



# UTILITIES REGULATORY AUTHORITY

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## Luganville Water Tariff Review

### Issues Paper

*November 2012*

# Preface

When performing a tariff review, the key challenge faced by a regulator is to determine what is a “fair” price. One of the stated aims of the Utilities Regulatory Authority is to “promote the long-term interests of consumers”, which when applied to pricing raises the following considerations: If the price is set too high, consumers will spend more than they need, and may restrict usage and new connections; if the price is too low, then the industry cannot afford to invest in infrastructure upgrades and maintenance, and the quality of service will deteriorate. How then can the efficient price level be defined that balances the interests of consumers and the industry?

In an open competitive marketplace where customers can freely choose and switch between multiple service providers, a provider that offers a good level of quality at the lowest price will win customers and gain market share. There is a strong incentive to achieve efficiency gains, as reducing costs will provide extra profit which can be reinvested in quality, or can enable further price reductions to win more customers. Over the long term, the most efficient companies will succeed and prices will be at a level no higher than that which allows companies cover the cost of doing business.

Utility industries such as electricity and water tend to be “natural monopolies”, meaning that it is not efficient to have more than one network serving a single area. In a monopoly, the competitive pressure to drive down prices does not exist. In order to prevent unfair pricing by utility companies in Vanuatu, utility prices can be set according to tariff reviews by the independent Utilities Regulatory Authority.

The key consideration with any tariff review is the estimation of the efficient pricing level. This paper raises key issues that influence how the Authority will go about investigating that price level.

In order for the public, government and other industry stakeholders to have confidence in the price determination by the Authority, we will conduct this review with the utmost transparency and consult with stakeholders in a proactive way. I strongly urge any parties interested in water services in Luganville to engage with the process and submit responses in an open and considered way.

**Johnson Naviti Matarulapa Marakipule**

*Chairperson*

# Executive Summary

The Utilities Regulatory Authority is undertaking a tariff review on water services provided by the Public Works Department in Luganville. This paper represents the first stage of the review, explains the overall background and context, and sets out several issues for consideration by all interested stakeholders. Submissions received will inform how the tariff review will be carried out.

Listed below are the questions raised in addressing the key issues identified for stakeholder feedback:

## Methodology

- 1. What should be the most appropriate tariff setting method that the Authority should consider for the PWD water supply tariff review for Luganville?**
- 2. How should international benchmarking be considered for the purpose of the tariff review to better understand the reasonable cost of service of the utility?**
- 3. Can any stakeholders recommend any international benchmarks that may be relevant to compare to the Luganville water network?**

## Quality

- 4. What are the most relevant quality measures for customers in Luganville?**
- 5. What is the perception of the current level of quality in Luganville?**
- 6. Are customers willing to pay more for higher quality?**
- 7. How should quality be monitored and what sort of penalties should apply?**

## Demand

- 8. Are there Government policies in place that will encourage the growth of Luganville?**
- 9. How is the Luganville Municipal council addressing rural-urban migration?**
- 10. Are there communities or areas near the grid that could be connected?**
- 11. What are the different needs of different types of water customers in Luganville?**
- 12. Have there been cases of the following in Luganville, and why?**
  - **Rationing (or self-rationing) of water use during periods of water supply shortages?**
  - **Emergency bulk transportation of water?**
- 13. What are the current levels of water losses in Luganville?**
- 14. Are there any Public Works Department policies to stop water losses through theft and leakage?**
- 15. Are there procedures in accounting for water supplied but not charged for?**

### Infrastructure

- 16. What type of assets and services should be included in an investment plan?**
- 17. How should the Authority ensure compliance to any investment plan?**
- 18. How should investments that are financed through aid (or other similar facilities) be dealt with in the tariff review?**
- 19. How should the impact of aid-funded projects be considered in the asset base, investment plan, and forecast operating costs?**
- 20. How does aid affect the cost of capital in the tariff?**

