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Utilities
Regulatory
Authority

Final Decision
And
Commission Order

Notice No. 255 of 2015

Case U-0022-14

In the matter of reviewing water tariffs for UNELCO in Port Vila

September 2015

Foreword

The Utilities Regulatory Authority Commission (the Commission) is pleased to issue this Final Decision and Order in the matter of reviewing water tariffs for UNELCO in Port Vila (case U-0022-14).

URA Staff commenced the tariff review in October 2014 upon instruction from the Commission to review UNELCO's water prices in Port Vila. Since the establishment of the Concession Contract between UNELCO and the Government of Vanuatu in 1993 the price of water provided by UNELCO in Port Vila has not been reviewed by an independent body.

In line with the Utilities Regulatory Authority's (URA) tariff review methodology, on the 15th of December 2014 UNELCO filed a formal Tariff Application outlining its costs, asset base, planned investments and revenue base. UNELCO made three subsequent revisions to its December Tariff Application. The third version of the tariff application was received on the 18th of February 2015. The URA issues a preliminary decision on the matter on 25th May 2015. Following the end of one month public consultation period allocated for the Preliminary Decision, UNELCO wrote to the URA requesting an extension in providing their submission on the Preliminary Decision until the 31st of July. URA in response allowed a two weeks extension from the 25th of June to the 6th of July. Following this, UNELCO applied for an additional extension, which URA granted in light of the recent Cyclone causing additional work. UNELCO's submission on the Preliminary Decision was received on the 15th of July 2015.

The URA has provided every opportunity for UNELCO to raise any technical issues, factual data or arguments they might have in regards to the Preliminary Decision. However UNELCO's feedback on the Preliminary Decision was mainly challenging the URA's legal authority for undertaking a tariff review on UNELCO's Port Vila Water concession. The only technical issue raised by UNELCO in its submission was that the rate of return for UNELCO's investments should be 12%. The URA has taken this into consideration in calculating the Final Order tariff. The Commission notes that UNELCO had earlier agreed to submit to a tariff review by the URA as part of Standstill Agreement it signed with the Hon. Minister of Lands in October 2014.

Based on comprehensive Staff analysis of the costs and customer data, the Commission is hereby ordering the base price P to equal 50.54 vatu per cubic metre as the Final Order base tariff for UNELCO's Port Vila water services. This is approximately a 14.74% reduction from current (semester 2 of 2015) P of 59.28 vatu per cubic meter.

This Final Order takes into account the change in electricity price since the issuing of the Preliminary Decision and change in real equity return from 9.65% to 12%. The Commission sees it reasonable to allow UNELCO a 12% real return on its equity cost of capital as opposed to the 9.65% real return on equity allowed in the Preliminary Decision. This is the main reason for the base tariff increase from 49.38 to 50.54 vatu per m3. The Commission sees this base tariff as a fair and reasonable one for UNELCO to operate sustainably into the future.

Based on its analysis Staff recommended that the current quarterly adjustment formula should be simplified and revised to more accurately reflect the current cost factors impacting UNELCO water operations. The Commission adopts the revised simplified formula as described in this Order. In addition the Commission looks forward to the URA and UNELCO working together to implement a new tariff structure that better serves the consumers within the Port Vila concession.

The highlights of this Order are as follows:

- Base rate for UNELCO Port Vila Water Services is reduced by 14.74% from Semester 2 of 2015 tariff of 59.28 vatu per cubic meter to 50.54.
- UNELCO is allowed a 12% real rate of return on its equity capital
- UNELCO's revenue required for water sales is 273,769,074 Vatu
- The Final Decision and Order base tariff of 50.54 vatu per cubic meter applies to customer billings beginning from 15th November 2015
- Replace current Adjustment formula with the Revised tariff adjustment formula as described in this Order
- UNELCO to advise its customers that the tariff applied is approved by the URA.

If UNELCO feels aggrieved by this decision, it may file a Grievance within 30 days and request the Commission to undertake an internal review of its decision.

