Guidelines on Tariff Adjustment (+Tariff Model)

Table of Contents **Page**

1. INTRODUCTION

This guideline is an update of the first "Guidelines on Tariff" dated February 2002. It is issued in line with the National Water Policy acknowledging the importance of cost recovery and service provision to all Zambians, especially the poor. This guideline takes into account the experiences of the past year as well as the current status and needs of the Service Providers.

The contents of this guideline refers to

- A Regulator's function in tariff setting;
- NWASCO's objectives and principles with regard to tariff policy;
- When and how the service providers should present their Tariff Adjustment Proposals;
- How the tariff adjustment proposals are assessed – Tariff Model.

2. WHY DOES NWASCO ISSUE TARIFF GUIDELINES?

The Water Supply and Sanitation Act No. 28 of 1997 explicitly confers the right to NWASCO to "develop guidelines for ….. the setting of tariffs for the provision of water and sanitation services" (Section 4 (2) (d) (iv)).

Water supply services are not rendered in a competitive market environment but they take place principally as a natural monopoly (only one supplier per region). This implies that Service Providers would be inclined to charge high monopoly prices (above competitive prices) and lack an incentive to become more efficient if left to themselves. In this monopolistic environment, it is the task of the regulator to set tariffs which

- cover the necessary costs for sustainable service provision,
- protect the consumers from unfair charges,
- ensure that a certain minimum quantity of water is affordable to all including the very poor.

Each Service Provider has to submit a tariff proposal to NWASCO if an adjustment of the current tariff is planned. Based on an analysis of cost level and structure as well as performance and efficiency in service provision, new tariffs are set by the Regulator (see Chapter 3 for the detailed procedure).

Within this framework NWASCO as a Regulator has the obligation to

- enable the service providers to operate on a sustainable basis,
- protect the consumers from being overcharged,
- ensure the access to the services for the poor.

For effective regulation NWASCO needs to have access to reliable information about a particular provider's costs and services and to be able to compare these values with previous values of the same provider with the aim to measure the increase of

efficiency. NWASCO will also compare the values with the costs and services of other providers (benchmarks).

NWASCO is aware of the necessity to increase the tariffs with the aim of cost recovery, but is also compelled to protect the customers from undue cost charges and inefficiencies in the services.

The role of NWASCO is to guide the providers to achieve acceptable service standards but not to uniform the water prices and services. At the moment there are wide variations in the service standards and charged tariffs, but NWASCO has started to initiate a process of a certain level of harmonization. The regulator will closely observe the service standards and the associated cost for delivering the services with the aim of eradicating inefficient practices and unjustified costs.

3. WHAT ARE NWASCO'S OBJECTIVES AND PRINCIPLES REGARDING THE WATER TARIFF?

3.1 General Objectives

By means of the pricing of water, several objectives listed below have to be achieved. When setting the tariffs, it shall be aimed at achieving a balance between these objectives.

a) Sufficient revenues for the service providers

Full cost recovery in the long run is one of the seven sector principles contained in the "National Water Policy" of November 1994. Full cost recovery means that the Service Providers are able to recover the cost of operation and maintenance of the WSS systems as well as the cost of investments. With tariff rates that allow for **full cost recovery** it is possible to sustain and expand the WSS installations without any external financing.

The water providers in Zambia are still far from this point. Installations for WSS services are costly and so far not all people in Zambia have access to safe drinking water and even less to an acceptable sanitation. Increased financial means will be needed for the extension of the services with the aim to cover the present and future water and sanitation demand of all people in Zambia. Due to the scarcity of external financing, it is necessary to finance increasing parts of new investments through self-financing (surplus cash flow) and ensure cross subsidization with the aim to deliver affordable services to the poor.

None cost covering tariffs inhibits service providers from extending services to those who are not yet served. Charging cost covering tariffs can thus also be regarded as a contribution to a fair distribution of scarce resources.

Failure to cover cost means that subsidies must be sought from Government or international organizations. As a result

sustainability cannot be assured which typically means that capital investment is insufficient, the condition of the system deteriorates and service delivery declines.

To avoid such a situation, a sound tariff setting should allow the provider to generate sufficient revenues to recover all justified costs in order to ensure sustainability of service provision.

b) Equitable and fair distribution of water

Each person has the right to receive a minimum level of drinking water supply at an affordable price.

Water is a basic need for every human being. It is clear that everybody must have access to a certain amount of safe drinking water for cooking and drinking. Health organisations include hygienic considerations and recommend 30 to 35 litres per person per day as a minimum. This results in a basic requirement for a family of 6 to 7 persons of about 6 m^3 water per month. This quantity should be accessible at a social price oriented at the purchasing power of the poor. Once this target has been achieved there is no reason why the water in excess of this minimum quantity should not be priced as an economic good at or above full cost recovery. In order to cover the overall costs, the service providers shall be allowed to charge a higher than cost covering tariff for high consumption. Besides financing the subsidised prices for basic consumption, these increasing block tariffs also discourage high consumption, which helps to conserve water.

c) Efficiency incentives for providers

It is one of the tasks of effective regulation to set incentives for service providers to become more efficient. This means increasing the service level at a given cost level or decreasing the cost of providing an existing service level. These efficiency gains in the form of cost savings can then be passed on to the consumer preventing them from continuing to pay for inefficiencies. In order to initiate an increase in efficiency, the regulator sets incentives to decrease the main cost items: i.e. personnel and energy costs. A further large potential for realising efficiency gains is to reduce the currently high water losses ("Unaccounted for Water, UfW").

When setting the tariffs, the Regulator therefore also takes into account that appropriate incentives for the realisation of efficiency gains are provided for.

As the service providers become more efficient, they manage to produce water at lower prices. Therefore, NWASCO will not allow for an automatic full inflationary adjustment of the tariffs but instead assumes that the providers become a bit more efficient every year. These efficiency gains lead to lower costs for the provider. Consequently, tariff adjustments, due to inflation need not cover the entire inflation figure.

In as far as efficiency aims will have been accomplished at some time in future, inflation can also be accepted in full, for tariff increases.

d) Conservation of treated water

Everyone should have an incentive to conserve water through payment for actual consumption (metering of consumption) and progressive tariffs.