### Operating Costs

- 21. Should there be a separate electricity tariff category for the water utility in Luganville?**
- 22. Should the water tariff in Luganville include an adjustment formula that automatically adjusts the tariff to pass through some fluctuations in input costs?**
- 23. What cost components should be included in such an adjustment formula?**
- 24. What kinds of provisions are appropriate for the water operator in Luganville?**
- 25. How should such provisions be managed (e.g. thresholds and recovery mechanism)?**

### Ownership

- 26. How can the information gathered in the tariff review be used in a budget submission by the PWD?**
- 27. At what point in the Government budgeting process should a new tariff come into effect?**
- 28. Is the Government considering changes to the budgeting process for water services in Luganville?**
- 29. Is the government considering tendering a contract for a private operator to provide water services in Luganville?**

It is important that all stakeholders are aware and able to comment on these issues from the start of the tariff review process. All comments and submissions in response to this paper will be collected and will inform all subsequent steps of the tariff review.

## How to respond to this paper

All stakeholders including the Government, the Public Works Department, existing customers and other members of the public are invited to comment on the issues raised in this paper. Responses and information received will be considered in the formalisation of the Authority's Framework Paper.

The Authority will be seeking responses as part of its public consultation process which will include visits to stakeholders and an outreach to communities. In addition to these public consultations, stakeholders can file submissions directly with the Authority.

Submissions can be made until  
**7 December 2012**

and can be made in person at the  
Office of the Utilities Regulatory Authority  
in the VNPF Building in Port Vila  
on the Ground Floor

mailed to  
Luganville Water Tariff Review  
Utilities Regulatory Authority  
P.M.B 9093  
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or called in by telephone to the  
Utilities Regulatory Authority at  
+678 23335

Submissions will be made available on the Authority's website in accordance with the Authority's submission policy. Any material that is confidential should be clearly marked as such.

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# 1. Introduction

## 1.1 About this paper

This report is the first stage of the tariff review of water services in Luganville. It sets out the legal and regulatory context of the tariff review, and raises several issues that are relevant to the way in which the Authority will conduct the review. All interested parties are invited to submit comments on these and any other issues to the Authority, in order to inform the ongoing tariff review process.

## 1.2 Purpose of this paper

The aim of this paper is to explain the context of the tariff review and to invite comments from stakeholders on some key issues that will impact how the tariff review will be carried out. It is important that all stakeholders are aware and able to comment on these issues from the start of the tariff review process. All comments and submissions in response to this paper will be collected and will inform all subsequent steps of the tariff review.

## 1.3 What this paper covers

This paper is structured into the following sections:

- Chapter 2, 'Regulatory and Legal Background', explains the relevant legislation and regulations that impact the tariff review, as well as providing a description of the tariff review process.
- Chapter 3, 'Issues', lays out a number of issues that will affect the tariff review process and invites comments and feedback from stakeholders.
- Chapter 4, 'Consultation Process', describes the consultation process that will be undertaken to facilitate stakeholder engagement with this paper.

## 1.4 Tariff review process

The process of the tariff review is designed to ensure that stakeholders are able to contribute at each stage of the review process. The different stages indicative timings of the tariff review process are:

Stage	Description	Indicative publication date
Issues paper	Stakeholders are invited to comment on issues that have an impact on the method and process of the tariff review	8 November 2012
Framework paper	Stakeholders are invited to comment on the detailed tariff-setting methodology and process	21 December 2012
Tariff application	Stakeholders are invited to comment on the application for a tariff from the Public Works Department.	21 December 2012
Draft decision	Stakeholders are invited to comment on the Authority's tariff decision	1 February 2013
Final decision	Stakeholders are informed of the Authority's final tariff decision	1 April 2013

After the final decision has been published, the new tariff will take effect once it has been gazetted, following approval from the relevant Minister.