The Commission thanks all stakeholders who have participated in this tariff review and acknowledges UNELCO's cooperation in this matter and efforts in providing safe, reliable and affordable water services to its customers.

Johnson Naviti Matarulapa Marakipule, Chairman

Hasso Bhatia, PhD, CEO and Commissioner

John Obed Alilee, Executive Commissioner

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1. Introduction

Table 1: Case information

Case number	U-0022-14
Applicant	Utilities Regulatory Authority
In the matter of	Reviewing the water tariffs for UNELCO in Port Vila
Commencement date	10th October 2014
Date of Preliminary Decision	25th May 2015
Date of Final Decision and Order	18th September 2015

On May 25th, 2015, the URA issued the Preliminary Decision on Water Tariffs for UNELCO in Port Vila. The Preliminary Decision proposed 49.38 vatu per Cubic meter as the base tariff, a reduction of 20.04% from the base price of water in the first semester of 2015. A revised tariff adjustment formula, which more accurately reflects changes in UNELCO's costs, and prices to be adjusted quarterly, was also proposed in the Preliminary Decision.

The Preliminary Decision was based primarily on the tariff application filed by UNELCO as well as on the Staff's investigation and recommendations in the case. It provided a comprehensive review of UNELCO's operations in regards to the provision of water in Port Vila pursuant to the concession agreement.

The Preliminary Decision sought comments from all interested parties and a public meeting was held by the Staff to answer any questions and receive comments regarding the Preliminary decision. The Public meeting was attended by staff from UNELCO, Department of Energy and the Water Resources Department. The only written comments received were from UNELCO. This Final Decision and Order discusses comments received from UNELCO and details the Commission's decision in arriving at the Final Order base tariff.

1.1 UNELCO submission on Preliminary Decision

At the end of the public consultation period on the 25th of June 2015, UNELCO requested to the URA for two separate extensions to file their written submissions. Their first letter of request dated 23rd of June 2015, was received two days before the end of the allocated one month public consultation of the Preliminary Decision. UNELCO stated in its letter that it "is currently preparing its submissions in relation to the Preliminary Decision. However, UNELCO will not be in a position to provide its written comments by 25 June 2015. UNELCO expects to be in a position to provide its written comments by 31 July 2015."1

The URA responded to UNELCO on the 25th of June stating that UNELCO has "not provided any reasons for requesting such an extension beyond the standard 30 day comment period"2 allowed for the case. However the URA extended the submission deadline by a further 10 days until Monday the 6th of July.

[1] Letter from UNELCO to URA, dated 23 June 2015, referenced 1507/15/U/DL/jw
[2] Letter from URA to UNELCO, dated 25 June 2015, referenced U-0022-14/150625/U/002

The URA received UNELCO's letter dated 2nd of July 2015 requesting a further extension for their written comments on the Preliminary Decision. In its letter UNELCO stated they needed more time to be able to fully complete their comments on the Preliminary Decision due to their "very heavy work load in the aftermath of recent cyclone Pam and the significant gap between URA's preliminary opinion and [their] own."3 UNELCO requested further extension till the 15th of July 2015 which was granted.

UNELCO submitted their written comments on the Preliminary Decision on the 15th of July 2015. Subsection 2.1 in this Final Decision and Order discusses UNELCO's submission in detail.

1.2 Case chronology

Table 2: Case chronology

Date	Activity
20th October 2014	Initiation notice sent to UNELCO.
15th December 2014	Initial Tariff Application received from UNELCO.
23rd December 2014	Follow-up data request.
13th January 2015	Second version of Tariff Application received from UNELCO.
23rd January 2015	Meeting and follow-up data request.
19th February 2015	Third version of Tariff Application received from UNELCO.
24th February 2015	UNELCO presentation of water master plan.
26th February 2015	Supplementary data received from UNELCO.
25th May 2015	Publication of Preliminary Decision.
23 June 2015	UNELCO requests a 5 week extension on Preliminary Decision submission to 31 July 2015.
25th of June 2015	URA grants UNELCO additional 10 days until the 6th of July 2015 to provide their submission on the Preliminary Decision.
25th of June 2015	End of 30 day public consultation on Preliminary Decision.
2nd of July 2015	UNELCO requests further extension until the 15th of July for their Preliminary Decision submission.
3rd of July 2015	URA grants UNELCO extension to UNELCO until the 15th of July for their submission on the Preliminary Decision.
15th July 2015	UNELCO's submission on Preliminary Decision received
18th September 2015	Final Decision and Commission Order

