b>	<b>98.9%</b>
<b>Southern WSC</b>			
Proposed Total Costs(K)	70,890,865	73,669,012	77,63,0871
Total NWASCO Allowances (K)	1,176,36	1,321,180	1,375,349
Adjusted Total Costs(K)	72,157,232	74,990,192	79,006,220
Approved Total Cost Coverage at 85% collection	<b>112.8%</b>	<b>126.2%</b>	<b>138.5%</b>

#### 4. Tariff Approves

With the forgoing analysis, tariff adjustments for EWSC and SWSC were approved for the period 2018 to 2020.

##### Eastern WSC

Approved average tariff increases for Eastern WSC were as follows:

**Table 2 Approved Tariff adjustments-Eastern WSC (All metered)**

Customer category	% Increase		
	2018	2019	2020
Domestic	11	16	5
Non Domestic	14.7	9.3	5
Kiosks	0	0	0
<b>Average approved tariff Increase</b>	<b>12.9</b>	<b>12.7</b>	<b>5</b>
<b>Proposed tariff increase</b>	<b>54</b>	<b>30</b>	<b>30</b>

#### 4.1 Impact of the Tariff on the domestic customers-Eastern WSC

Consumptions of 6, 30 and 60m<sup>3</sup> per month have been assumed and the calculations take into account the 20% sewerage charge and the fixed meter charge of K10. On average, a domestic metered customer's bill increased by 11%, 15% in 2018, and 4.5% for 2018, 2019 and 2020 respectively.

**Table 3: Impact of the Tariff on the domestic customers-EWSC**

Customer Category	Average monthly Consumption (M <sup>3</sup> )	Current Bill (K) 2017	Bill (K) 2018	Bill(K) 2019	Bill (K) 2020	% change 2018	% change 2019	% change 2020
Low cost	6	41.54	46.27	53.52	55.70	11.4%	15.7%	4.1%

<b>Medium cost</b>	30	274.65	302.69	348.41	365.33	10.2%	15.1%	4.9%
<b>High cost</b>	60	644.73	709.78	816.56	856.89	10.1%	15.0%	4.9%

#### 4.1.1 Tariff conditions for 2018-Eastern WSC

Eastern WSC was granted the 2018 tariffs within which period it should attain at least 75% of the conditions shown in Table 4:

**Table 4: Tariff Conditions**

#	Conditions	Weight
1	Ensure that actual costs do not exceed an adverse variance of 10% of the approved cost structure of <b>K32,383,737</b> for 2018	10
2	Achieve an average collection efficiency of at least 85% by <b>31<sup>st</sup> August 2018</b>	20
3	Achieve O&M cost coverage rate of at least <b>85.5%</b> at 85% collection efficiency by <b>31<sup>st</sup> August 2018</b>	20
4	Increase number of connections by 900 from the current by <b>31<sup>st</sup> August 2018</b>	10
5	Maintain 100% metering throughout the tariff period	10
6	Maintain water quality compliance above 95% throughout the tariff period	20
7	Remain current on NWASCO license fees throughout 2018 and propose a payment plan on how your licence fee arrears will be cleared within the tariff period	10
8	Ring fence the fixed meter charge throughout the tariff period	10
9	Fully adhere to the 2018 Service Level Guarantees	15
10	Ensure that external auditing of Financial Statements is up to date	10
11	Ensure that no meter remains stuck for longer than 3 months	10
12	Submit an energy consumption reduction strategy by 31 <sup>st</sup> January 2015 and report on implementation biannually within the tariff period	10
<b>TOTAL</b>		<b>155</b>

#### 4.2 Approved tariff adjustments-Southern WSC

The approved percentage increases in the tariff for Southern WSC are shown in Table 5.

**Table 5: Approved Tariff adjustments-Southern WSC**

Customer category	% Increase		
	2018	2019	2020
Domestic Metered	5	5	5
Domestic Unmetered	10	10	10
Non- Domestic Metered	20	10	5
Non- Domestic Unmetered	7.5	5	5
Kiosks	0	0	0
<b>Average approved tariff increase</b>	<b>11.6</b>	<b>7.5</b>	<b>6.3</b>
<b>Proposed Tariff increase</b>	<b>6</b>	<b>5.7</b>	<b>4.1</b>

#### 4.2.1 Impact of the Tariff on the domestic customers-SWSC

Consumptions of 6, 30 and 60m<sup>3</sup> per month have been assumed and the calculations take into account the 20% sewerage charge, fixed meter charge of K10 and the sanitation

surcharge of 2.5% of the water bill. On average, a domestic metered customer's bill increased by **6%** for 2018 and **4.5%** for the remaining two years (2019 and 2020).

**Table 6: Impact of the Tariff on the domestic customers-SWSC**

Customer Category	Average monthly Consumption (m3)	Current Bill (K) 2017	Bill (K) 2018	Bill (K) 2019	Bill (K) 2020	% change 2018	% change 2019	% change 2020
Low cost	6	42.49	44.11	45.82	47.61	3.8%	3.9%	3.9%
Medium cost	30	249.66	261.64	274.22	287.44	4.8%	4.8%	4.8%
High cost	60	529.34	576.90	605.25	635.01	9.0%	4.9%	4.9%

#### 4.2.2 Tariff Conditions for 2018

Southern WSC was granted the 2018 tariffs, within which period it should attain at least 75% of the following conditions:

**Table 7: Tariff conditions**

#	Conditions	Weight
1	Ensure that actual costs do not exceed an adverse variance of 10% of the approved cost structure <b>K72,157,232</b> for 2018.	10
2	Ensure that total personnel/labour costs do not exceed the approved limit of <b>(K31,653,267)</b> for 2018.	20
3	Maintain an average collection efficiency of at least <b>85%</b> throughout the tariff period.	20
4	Attain full cost coverage of at least 97% by 31 <sup>st</sup> August, 2018	20
5	Increase number of connections by at least <b>2,500</b> (from December, 2017) by 31 <sup>st</sup> August, 2018.	10
6	Install at least <b>5,000</b> customers' meters by 31 <sup>st</sup> August, 2018.	10
7	Remain current on NWASCO license fees throughout 2018 and propose a payment plan on how your licence fee arrears will be cleared within the tariff period.	10
8	Ensure that external auditing of Financial Statements is up to date by 31 <sup>st</sup> August, 2018.	10
9	Ring-fence sanitation surcharge throughout the tariff period and always seek authorisation before use.	20
10	Adhere to service Level Guarantee for supply hours generally and in particular, in Kanyebele Township in Siavonga, Harry Mwanga Nkumbula and Manungu	10



#	Conditions	Weight
	Townships in Monze and Kamunza Township of Choma throughout the tariff period.	
11	Ring fence the fixed meter charge throughout the tariff period.	10
12	Submit an energy consumption reduction strategy by 31 <sup>st</sup> January 2018 and report on implementation biannually within the tariff period.	10
13	Increase sewerage connections on the network by at least <b>700</b> (from the base as at December, 2016) by 31 <sup>st</sup> August 2018	10
14	Maintain water quality compliance above 95% throughout the tariff period	20
<b>TOTAL</b>		<b>190</b>

## 5. Conclusion

The main cost drivers for the upwards tariff adjustment were the increases in electricity and fuel costs which were projected to be at least **15%** and **10%** per annum. The rest of the costs were projected to increase only by inflation. The other consideration particularly for EWSC was to progressively increase O&M cost coverage towards 100% in order to improve sustainability. To ensure the poor have access water supply, the kiosks tariffs were maintained at a flat rate of K5 per cubic meter throughout the three years period (2018-2020) for both EWSC and SWSC.