Even in a country with sufficient water availability conservation of water resources is an important task. It is not just the question of conserving the raw water, but there are other considerations:

- Safe drinking water is treated with costly chemicals and should therefore only be used for purposes where treated water is necessary due to hygienic reasons and not for watering plants.
- In the process of water distribution, electricity is required for pumping of water.
- A lot of other resources (mainly capital and labour) are used in the WSS services.

The price a costumer is charged for the provision of safe drinking water shall reflect the quantity which has actually been consumed. This is on the one hand, a matter of fairness; on the other hand, wastage of valuable drinking water is prevented.

Paying, always, the same amount for water regardless of whether the consumption is either high or low ("flat rates") does not provide any incentive for consumers to conserve water. Excess consumption of water prevails for example if consumers do not pay attention to closing taps properly, repairing leakages within the premise and if they use water for gardening and other purposes. Sometimes customers supply their neighbours, if those are disconnected due to non-payment. These incidences linked to flat rates contribute to the high rates of unaccounted for water (UFW) in Zambian towns.

Introducing metering and ensuring that billing is based on metering is the only way to guarantee that clients pay according to their consumption and thus to the costs they cause the WSS service providers.

Consumers when metered are better able to regulate their water consumption according to their ability to pay. Thus, metering will reduce water consumption to acceptable and affordable levels. If the wastage of water is reduced there is less need to extend treatment plants and other installations which is costly for the service providers and eventually has to be paid for by the customers through the tariffs.

NWASCO's clear policy is to oblige providers to introduce metering and to submit programs for attaining a metering rate of 100 % (refer to Guideline on the Required Minimum Service Level – Code of Practice).

By charging cost covering tariffs combined with the metering of water consumption, the right signals can be given to the consumers so that they can decide how much they can afford or are willing to pay.

e) Protection of the environment

The environment has to be protected for the use of future generations.

There are mainly two ways in which WSS service provision can have a negative impact on the environment. First, the excessive use of ground water has to be avoided in order to prevent a permanent decline of the groundwater level. This can mainly be achieved by conservation of water (see d)) and adequate monitoring. Second, sewage has to be treated adequately before being released into the environment. When setting the tariffs for WSS, the real costs of treating sewage has to be taken into account. Central sewage treatment networks in urban settings are

very costly to maintain and expand. Therefore, they are an important factor to be considered in the tariff setting when moving towards full cost recovery.

3.2. Tariff implications of the current regulatory framework

In order to determine the most suitable regulatory regime, NWASCO considered the prevailing circumstances. Currently, the urban Zambian water sector can be described by the following characteristics:

- WSS service provision in urban areas is carried out mainly by Commercial Utilities (CUs). Most of which started operations after July 2000.
- CUs started with very low tariff levels and most are still not able to fully cover their recurrent costs due to poor performance and low tariff levels.
- The poverty level in Zambia is high and the average income of the urban population is quite low which has a serious impact on the ability to pay for water and sanitation services.
- Most of the investments in the sector are currently financed by external grants or loans.

In view of these characteristics, NWASCO has chosen to follow the "cost plus regulation" approach which aims at ensuring that the utilities cover costs and eventually obtain an acceptable profit. This is crucial taking into account the ability to pay, in particular of the poor population.

The "cost plus regulation" approach for the tariff negotiation procedure implies that the tariffs will eventually be set to cover all costs. Taking into consideration the current tariff level, the immediate objective is to reach coverage of operation and maintenance (O&M) costs. The second step is to move towards full cost recovery which includes capital replacement costs in order to ensure the long-term sustainability. By choosing this regulatory approach, priority is explicitly given to creating a sustainable environment for the CUs while accepting the weaker incentives for performance improvements compared to other regulatory approaches. However, for the protection of the consumers, the tariff adjustments will always be related to a reasonable level of O&M costs and an acceptable performance of the CUs.

Once most of the CUs approach full cost recovery it will be explored if a different regulatory regime should be applied which sets more pronounced incentives for performance improvements and is more suitable to achieve an optimal level of investments for service improvements.

NWASCO distinguishes between two different types of CUs according to their ability to cover their O&M costs from the collected revenue:

TYPE 1: 100% O&M cost coverage not yet reached

In this category, the economic viability is the primary concern of NWASCO. As long as the CUs operate with negative cash flows, debts will continue to accumulate and pose a continuous threat to the existence of the companies.

Therefore, NWASCO will ensure that the tariffs for each CU are raised to a level allowing that 100% O&M cost coverage could be achieved by the end of 2005 if reasonable effort is undertaken to collect revenue (for established benchmarks see p.11).

TYPE 2: O&M cost coverage between 100% and 150 %

If a CU has reached this category, it means that O&M costs are covered and that full cost recovery is the next goal. It is NWASCO's objective, to enable each CU covering O&M costs to reach full cost recovery within fours years taking into consideration the customers' ability to pay, performance and cost structure of the CU.

The ability to pay of all the customers including the peri-urban residents has to be assessed and verified in detail. One major objective of NWASCO is to set incentives to allow a maximum number of people to have access to safe drinking water. It is unacceptable to raise the tariffs beyond people's ability to pay. If the ability to pay is found to be insufficient to allow for full cost coverage, alternative solutions have to be looked at in order to ensure both, the maximum coverage and the sustainability of the CU.

If the ability to pay is adequate, the performance of the CUs will be analysed in detail. In this stage, when the immediate threat to the existence of the CU is no longer imminent, the primary regulatory objective is the realization of efficiency gains to be passed on to the consumers and to improvement of infrastructure as well as service levels. Therefore, the regulatory regime sets incentives for increased performance and a further increase of tariffs is tied to the achievement of acceptable performance levels.

3.3. Tariff Structure

Consumer Groups

The first consideration with respect to a tariff structure has to be given to the number and type of different consumer groups.

The group with the highest number of connections is normally the group of domestic consumers which on its own is usually divided at least into two groups:

a) customers with individual house connections and
b) customers at water kiosks / public taps.