1.3 Legal context

The legal framework of the water sector in Vanuatu is based on the following legislation and contracts:

- Utilities Regulatory Authority Act (No. 11 of 2007) and amendments

3 Letter from UNELCO to URA, dated 2 July 2015, referenced 157/15/U/YM/jw

- Contract for the management and operation of the water supply service in Port Vila, dated 1993 and amendments
- Water Supply Act [CAP 24]
- Water Resource Management Act [CAP 281]

2. Final Base Tariff Calculation

2.1 Fair price

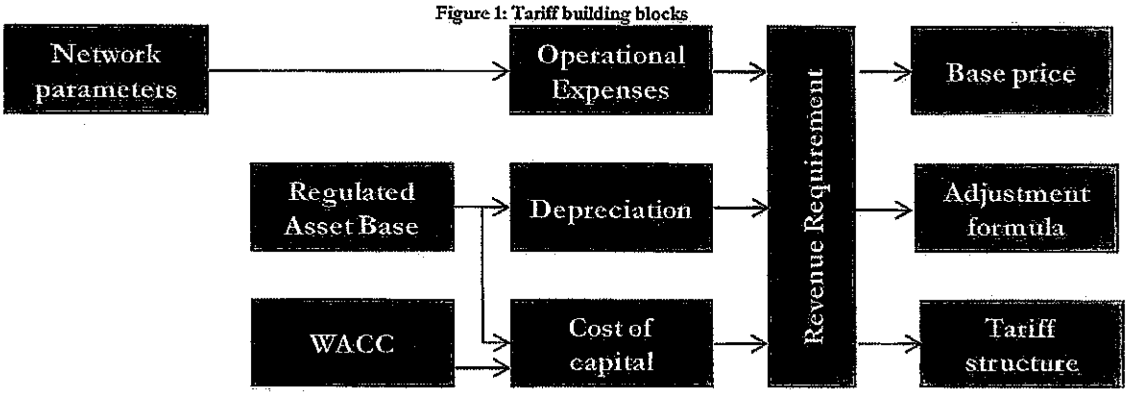
In a competitive market, competitive pressure forces companies to reduce prices in order to maintain their market share. The result of competition is that prices are set at levels that allow efficient companies to recover costs of operations, including the cost of financing capital investment. In a regulated monopoly market such as the water network in Port Vila, the role of the URA is to substitute itself for market forces in setting efficient prices. In order to judge what costs are reasonable, the URA takes into account historic costs and comparisons with similar services in other areas. The URA also takes into account the quality and reliability of service and cost implications of any required improvements in the quality of the service.

While there may be annual variations in system growth, consumption, and required investment, the price should reflect the average cost over the tariff period. It is the responsibility of the utility to organise its finances in such a way as to manage any short-run variation in revenues and costs. The tariff review process allows this average price to be adjusted to reflect changes in network parameters, input costs and efficiency levels. This has been accomplished by refining the quarterly Tariff adjustment formula

2.2 Methodology

The diagram below shows the components of the tariff calculation used in deriving the Final Order base price:

Figure 1: Tariff building blocks



- Major Network parameters include assumptions on the number of customers, volume of water sold, network length and electricity consumption
- Operational expenses are based on the network parameters and include cost assumptions for electricity, staff costs, new equipment, and other expense categories
- Regulated Asset Base is the net book value of utility-funded tangible fixed assets used to provide water services, on the utility books
- Depreciation expense is based on the regulated asset base and assumptions on the useful life of different types of assets