## **1.5 About the Utilities Regulatory Authority**

The Utilities Regulatory Authority was established on the 11 February 2008 under the *Utilities Regulatory Authority Act No 11 of 2007* (the URA Act). The URA Act established the Authority as an independent economic regulator for pricing, access, standards and monitoring of concession agreements. The regulated services defined in the URA Act are the supply of electricity or water services.

The Authority provides continued and expanded support to the Vanuatu Government's microeconomic reform program. This program was designed to improve the efficiency and competitiveness of Vanuatu's economy through the reform of the electricity, water and other current and former government business enterprises.

The Government perceived the establishment of an independent regulatory body as necessary to ensure that the benefits of the industry structuring and concession arrangements were passed on to household, commercial and industrial customers.

The primary objective of the Authority is to 'improve access to electricity and water services and to protect the long-term interests of Vanuatu's consumers with regards to the price, quality and reliability of electricity and water services.'

This objective is central to the framework of economic regulation that facilitates the efficiency and financial viability of regulated utilities, prevents misuse of monopoly power and ensures that customers benefit from quality improvements and efficiency gains over the longer term.

The functions of the Authority, as expressed in the URA Act under which it is constituted, are:

- to exercise the functions and powers conferred by the URA Act or by any other Act in furtherance of the purpose of the Act;
- to provide advice, reports and recommendations to the Government relating to utilities;
- to inform the public of matters relating to utilities;
- to assist consumers to resolve grievances;
- to investigate and act upon offences under the URA Act ;
- to advise the Minister on any other matter referred to the Authority by the Minister; and
- to administer and monitor compliance of Concession Agreements under the URA Act.

In accordance with its Charter of Consultation and Regulatory Practice the Authority aims to be:

- independent, balanced and fair by ensuring its advice does not reflect undue influences and is consistent with its statutory objectives; and
- open and transparent by publishing its findings and conclusions.

Section 18 of the URA Act grants the Authority the power to determine the maximum price which may be charged in relation to any aspect of a regulated service in any place.



## **1.6 Sources of information and data**

All sources of external information and data quoted in this paper are provided in subscript or footnotes. All other information originates from the Authority.

## **1.7 Other related documents**

Readers of this report may also find it useful to review the following reports and documents:

- Utilities Regulatory Authority Annual Report 2011
- Utilities Regulatory Authority Act No. 11 of 2007 and Amendment (2010)
- Water Supply Act 1955 and Amendments
- Public Health Act 1994
- Ministry of Infrastructure and Public Utilities 2011 Annual Report
- National Water Strategy 2008-2018

## 2. Legal and regulatory background

### 2.1 Background to the tariff review

Mains water supply in Luganville is provided by the Public Works Department (PWD), which is part of the Ministry of Infrastructure and Public Utilities (MIPU). In a letter dated 21 September 2012, the Director General of MIPU requested that the Authority undertake a review of water tariffs in Luganville.

### 2.2 Tariff-setting powers

The power to set the price of water services is defined in Section 11 of the Water Supply Act 1955 (Water Supply Act). The Utilities Regulatory Authority Act No 11 of 2007 (the URA Act) assigns this power to the Authority, upon receiving written approval of the relevant Minister.

### 2.3 Water Supply Act 1955 (and amendments)

The Water Supply Act sets out the rules for connections to the public water supply, Government regulations for the supply of water, and the maintenance and protection of the water supply undertaking.

Section 11 of the Water Supply Act states that “the charges in respect of water supplied by pipe to a consumer’s premises shall be prescribed by Order made by the Minister”.

The current set of fees and charges for customers in Luganville are:

Deposit fee	VUV 5,000
Price per cubic metre	VUV 52
Water supplied to ships per cubic metre	VUV 65
Reconnection fee	VUV 3,000

### 2.4 Role of the URA

The *Utilities Regulatory Authority Act Number 11 of 2007* (the URA Act) establishes the Utilities Regulatory Authority (the Authority) of Vanuatu. The Authority is a body corporate with perpetual succession, acting independently from the Government.