Frequently, more different domestic customer groups do exist. This is mainly due to the absence of metering and the necessity to cluster the customers into groups according to their likely amount of consumption or to their likely level of purchasing power. This is often referred to as areas with low, middle and high income customers. As soon as metering is introduced it is no longer justified to continue with the clustering of domestic customers which is sometimes, especially in mixed areas, rather difficult to do. If customers feel that the clustering is unfair (unjustified) respectively, they are tempted to stop paying their bills.

Other customer groups in Zambian towns are industrial and commercial customers as well as Government institutions.

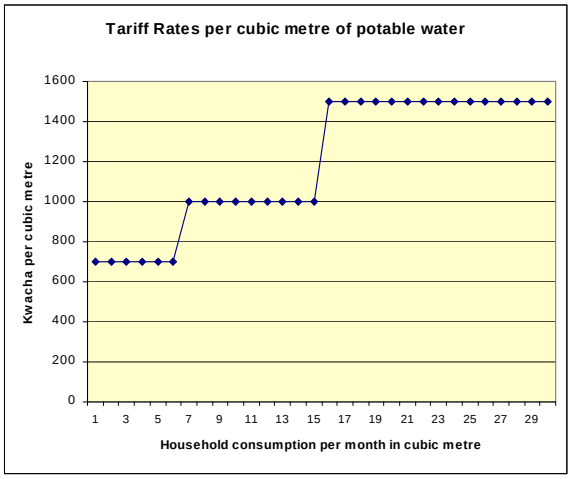
After metering is introduced it is advisable to keep the number of different consumer groups to a minimum. This makes the tariff system simple and fewer irregularities are likely to prevail.

Block Tariffs for Domestic Customers

In order to include cross subsidizing and to achieve water conservation purposes NWASCO proposes a block tariff system with at least three blocks for domestic consumers, such as shown in the following example:

1. EXAMPLE**!** Tariff rates per cubic metre:
1. block of 0 to 6 m^3 = 700 Kwacha/m^3
2. block 6 to 15 m^3 = 1000 Kwacha/m^3
3. block 15 to x m^3 = 1500 Kwacha/m^3

or graphically:



The cubic meters of the first block of at least 6 cubic meters (but no more than 10 cubic metre) represent the lifeline consumption and are supposed to be billed at a social tariff rate, while the cubic meters in excess of this first block should be billed in accordance with the average cost per cubic metre of water. The remaining third block of the tariff structure is then thought for consumption above the normal needs (such as for watering lawns) and has to generate the revenues for the cross subsidizing of the first block of consumption (lifeline consumption).

The quantity of the second block has to be fixed with respect to the local consumption patterns (as influenced by family size and consumption habits) but should not exceed 140 litre per person per day or 25 cubic metre per month for a household of six. A third block is then necessary for higher consumption. A fourth block might also be added. Taking this orientation another example is:

2. EXAMPLE**!** Tariff rates per cubic metre:
1. block of 0 to 10 m^3 = 600 Kwacha/m^3
2. block 10 to 25 m^3 = 1000 Kwacha/m^3
3. block 25 to 50 m^3 = 1300 Kwacha/m^3
4. block 50 to x m^3 = 1800 Kwacha/m^3

The advantages of block tariffs are obvious. Nevertheless, identifying the best tariff structure for a certain provider is best done as a tariff study that provides revenue forecasts for different scenarios.

Billing on Block Tariffs

Block tariffs can be billed in two different ways, as illustrated in the following (based on the figures of the above example no. 1):

1. **Simple Block Tariff:** Once the consumption has reached a certain level, the whole consumption is billed with the rate to be applied for this block.

   Examples for total billed amounts:

   Consumption of 7m^3 per month
   Total price of bill (7 times 1000 Kwacha)
   = 7000 Kwacha

   Consumption of 6m^3 per month
   Total price of bill (6 times 700 Kwacha)
   = 4200 Kwacha

   The increment in consumption of 1m^3 between the two bills results in a price difference of 2800 Kwacha (that is the price equivalent of 4 m^3 lifeline consumption – 4 times 700 Kwacha). This system is discouraged because it is difficult to explain to a customer that a small increment of consumption results in a high price increase. This system would require an accurate meter reading exactly on the same date, to reflect the real consumption during the month. Otherwise the customers would easily complain on false meter reading.

   In order to avoid a customer bill being substantially increased with a small increase of consumption, every metered domestic customer shall benefit from the lifeline consumption as shown in the next example.

   In order to exclude big consumers profiting from subsidised tariff blocks, the provider can consider excluding the social block once consumption has reached the third block.

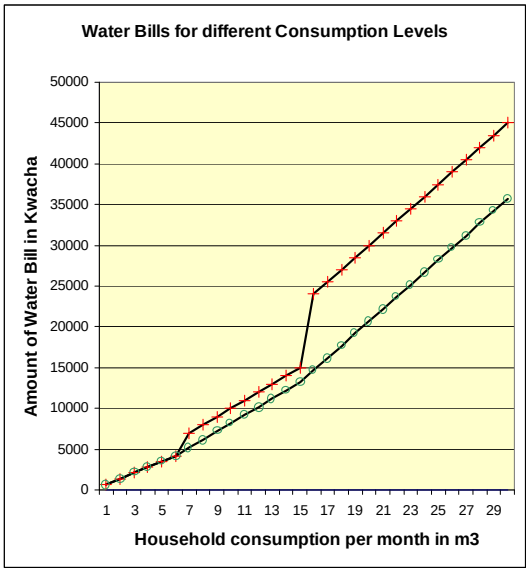
2. **Rising Block Tariff:** With this system the first 6 cubic metre always cost the same. It is only the additional quantity that is billed at the higher tariff.

   Examples for total billed amounts:

   Consumption of 7m^3 per month
   Total price of bill (6 x 700 = 4200
   + 1 x 1000 = 1000
   = 5200 Kwacha

   Consumption of 6m^3 per month
   Total price of bill (6 x 700 Kwacha)
   = 4200 Kwacha

   The increase of the bill between the consumption of 6 and 7 cubic metres is just as high as the equivalent price of 1 cubic metre in the second block and thus is reasonable.