- Weighted Average Cost of Capital (WACC) is the average financial cost of capital (debt and equity) deployed by the operator for investment in the water system
- Revenue Requirement is the sum of the operational expenses, depreciation and cost of capital (including working capital)
- Base price is the average price (P) per unit of weighted demand
- Adjustment formula is used to adjust the price annually or quarterly to account for changes in costs that are outside of the control of the utility, in particular the cost of electricity, inflation offset by any productivity improvement
- Tariff structure is the price schedule for each category of customer (i.e. domestic, commercial) based on various types of use or levels of consumption

2.3 Base scenario

In order to calculate a fair price, a Base Scenario is estimated, predicated on operations in 2014. The purpose of the Base Scenario is to estimate what an efficient level of costs is for the current scale of network, with any short-run annual variations removed. This level of costs is used to determine the Base Price. A tariff adjustment formula is included to allow prices to change periodically to account for certain external factors that impact the cost of the water service, (e.g. electricity prices, inflation). The tariff review process allows for significant longer-term changes (e.g. system growth, customer consumption patterns, new investments, economies of scale) to be taken into account over time.

3. Network Parameters

The network parameters used in calculating the Final Decision and Order base tariff of 50.54 Vatu per cubic meter are the same assumptions used in the Preliminary Decision of May 2015. Since there have not been any objections from any stakeholders including UNELCO, URA accepts the parameters as final.

Table 3 Network parameters for Final Decision base tariff

Metric	Base Scenario
Number of customers	7,774
Length of network, m	221,900
Water sold, m^3 per year	3,807,073
Electricity kWh used per year	2,479,492

3.1 The number of customers

The number of customers estimated in this final decision is 7,774. This is the total number of meter connections and does not take into account having more than one household connected to one meter. The number of customers assumed was the actual number of meters connected in the last quarter of 2014 as provided by UNELCO. We have used this figure as it was the most recent data received by the URA.

3.2 Network length

The current total network length of 221,900 m is used in this Final Order base tariff calculation. This is UNELCO's water network length for the year 2014. As outlined in the Preliminary Decision, the network length over the years has been steadily increasing due to expansion of the concession area in Port Vila.

3.3 Water sold

The total cubic meters of water sold per year is calculated from the average meters cubed per customer between the period 2009-2014 multiplied by the number of customers assumed in the base year. This final order base tariff assumes that a total of 3,807,073 meters cubed is sold as the base scenario to generate an annual revenue requirement of Vatu 269,388,786.

3.4 Electricity Consumption

The electricity used per year constitutes a large proportion of operating costs (over 30%) and was calculated by multiplying the average electricity (kWh per m^3 sold) that was used by both the main pumping station and the booster pumps by the assumed m3 sold to arrive at a total of 2,479,492 kWh for the base scenario.

Table 4: Electricity consumption

Year	kVA	kWh per year
Main pumping station	380	2,469,002
Booster pumps (total)	66	10,490

4. Operating Costs

Operating expenses are the annual costs incurred in the operation of the water network. Considering the network parameter assumptions outlined above, each cost category is summarised in the table below and all except the electricity costs remain the same as the Preliminary Decision. Electricity costs have increased slightly in the Final Order to take into account the change in fuel price.

Table 5, '000 vatu

Cost category	Base scenario
Electricity costs	91,293
Personnel costs	56,874
Third party expenses	58,720
Stocked purchases	18,236
Non-stocked purchases	3,200
Tax and related fees	3,100
Total	**231,423**

4.1 Electricity Cost

The electricity costs vary according to external factors and are adjusted every month. Since the preliminary decision, it has increased from 47.71 vatu per kWh in May to 49.11 vatu per kWh in July 2015. UNELCO uses an average of the first 3 months of a 6 month period preceding the previous adjustment as per the concession contract in calculating the electricity price used for the water tariff. Since the fuel prices were lower in the previous months UNELCO's calculation of the electricity price for tariff setting purposes is slightly lower than URA's which uses the electricity price of 49.11/kWh for the month of July 2015, for the base price calculation.