The URA Act empowers the Authority to regulate certain utilities, in particular, the provision of electricity and water services in Vanuatu. Section 18 of the URA Act states that “the Authority may determine the maximum price which may be charged in relation to any aspect of a regulated service in any place”.

Regulated services are defined as “the supply of electricity or water to a consumer and includes all processes leading up to that supply”. As PWD supplies water to consumers in Luganville, PWD is defined as a utility providing a regulated service, and is therefore subject to regulation by the Authority. The powers of the Minister defined in Section 11 of the Water Supply Act are assigned to the Authority, and can be exercised following written approval from the relevant minister.

## 3. Issues

The purpose of this chapter is to raise several issues that will have an impact on how the tariff review will be performed. These issues are grouped under general headings with specific issues described separately. In addition to the specific questions raised in this paper, the Authority invites stakeholders to provide any comments or raise any other issues or questions relevant to the tariff review of water services in Luganville.

### 3.1 Methodology

The tariff-setting methodology is the way in which the Authority will calculate the appropriate price for the regulated service. An effective methodology should ensure that the fees consumers are charged allow the utility to make sufficient revenue to operate, make appropriate investments, and that the utility is encouraged to reduce costs without compromising service quality.

#### 3.1.1 Tariff Setting Methods

Neither the URA Act nor the Water Supply Act define any methodology as to how the charges or tariffs are to be calculated. Therefore, the Authority will set the methodology based on consistent principles and without precedence and in accordance to the requirements of this review.

The Authority has identified two types of tariff setting methodologies that may be considered for the review.

1. **Estimate reasonable cost of service method.** In this methodology, the Authority must estimate a reasonable cost of providing the service at a certain level of quality, and then set tariffs at a level which allow the utility to recover the reasonable cost of service.

*Pros*

- Possible where there is no direct comparator set of companies
- Results in a detailed and transparent view of the cost of service
- Extensive data set created during the tariff review could be used in a tender process
- Takes into account future changes in cost of service

*Cons*

- Requires a large number of assumptions and forecasts, which need to be evidence-based
- More resource and labour-intensive for the Authority and regulated entity
- Difficult where there is a lack of data - work must be done to justify all assumptions

2. **RPI-X method.** In this method the price is changed according to an index that is typically comprised of an inflation measure, I, and a productivity offset, X. This is known as the I - X index. X is set by a relevant authority and I is dependent on the country's economic status.

*Pros*

- Simple and easy to implement where it is possible
- Less reliant on data from the utility.
- Explicitly ties the price to the inflation level

*Cons*

- Assumes that the current price level is close to the efficient level
- A set of comparator companies is required to perform comparative efficiency analysis in the calculation of X
- More difficult to take specific factors into account that may impact the efficient price level

**1. What should be the most appropriate tariff setting method that the Authority should consider for the PWD water supply tariff review for Luganville?**

### **3.1.2 International benchmarking**

International benchmarking may be used to compare the performance of local utilities to that of similar utilities overseas against specific performance indices. This can provide further evidence to inform the estimate of the reasonable cost of service for the utility.

The factors that define how to identify an appropriate international benchmark may include but are not limited to:

- countries of similar geographical properties (e.g. climate, proximity, urban.rural)
- network size in terms of number of customers and infrastructure
- type of entity (government vs. private ownership)
- economic development factors
- types of service and quality levels
- tariff levels

**2. How should international benchmarking be considered for the purpose of the tariff review to better understand the reasonable cost of service of the utility?**

**3. Can any stakeholder recommend any international benchmarks that may be relevant to compare to the Luganville water network?**

## **3.2 Quality**

Water quality is one of the major contributing components in the tariff setting process for an operating utility. Quality is defined as the quality of the water itself being passed through the network, and also the level of service supplied by an operating water utility. There are three types of quality to be considered in the tariff review: water quality, reliability, and customer service:

- **Water quality.** The common aspects that should be considered when determining water quality are:
  - Microbial aspects - the level of bacteria and other microbes present in the water
  - Disinfection aspects - the level of disinfectant additives (such as chlorine) in the water
  - Chemical aspects - the level of certain chemicals present in the water (such as those from industrial process, agricultural activities, etc.)
  - Radiological aspects - the level of radioactive substances present in the water
  - Sensory perception aspects - the taste, odour and appearance of the water
- **Reliability.** The reliability of the water supply is defined by the level and consistency of pressure in the system, and the continuity of supply.
- **Customer Service.** The effectiveness of the utility in activities such as billing, responding to queries, customer complaints, etc.