The graphical presentation of the two block tariffs in the next table shows a smoother line for the rising block tariffs.

The advantages NWASCO sees in the second method of the Rising Block Tariffs is that it can be considered as a fair way of billing for consumption and that it will help avoid conflicts between the provider and its customers.

Tariffs at water kiosks and standpipes

For the poor, a household connection is a rather costly way of getting access to water. There is a connection fee due when it is installed and the billing for consumption is generally done monthly and also includes mostly a standing charge (see 2.2.7: Other Fees). Payment of the bills is also expected to be very frequent, for instance monthly. From the high rates of outstanding debts of customers in low income areas it can be concluded that there is a high number of families who cannot afford to pay regularly. Once important sums over several months have been accumulated it is out of reach for them to pay their bill. For them a water kiosk system has to be provided, where the water price per cubic metre should not be higher than the social block tariff. This price should already include the margin of the kiosk operator if possible but should not be significantly higher than the social tariff for household connections plus the standing charge divided by the cubic metres of the first block.

The provider has the obligation to control the tariffs at the kiosks to ensure that the poor can afford to pay the price and that they benefit from the social lifeline tariff.

Guiding principles on how to operate kiosks are available from NWASCO in the framework of the guidelines for the Devolution Trust Fund.

Tariffs for Commercial and Administrative Customers

The water tariffs applied to commerce, industry and administration should be at full cost recovery. Blocks need not necessarily be introduced. Since an institution does not have a need for a basic consumption, like individuals, a single tariff block is sufficient unless there is a need to give an incentive for water conservation. In such a case there is special consideration necessary concerning the quantity of the blocks.

The total amount of a bill that high consumption customers should pay has a limit. If it becomes less costly for them to drill their own boreholes instead of getting water from the provider, then the prices have to be negotiated to find an adequate tariff.

Tariffs for Sewerage

The tariff for sewerage connections should, due to practical reasons, be calculated as a percentage of the water consumption. Metering of sewerage is not necessary,

except if a customer gets water from a borehole or other resources. The percentage should be calculated in such a way that a cross-subsidising of sewerage services by revenue resulting from water supply and vice versa is to be avoided.

In parts of the town with no central sewerage, individual solutions installed by customers should be promoted.

Other fees

In WSS there are a number of other services involved which also cause costs to the Service Providers and therefore have to be paid for by customers. The following list of other fees is not comprehensive and does not mean that other charges are not allowed if reasonable.

- Standing (fixed) charge per bill
- Connection fee
- Reconnection fee
- Meter testing fee
- Meter installation fee
- Security deposit

The **standing (fixed) charge per bill** is thought to cover the cost of monthly billing (including meter reading), maintenance of the connection, and meter testing in regular intervals (at least every eight years). Some other costs incurred through direct access to the water system can also be included. It is strongly recommended to use a standing charge because it prevents customers from applying for several connections in order to profit several times from the social block tariff. The fixed charge should not be higher than the cost of the first six cubic metres of consumption.

A **connection fee** is levied only once when a new customer is added to the system by means of a single household connection.

A **reconnection fee** should be levied whenever a client has been disconnected for a justifiable reason (e.g. non-payment of bill). The fee should be high enough to give an incentive to the customers for paying their bills on time.

A **meter testing fee** is a fee for the testing of meters upon request of a customer. If the meter is in fact faulty no fee is to be charged.

A **meter installation fee** is applicable when a meter has to be replaced because of customer damage. This is not to be levied for the first meter installation because this should be covered by the connection fee.

A **security deposit** may be charged to a new client or a client who is moving to a new premise. The deposit is refunded as soon as the client leaves the premise. The amount of this deposit is usually calculated to correspond to an average monthly bill.

All other fees – whether included in the list above or others – have to be included in the tariff adjustment proposal of the Service Provider and they have to be approved by NWASCO. The Regulator will ensure that the fees charged for other services are reasonable compared to the costs involved for the Service Provider.

Discounts and Rebates

Granting small discounts on bills that are paid within three days of delivery (i.e. ahead of the due date) is a normal practice and results in benefits (interests, earnings or savings) to the provider. But exaggerated discounts or rebates for those who pay late is against the principle of fairness to all customers.

From time to time, significant rebates on long outstanding water bills are announced by the providers through press releases. Often such rebates are proposed to overcome short-term liquidity problems. This practice contradicts the cost recovery principle and discriminates against customers who pays their bill regularly and on time.

While it can be understood that providers like to return to a normal situation of up-to-date billing registers, it has to be recognized that massive rebates do not solve this problem. Those who pay regularly are not favoured but discriminated against. Fairness to all customers requires other types of action that are targeted, first, to eliminate inefficiencies in the billing and collection system and second, to offer alternative (less expensive) services to those who cannot afford to pay for house connections.

To avoid any misuse of rebates or discounts NWASCO requires the providers to apply for a rebate system in advance i.e. with the application of a tariff adjustment proposal. This also applies to lotteries or other benefits in kind. The costs of such activities always have to be covered by expected benefits (interest, earnings or the like) from such actions, otherwise the principle of cost recovery is threatened.

4. WHEN TO APPLY FOR A TARIFF ADJUSTMENT?

4.1. General

There is a window for tariff adjustments once per year. NWASCO expects the providers to submit Tariff Adjustment Proposals after the Annual Statements of the Company are compiled and ready for distribution to the public.

The tariff adjustment proposals have to be submitted to NWASCO between August and September (deadline 30th September). However, it is advisable to submit early, preferably in August to allow for analysis. Due to experiences during previous years, NWASCO will not compromise on this deadline. Any proposals received after the deadline have to be resubmitted with updated figures for the tariff adjustments in the following year. The same will apply if NWASCO sets individual deadlines for the clarifications or missing information and the service provider fails to adhere to the deadlines.

Due to the administrative efforts involved, it is not advisable for a service provider to apply for tariff adjustment every year. Instead it should be aimed at covering 2-3 year intervals. The required projections (see Chapter 5) can be produced for the entire timeframe. On this basis, a tariff schedule can be developed. The tariff schedule can also foresee a stepwise adjustment of the tariffs for the period under review. This can be useful to avoid sharp increases.