4.2 Personnel Costs

Personnel Costs include remuneration and benefits, severance provision and training. URA has allowed UNELCO severance provision to be recovered through the tariff since severance is personnel associated cost as UNELCO is legally obligated under the Employment Act to commit to staff severance payments. Severance provision is removed from the Provision[4] category and included under personnel costs.

[4] See Provisions section under sub-section 4.4.1 in this report

URA has assumed the following breakdown as tabled below in the Final Order base tariff.

Table 6 Personal Costs, '000 Vatu

Cost Category	Base scenario
Staff remuneration and benefits	50,013
Severance provision	4,261
Training	2,600
Total personnel costs	**56,874**

4.3 Third Party Costs

These are services outsourced by UNELCO to third parties. The third party costs of 58,719,874 Vatu proposed in the Preliminary Decision is assumed in this Final Order base tariff calculation. Although UNELCO proposed in its Tariff Application to increase their third party expenses, as a result of increased outsourcing of certain functions. The URA expects there to be a trade-off between in-house staff costs and third party costs. As third party costs increase, staff costs should fall by at least the same amount or more, as outsourcing should create efficiencies. Therefore URA suggests third party expenses should not increase unless there is a trade-off with in-house staff costs. UNELCO has not established such benefit of further outsourcing in its submission.

4.4 Stocked Purchases

This includes inventory and equipment kept by UNELCO. Over the years 2009-2013, stock purchase costs have remained relatively consistent and therefore an average of 18,236,060 Vatu is assumed as reasonable.

4.5 Non-Stocked Purchases

This includes chemicals for chlorination and other consumables. These have remained relatively consistent over prior years. URA has assumed UNELCO's tariff application non-stock purchases total amount of 3,200,000 Vatu.

4.6 Tax and Related Fees

Tax and related fees charged by the government includes professional and other taxes. The amount 3,100,000 Vatu assumed in the final is the same amount proposed in the Preliminary Decision.

5. Capital costs

The tariff-setting methodology assumes that funds used for investments carry an associated cost. For example, bonds may be issued or loans taken in order to provide the required cash to finance infrastructure investment. The interest paid on such bonds or loans is an example of the capital cost. Similarly any risk-capital dedicated by the investors in the utility must provide a reasonable return to the investor. Tariff therefore must include a component for the cost of capital required to fund the assets used in providing services.

Water supply is a capital-intensive activity, meaning that a significant part of the cost of the service is due to investment utilized in funding of infrastructure assets. In the Port Vila water network, some assets are funded by parties other than the utility (e.g. private developers, donor partners, Government). These are not includable in computing utility's cost of capital. A fair tariff should include recovery of investment (depreciation) and appropriate compensation for costs of investment in the network by the utility.

The water contract held by UNELCO specifies that UNELCO should account for investments in tangible fixed network assets by depreciating investment over the remaining years of the contract. The impact of this accounting method is that annual depreciation expenses can only increase as the remaining contract life shrinks, regardless of the physical life of assets. The contract further allows UNELCO the recovery of un-depreciated assets at its expiration.

URA staff found that the regulatory practices in other jurisdictions is that as a norm the average cost of assets, depreciated over their useful life should be used for tariff-setting purposes, leaving to the management of any impact of the contractual accounting mechanism. By using the average cost depreciated over the useful life, it ensures that utility covers its reasonable costs over the long-run while maintaining stable tariffs for customers.

5.1 Regulated Asset Base

The Regulated Asset Base (RAB) represents the level of investment held by UNELCO in booked assets required to supply water to consumers. The Net Book Value (NBV) of all utility funded tangible fixed assets to be depreciated according to the expected useful life of the asset. It does not include any intangible assets, assets funded by third parties, financial assets or works in progress.

In this Final Order, the Net Book Value (NBV) of the RAB calculated is 351,003,559 Vatu. This value is determined by depreciating the asset cost over its useful life which is the same method outlined in the Preliminary Decision.

Depreciation is the recovery of investment spread over the useful life of an asset. The total annual depreciation expense is the sum of the depreciation charges for each category of used and useful asset. The weighted average asset life in any given year may vary due to fluctuations in asset type and the age of assets in use at any one time.