**4. What are the most relevant quality measures for customers in Luganville?**

**5. What is the perception of the current level of quality in Luganville?**

**6. Are customers willing to pay more for higher quality?**

**7. How should quality be monitored and what sort of penalties should apply?**

### 3.3 Demand

A forecast of the amount of water to be delivered to customers is a key component of the tariff calculation. This comprises of the number (and type) of customers and the amount of water consumer per customer. In order to create as accurate a forecast as possible, it is important to understand what factors may impact the number of customers and customer usage in the future.

#### 3.3.1 Customer needs

Development activities are taking place in Luganville. Over the years the migration rate of people from the rural areas of Vanuatu into Luganville has increased and is still increasing. As population increases in Luganville, so does the demand for water.

- 8. Are there Government policies in place that will encourage the growth of Luganville?**
- 9. How is the Luganville Municipal council addressing rural-urban migration?**
- 10. Are there communities or areas near the grid that could be connected?**
- 11. What are the different needs of different types of water customers in Luganville?**

#### 3.3.2 Usage

Water is one of the world's most essential resources. It is supplied to consumers to meet their daily basic needs for water. The water in Luganville is sourced from a spring, flows into an open well then pumped into storage tanks. The total amount of water used correlates to the demand component in setting a reasonable tariff.

- 12. Have there been cases of the following in Luganville, and why?**
  - **Rationing (or self-rationing) of water use during periods of water supply shortages?**
  - **Emergency bulk transportation of water?**

#### 3.3.3 Losses and theft

A reasonable tariff factors in the total quantity of producing and supplying water to consumers. There is a difference in the quantity of water put into the distribution system and the quantity of water billed to consumers. Water is lost during the distribution process either through leakage, theft and water supplied but not charged for.

- 13. What are the current levels of water losses in Luganville?**
- 14. Are there any Public Works Department policies to stop water losses through theft and leakage?**
- 15. Are there procedures in accounting for water supplied but not charged for?**

## 3.4 Infrastructure

Infrastructure includes any building, plant or equipment that is required to extract and supply water to customers. The level of infrastructure required is determined by the desired level of service quality and reliability and the forecast demand. If any improvement in quality is required, the expected plan of investment required should reflect this.

**16. What type of assets and services should be included in the asset base and investment plan?**

**17. How should the Authority ensure compliance to any investment plan?**

The reasonable cost of the utility includes the reasonable cost of financing any investment in the utility. Standard practice for private operators is to estimate the cost of capital using a capital asset pricing model (CAPM) or similar. In the situation of water supply in Luganville, one significant potential source of funding for infrastructure investment is donations from development partners.

**18. How should investments that are financed through aid (or other similar facilities) be dealt with in the tariff review?**

**19. How should the impact of aid-funded projects be considered in the asset base, investment plan, and forecast operating costs?**

**20. How does aid affect the cost of capital in the tariff?**

## 3.5 Operating Costs

In order to set a reasonable tariff, the review will consider what are the reasonable operating costs for providing water services in Luganville. Subsequent stages of the review will analyse the operations of PWD in Luganville and compare with any available international benchmarks. There are, however, some aspects of operating costs that raise specific issues that must be considered:

### 3.5.1 Electricity costs

Water pumping in Luganville is provided by electric pumps that are supplied by the main power grid in Luganville. Electricity costs represent a significant part of the overall costs of providing water in Luganville. Electricity in Luganville is provided by Vanuatu Utilities and Infrastructure Limited (VUI), a subsidiary of Pernix Group Inc. under a Memorandum of Understanding (MOU) with the Government.