Further-more, it can be used to accommodate infla-tionary adjustments. Tariffs are supposed to increase with inflation. As soon as costs increase, the principle of cost recovery requests a corresponding tariff increase. If inflation is high, regular adjustments in relatively short periods are necessary.

In addition, the service providers are advised to discuss a medium term strategic plan (5-6 years) with regard to the development of the tariffs as well as corresponding performance targets. Such a strategic plan shall be based on an updated business plan. This has to be adopted by the Board of Directors before being submitted to NWASCO in order ensure that the content is the CU's guiding document for the following years and therefore binding. On the basis of such a medium term strategic plan, NWASCO is able to ensure further development of the tariffs which will be tied to performance benchmarks individually agreed upon with the service provider. This procedure ensures some security for the CUs and hence increases their capacity to implement proper financial planning.

4.2. The tariff adjustment process

This process of tariff adjustment is designed to allow for increased stakeholder participation. It shall be ensured that the different views are properly taken into account in the decision making process. Therefore, both the consumers and the CUs have an important role to play.

The following steps shall constitute the tariff adjustment process:

	Step	Timeframe
1)	Before submitting a tariff proposal to NWASCO each CU is to undertake a **consumer consultation meeting** to explain the reasons for the planned tariff adjustments and get feedback from the consumers. Minutes of Meeting (MoM) shall be recorded and be attached to the tariff applications. The consumer consultation meeting shall consist of: • The Water Watch Groups (WWGs) in the area, ten domestic consumers representing a cross section of consumers, who will be picked from a list of people who have indicated their willingness to attend the consultation meeting to the WWG. The CU will therefore inform NWASCO at least four weeks ahead of the scheduled consumer meeting of their intention to have a tariff adjustment process, commence and publicise the same in an appropriate media that will reach at least 75% of the customers. • Where there is no WWG, the representation of the domestic consumers shall be increased to fifteen, picked from a list of people who have indicated their willingness to attend the consultation meeting to a community based organisation.	May – July Notify NWASCO of intention to submit a tariff adjustment proposal.
2)	The CU shall enter into **negotiations with big consumers** (>5% of revenues) before the submission of the tariff proposal to NWASCO. The	May – July

	results shall be included in the tariff proposals.	
3)	Depending on the outcome of Steps 1) and 2), the CUs shall **adjust their tariff proposals** to take care of the concerns raised.	August
4)	**Submission of the tariff proposal** to NWASCO.	**Deadline: 30th September**
5)	**First screening** of submitted tariff proposal by Inspectorate	
6)	**Presentation** of the proposal by the CU before the NWASCO management. NWASCO provides feedback to the CUs	Oct 1-16
7)	**Adjustments** to be made or additional documents to be submitted by the CU if necessary.	Oct 17 - 25
8)	**Analysis** by inspectorate according to the procedure laid out in Chapter 6 including feedback if necessary.	Oct 17 – 31
9)	**Presentation** of the analysis of the proposal to the Administration and Finance Committee (**AFC**) by the NWASCO management at the latest, two weeks after receiving comments from the CUs.	November 10-20
10)	**Consideration and endorsement** of the AFC recommendations by the **Council**.	December 5 - 15
11)	**Communication of the Council's decision** to the CU indicating the following information: • Standard format showing proposed and approved tariff • conditionalities (if any) • explanations for deviations from proposals • effective date	December 15 - 21
12)	The CU shall: • if decision is accepted: advertise new tariffs - 30 days notice • if decision is not accepted: appeal to NWASCO within 14 calendar days	
13)	The appeal will be considered by the NWASCO Council. In case the grounds for appeal are not accepted, the CU is advised to appeal to the Minister of Energy and Water Development for arbitration.	

5. HOW TO APPLY FOR A TARIFF ADJUSTMENT?

In order to facilitate the preparation of a tariff adjustment proposal, a standard format is attached as Annex 1-7. With the aim to enable a fast reply to a tariff adjustment proposal, all service providers must adhere to the standard format. It is available on diskette and can be used directly for filling in the required information.

As a rule, NWASCO expects the providers to hand in both, a hard and a soft copy of the tariff adjustment application. The documents to be submitted to NWASCO are listed below.

The providers are expected to prepare 'Tariff Adjustment Proposals' in a sound and comprehensive manner. All figures provided within the Proposal have to have a clear and precise background in the provider's bookkeeping and management information system. Most of the requested figures refer to the period of one financial year (previous, current and following year). Each CU shall therefore choose the periods according to their financial year (January – December or April – March).

The tariff adjustment proposal shall comprise the following topics:

1. General information of the provider
2. Performance Indicators
3. Projections of the required average tariff
4. Proposed new tariff structure

Submission of the tariff adjustment proposal to NWASCO shall include the following documents:

- Justification of the Proposal
- Tariff Proposal
  - Annex 1: General Information
  - Annex 2: Performance Indicators
  - Annex 3: O&M Costs
  - Annex 4: Production
  - Annex 5: Average Tariff
  - Annex 6: Revenue Projections
  - Annex 7: Tariff Schedule
- Attachments:
  - MoM of consultative consumer meeting
  - Comment on MoM by CUs
  - Agreements with the big consumers
  - Tariff study where applicable (to be defined more in detail)
  - Up-dated Business Plan according to the guideline (if revised)
  - Comment on implementation of Business Plan
  - Last audited financial statement
  - Management accounts for last six months

5.1. General Information of the Provider

The service provider shall submit all the relevant general information according to **Annex 1 "General Information"**.

5.2. Performance Indicators

The performance indicators shall be filled in according to **Annex 2 "Performance Indicators"**. The benchmarks shall be used from the individual licence or Minimum Service Level Agreement (MSLA) respectively unless agreed otherwise.

5.3. Projecting the required average tariff

Step 1:

Projection of O&M Costs for the current and following year as well as for the entire period for which the tariff adjustment shall apply. The projections are entered into **Annex 3 "O&M Costs"**. The CUs are requested to stick to the cost categories listed in the table in order to enable comparability even if different cost categories are used for internal accounting purposes. Only Type-II providers (CUs that are already in a position to cover 100% O&M costs with their actual revenues) have to fill in lines 11 and 12 of the cost tables which refer to full cost coverage.

The projected inflation rate is contained in the O&M cost projections and thereby taken into account in the calculations for the required average tariff. The inflation rate used should be stated. Therefore, no additional inflationary adjustments need to be foreseen.

For accuracy of the cost accounting, NWASCO will mainly rely on the results of the official auditing of financial statements as far as the figures from the previous year are concerned.

NWASCO has the right to consult all accounting details and supporting documents of any provider. For this purpose access to the documents has to be given to any inspector employed (internally or externally) by NWASCO in line with the WSS ACT 1997.

It is assumed that the providers will not be tempted to modify the cost structure for the purpose of the tariff adjustments because otherwise the managers will have to bear the consequences after any fraud will have been detected.

Step 2:

Projection of quantity of water produced, Unaccounted for Water (UfW) and quantity of water billed in the different consumer categories for the entire period for which the tariff adjustment shall apply according to **Annex 4 "Production".**

When assembling the projections, the service provider has to start with the actual quantities billed in the previous period. Then estimates for the current period as well as projections for the following period(s) have to be made. The CUs shall provide clear and realistic figures of water production. It is important that the estimated quantities are based on the latest available actual figures. Any major deviations (increases or decreases) in one consumption category have to be explained plausibly.

Step 3:

The resulting average cost per m3 billed as well as the average tariff required to cover the entire O&M costs are calculated automatically in **Annex 5 "Average Tariff"** once the agreed benchmark for collection efficiency is entered into the provided data entry fields.

5.4. Proposing the tariff structure

The required average tariff which results from Chapter 5.3. is sufficient to cover the O&M costs and parts of the full costs respectively if a CU has progressed into the Type II – phase.

This average tariff has to be translated into a suitable tariff structure based on the rising block tariff model as described in Chapter 3.1.

The following example shows a typical rising block tariff structure:

Tariff [T1 – T6] structure:

T1 (0-6 m^3) 50% - 70% of average tariff
T2 (6-15 m^3) 100% of average tariff
T3 (15-x m^3) 150% of average tariff
T4 (x m^3) 100% of average tariff
T5 (0-6 m^3) 40% - 60% of average tariff
T6 (each m^3) 115%-130% of average tariff

In order to verify whether the proposed tariff structure is in line with the required average tariff and will deliver the projected revenues, the quantities billed per tariff block have to be estimated (Q1 – Q6 in the table below).

The following table shall be used to predict the average revenue per m3 of water using the proposed tariff structure (T1 – T6):

Type of customer	**Tariff**	**Quantity billed per year**	**Annual Revenues**
Metered household connections : -lower consumption bracket (0-6 m^3) -middle consumption bracket (6-15m^3) -higher consumption bracket (over 15)	 T1 T2 T3	 Q1 Q2 Q3	 T1 x Q1 T2 x Q2 T3 x Q3
Un-metered connections	T4	Q4 (estimate)	T4 x Q4
Water at standpipes, kiosks	T5	Q5	T5 x Q5
Industrial, commercial connections	T6	Q6	T6 x Q6
Totals or Sums (∑)	--	**∑ of Quantity**	**∑ of Revenues**
Average revenue (total revenues divided by total billed quantity)			**∑ of R./ ∑ of Q.**

These projections shall be entered into **Annex 6 "Revenue Projections"**. Again, it is essential that the projected quantities billed for the different tariff blocks are based on the most recent figures. The changes have to be plausibly explained. Any major deviations require detailed explanations.

The prediction of the quantity per tariff block is not only important for the calculation of the average tariff but also to verify if the aims of the tariff policy are

achieved, by changes occurring within the different tariff blocks.

Once all the data entry field of Annex 6 are filled in, the resulting average tariff is calculated automatically. The proposed tariff structure has to be modified accordingly if the average tariff resulting from the revenue projections differs from the required average tariff as calculated in Annex 5.

The proposed tariff structure shall be entered into the table in **Annex 7 "Tariff Schedule"** together with the tariffs currently applied. In case the tariff adjustment proposal contains several steps of adjustment, the necessary columns have to be added to the table.

6. HOW DOES NWASCO ASSESS A TARIFF ADJUSTMENT PROPOSAL?

6.1 Structure of Tariff Analysis

The analysis of the tariff proposal will follow the structure as outlined in Figure 1 below. The starting point is the "Projected O&M Costs" submitted by the CU. Adjustments are made for unacceptable costs and the performance of the CU, which are results of the cost analysis and the performance analysis respectively. The outcome is the "Performance Adjusted O&M Costs", which NWASCO allows the CU to cover through revenues and which determines the average tariff. The different tariff categories are derived from the average tariff, taking into account the consumption pattern. While Figure1 provides only a rough overview, the details are explained in the Chapters 6.2 – 6.4.