**21. Should there be a separate electricity tariff category for the water utility in Luganville?**

### 3.5.2 Tariff adjustment formula

The calculation of a reasonable tariff includes assumptions about the unit prices of various input costs for the utility (e.g. electricity, labour, materials). The price of these costs can fluctuate and are outside of the control of the utility. Currently, the mechanism for setting the water tariff in Luganville does not explicitly take these cost fluctuations into account, and therefore the utility bears the full risk of these cost fluctuations. Other utility tariffs in Vanuatu (e.g. electricity in Port Vila, Tanna and Malekula, electricity in Luganville, and water in Port Vila) include a tariff adjustment formula that allows for the automatic adjustment of the tariff based

on fluctuations of certain input costs. This allows the utility to fully cover its input costs, and passes the risk of these cost fluctuations on to customers.

- 22. Should the water tariff in Luganville include an adjustment formula that automatically adjusts the tariff to pass through some fluctuations in input costs?**
- 23. What cost components should be included in such an adjustment formula?**

### 3.5.3 Provisions

A well-run business includes in its accounts provisions for certain events that may happen in the future. The calculation of a reasonable tariff for water services in Luganville will include an amount for any provisions that are considered reasonable. A provision is an amount put aside to cover a liability that is unpredictable in amount and timing (e.g. natural disasters, bad debts, exceptional circumstances).

- 24. What kinds of provisions are appropriate for the water operator in Luganville?**
- 25. How should such provisions be managed (e.g. thresholds and recovery mechanism)?**

## 3.6 Ownership

### 3.6.1 Revenue collection and PWD budgeting

The PWD is a department of the government. Currently all revenue collected from water bills in Luganville go directly into the public fund. Every year, a budget from the public fund is provided to PWD to provide water services in Luganville. There is currently no link between the revenue collected and the budget set, and therefore the tariff level has no direct impact on the funds available for PWD to operate and maintain the water network in Luganville. The aim of the tariff review is to ensure that the revenue generated from water bills provides adequate revenue for the operation of water services.

- 26. How can the information gathered in the tariff review be used in a budget submission by the PWD?**
- 27. At what point in the Government budgeting process should a new tariff come into effect?**
- 28. Is the Government considering changes to the budgeting process for water services in Luganville?**

### 3.6.2 Government vs. Private ownership

Water services in Luganville are currently provided by the government directly through PWD. It is possible that the government may consider changing this situation at some point in the future. Such a change would have an impact on how this tariff review will be carried out, as the information gathered and published in this review could be useful in any future tendering process.

- 29. Is the government considering tendering a contract for a private operator to provide water services in Luganville?**

## 4. Consultation Process

In order to actively gather the views of stakeholders, the Authority will conduct an extensive consultation process. This is in line with the Authority's Charter of Consultation and Regulatory Practice, and will include the following activities:

Approximate date	Activity	Description	Target stakeholder group
14-16 November 2012	Government briefing (Port Vila)	Meeting in Port Vila with the Public Works Department and other relevant Government departments to provide any required explanation of this paper and to receive submissions.	Public Works Department and other interested Government departments in Port Vila.
21-23 November 2012	Government briefing (Luganville)	Meeting in Luganville with the Public Works Department and other relevant Government departments to provide a required explanation of this paper and to receive submissions.	Public Works Department and other interested Government departments in Luganville.
21-23 November 2012	Community forums (Luganville)	Series of half-day public forums to explain this paper, answer questions and receive any submissions.	Public, commercial and industrial water customers in Luganville
21-23 November 2012	Public survey	A short structured questionnaire will be provided during community forums and also by direct surveying of a sample of water customers across Luganville	Domestic and commercial water customers



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**Utilities Regulatory Authority**

**Vanuatu**

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