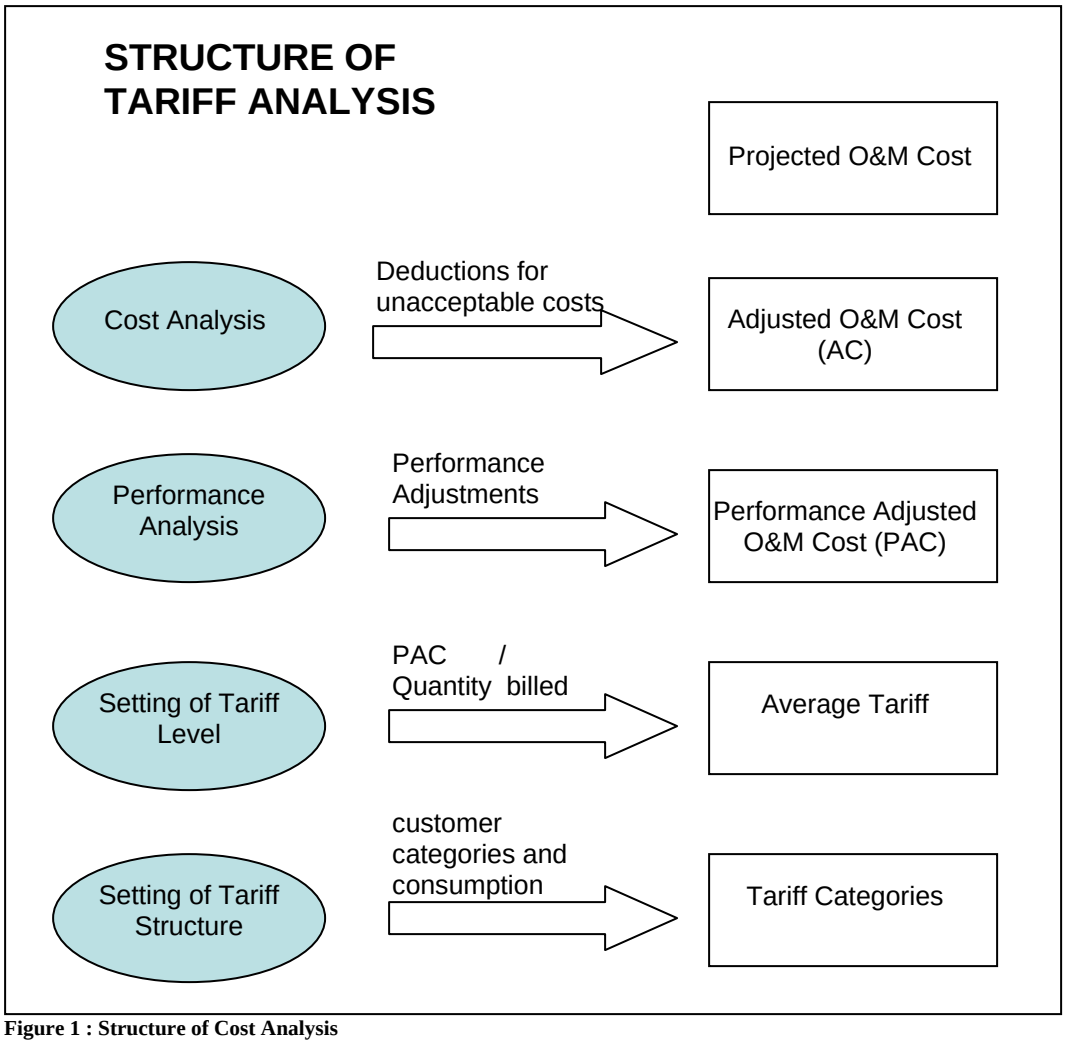


Figure 1 : Structure of Cost Analysis

For the detailed analysis the service providers are classified according to their ability to cover their O&M Costs with their collected revenues. The following two categories are used:

TYPE 1:
Coverage of O&M Costs < 100%

TYPE 2:
Coverage of O&M Costs between 100% and 150%

6.2. Cost Analysis

The Projected O&M Costs for the following year become the basis for the analysis of the O&M costs. The service providers shall submit information on O&M cost and cost structure (actual for previous and current year as well as projections for coming year) according to Annex 1.

The current level as well as potential increases will be analysed in detail, in particular as far as personnel costs are concerned. If the explanations given by the service providers are not satisfactory to convince NWASCO that the current level of increases is justified, they may propose deductions from the Projected O&M Costs. The reasons for deductions shall be clearly explained. The results are the Adjusted O&M Costs (AC) (see table below).

	Projected O&M Costs
-	Deductions for unacceptable costs
=	**Adjusted O&M Costs (AC) I**

It is the aim of NWASCO to allow tariffs to be set to reach full cost recovery within four years after the service providers have achieved 100% O&M cost coverage. The preconditions are that the ability to pay, as well as, that the O&M costs are within reasonable limits and performance is acceptable.

Therefore, the following table applies for service providers of Type II:

	Projected O&M Costs
-	Deductions for unacceptable costs
=	**Adjusted O&M Costs I (ACI)**
+	Increment towards full cost
	Adjusted O&M Costs II (ACII)

For the purpose of simplicity, it is assumed that full cost recovery is reached when the revenue covers about 150% of O&M cost. The use of this simplified method postpones the necessary discussions about determination of full costs (valuation of assets, methods of depreciation, appropriate investment levels etc.) to a later stage when
a) Service providers will have made progress themselves in full cost calculations and
b) the cost recovery and performance levels have improved.

In order to fulfil the above specified aim of reaching 150% O&M cost coverage within four years, the following schedule will be applied in order to determine the increment on ACI towards full cost:

	Increment towards full cost on ACI
Year 1*	12.5%
Year 2*	25%
Year 3*	37.5 %
Year 4*	50%

*(after fully covering O&M costs)

The increments on ACI will only apply if performance of the provider is acceptable and the assessment of the ability to pay, which has to accompany each tariff proposal, raises no serious objections.

6.3. Performance Analysis

The performance analysis will concentrate on certain indicators to determine whether there are deviations from the agreed performance.

The following indicators will be taken into account in the performance analysis:

(1) Metering Ratio
(2) Water Quality
(3) Service Hours
(4) Specific efforts and initiatives to improve efficiency, service or access
(5) Unaccounted for Water (UfW)
(6) Collection Efficiency

The criteria (1) – (4) are considered in the calculation of the Performance Adjusted O&M Costs (PAC), while criteria (5) and (6) are treated separately as outlined in Section 6.4.

For indicators (2) and (3), the service providers have committed themselves to different benchmarks in the Minimum Service Level Agreement (MSLA). The benchmarks for (1) and (5) are individually negotiated and set for each service provider while the benchmark for indicator (6) is determined as specified under Section 6.4. The performance of the service provider will be measured against these benchmarks during the tariff negotiations in the following year. Indicator (4) is a qualitative indicator where service providers are given the opportunity to be rewarded for special initiatives that demonstrate their commitment to good performance.

Determination of Performance Adjusted O&M Costs (PAC)

The failure of a service provider to achieve agreed benchmarks and set standards (indicators (1)-(3)) has a negative impact while a positive impact can be evoked by specific efforts of the service provider (indicator (4)). The positive or negative impact is measured by attributing scores. Annex 2 shows the sample form for the performance analysis. The distribution of scores is as follows:

	Deductions	Max.
1)	Metering Ratio	- 3
2)	Water Quality	- 5
3)	Average Service hours/day	- 7
	Max Deductions	***- 15***
	Bonus	
4)	Any programs documenting specific efforts of the CU	+ 15
	Max Bonus	***+ 15***

The total score is then transformed into monetary terms as a percentage of the Adjusted O&M Costs. The maximum reward/penalization amounts to +/- 5% of the Adjusted O&M Cost I for Type I-providers and +/- 10% of Adjusted O&M Cost II for Type II-providers respectively, according to the following table:

Total Score	***Performance Adjustment Type I***	***Performance Adjustment Type II***
15	5%	10%
14	4,67%	9,33%
13	4,33%	8,67%
12	4,00%	8,00%
11	3,67%	7,33%
10	3,33%	6,67%
9	3,00%	6,00%
8	2,67%	5,33%
7	2,33%	4,67%
6	2,00%	4,00%
5	1,67%	3,33%
4	1,33%	2,67%
3	1,00%	2,00%
2	0,67%	1,33%
1	0,33%	0,67%
0	0,00%	0,00%
-1	-0,33%	-0,67%
-2	-0,67%	-1,33%
-3	-1,00%	-2,00%
-4	-1,33%	-2,67%
-5	-1,67%	-3,33%

-6	-2,00%	-4,00%
-7	-2,33%	-4,67%
-8	-2,67%	-5,33%
-9	-3,00%	-6,00%
-10	-3,33%	-6,67%
-11	-3,67%	-7,33%
-12	-4,00%	-8,00%
-13	-4,33%	-8,67%
-14	-4,67%	-9,33%
-15	-5,00%	-10,00%

	Adjusted O&M Costs (AC) I or II
-/+	Performance Adjustments
=	**Performance Adjusted O&M Costs (PAC)**

The Performance Adjusted O&M Costs (PAC) contains the penalties/rewards for performance as well as adjustments for unjustified costs. Therefore, the PAC are the costs which NWASCO will allow the CU to cover. The approved tariffs will be set to create sufficient revenue to cover the PAC.

6.4. Assessing the adequate tariff level

In the calculations for the average tariff, both efficiency criteria, "collection efficiency" and "unaccounted for water" are taken into account. By applying the agreed benchmarks for each criterion in the calculations as outlined below, the service provider is automatically penalized if it fails to achieve the set benchmarks.

Unaccounted for Water (UfW)

The following calculations show how the average tariff (excl. collection efficiency) is derived:

Projected Quantity Produced
- Unaccounted for Water (UfW)
= **Projected Quantity Billed**

Performance Adjusted O&M Costs
/ Projected Quantity Billed (in m3)
= **Projected Average Cost (per m3)**

Projected Average Cost (per m3)
= Projected Average Tariff (per m3) (excl. collection efficiency)

For these calculations, the individually agreed benchmark for UfW is used. If the actual UfW still exceeds the benchmark, it reduces the actual quantity billed, thereby increasing the "Actual Average Cost (per m3)". The average tariff would then be too low to cover the "Actual Average Costs". Hence, each service provider has a clear incentive to meet the agreed benchmark.

This mechanism assumes that the demand for water is not yet satisfied. This implies that an increased amount of water available for distribution will actually increase the amount of water consumed. The assumption is believed to be realistic in the current set-up, at least for the next few years due to the low pressure in most networks and the considerable urban population still unserved in most towns.

Satisfied Demand for Water

In cases where the assumption of a non-satsified water demand is not true, UfW above the benchmark would be compensated by a higher quantity produced, while the quantity billed would

be assumed to be constant. A higher quantity produced entails increased actual production costs compared to the projections. Again the average tariff would then be too low to cover the "Actual Average Cost", thereby setting again an incentive for the service providers to achieve the benchmark.

CUs with metering ratio below 100%

Each CU shall improve the metering ratio as quickly as possible at least according to the agreed benchmarks. Despite this, it is recognised that most of the CUs currently have a metering below 100%. The above described mechanisms, however, functions only for metered connections. In order not to give an advantage to CUs with low metering ratios, the below described formulas apply to CUs with metering ratios below 100% to account for cases when these CUs fail to meet the agreed benchmark for UfW.

	Actual UfW (in %)
-	Benchmark for UfW (in %)
=	Deviation in UfW (in %)

	(100% - Metering Ratio)
*	Deviation in UfW
=	UfW Factor

	(Average Tariff (per m3) (excl. col. ef.)
	- (Average Tariff (per m3) (excl. col. ef.)*(UfW Factor / 2))
=	**Adjusted Projected Average Tariff (per m3)** (excl. col. ef.)

"Actual UfW" is defined as "Total Quantity of Water Produced" minus "Total Quantity billed". In order to get at least a clear figure for the quantity produced, each CUs is requested to install bulk and district meters by mid 2005, at the latest. This will be reflected in the individual benchmark for metering ratio.

Collection Efficiency

While the equation

	Projected Average Cost (per m3)
=	Average Tariff (per m3)

is generally binding, it implies a collection efficiency of 100%. However, it is recognised that most service providers will not be able to collect 100% of the billed amount. Incentives shall be set to continuously increase the collection efficiency.

Therefore, the following benchmarks will be set in consideration of the current levels of each individual service provider:

Year 1*	85% or the gap between collection efficiency in the previous year and 85% has to be reduced by half (e.g. 75% in 2004; benchmark for 2005 = 80%)
Year 2-4*	85%
Year 5* -	90%

* after endorsement of these procedures.

Newly established CUs are expected to reach a collection efficiency of 85% within two years after the commencement of operations.

Average Tariff

The following steps are followed to take into account the benchmark collection efficiency:

	Projected Average Cost (per m3)
=	**Projected Average Tariff (per m3)** (excl. collection efficiency)

	Average Tariff (per m3) (excl. collection efficiency)
/	Benchmark Collection Efficiency
	Projected Average Tariff (per m3)

Example:
Average Tariff (per m3) (excl. collection efficiency) = 1,000 ZK
Benchmark Collection Efficiency = 85%
Average Tariff (per m3) = 1,000 / 0.85 = 1,176