The weighted average life of assets as calculated through the base scenario in the preliminary decision was used to determine the annual depreciation charge. The weighted average life of assets was taken to be the average of the period 2009-2014. This is calculated from the asset register data provided by UNELCO.

Table 7: Depreciation calculation

Cost category	Base scenario
A. Gross Book Value(GBV)of used and useful tangible assets, utility-funded, '000 vatu	522,169
B. Weighted average life of assets, in years[5]	22.45
C. Annual depreciation charge (A/B), '000 vatu	**23,262**
Depreciation charge in Tariff Application (2014, for comparison), '000 vatu	21,167

URA notes that its method of computing depreciation actually results in somewhat higher expense allowed than proposed by UNELCO in this case.

5.2 Working capital

Working capital is funding required to meet the short-term financing needs of operating the water service. Working capital, for a utility is usually measured based on the average number of days elapsed between incurring operating expenses and revenue recovery from customers. For this reason the working capital has been applied to the operating expenses only. For utilities with 30 day billing period, it is generally accepted that because of the lag in receiving payments of bills, there will be a need for working capital for 30 days plus slack of 15 days during a monthly billing cycle, therefore a total of 45 days to compute working capital requirement, also known as '1/8th O&M' method.

The water service in Port Vila currently has a 3-month billing cycle, and so 105 (90 days plus slack of 15) days of operating costs would be the equivalent working capital requirement. UNELCO holds security deposits from customers, paid at the start of their water subscription. These funds provide additional cash flow at the start of a new customer connection. URA has estimated the total security deposits currently held by UNELCO to be 37,710,000 Vatu. URA has issued a Preliminary Decision on Billing Rules which proposes to modify the security deposit provision. When this provision is adopted there shall be an appropriate recognition in determining the working capital. For now the security deposits are deducted from the estimated working capital requirement. The final working capital allowed in this Final Order is 2.6% higher than that in the Preliminary Decision. This is to adjust for the small increase in electricity cost.

Table 8: Working capital allowance

Cost category	Base scenario
Total operating costs, '000 vatu (A)	231,423
Working capital period, days (B)	105
Total working capital needed '000 vatu	66,574
Security deposits held, '000 vatu (C)	37,710
Working capital requirement allowable, '000 vatu (A * (B/365)) – C	**28,864**
Working capital allowance from Tariff Application (2014) comparison), '000 vatu	119,600

[5] See breakdown in Appendix 2

One additional factor that should be taken into account is the fact that the largest single operating expense, electricity, is supplied by UNELCO to itself. This means UNELCO controls the timing of billing and payment for electricity services and thus the working capital needs. However in this Final Decision, there has been no adjustment made for this.

During preliminary stages of this tariff review, the possibility of reducing the billing cycle was discussed with UNELCO. URA has also suggested combined billing for water and electricity services as most customers are common. As well as reducing the requirement for working capital, there may be operational efficiencies associated with combining the meter reading and reduced billing cycle for water customers. The tariff impact of a change in the billing cycle to two-monthly or monthly will be considered if and when any change comes into effect. URA looks forward to continue discussions with UNELCO on this issue.

5.3 Cost of Capital

As mentioned, utility needs funds to finance the investments and operations for the business. Funds are raised in the form of debt and equity. The cost of capital represents the cost of funds raised and used for the business. In the preliminary decision, the real weighted average cost of capital (WACC) was determined to be 7.76%. Where the real WACC components assumed were: Debt 5.86%; Equity 9.65% (equivalent to 12.94% nominal), with a gearing ratio of 50%. For the final decision the cost of debt remained the same; however the cost of equity, as explained previously, is increased to 12% resulting in real WACC used for the final decision as 8.93%.

In computing the tariff, the URA has included as cost of capital at the current levels of investments and regulated asset base. However if UNELCO undertakes significant investment in the water network in Port Vila, they can apply to the URA for a tariff adjustment at any time. The URA will accept the application and adjust tariffs accordingly on single-issue basis.

Regarding allowance for working capital URA notes that working capital is not an investment rather it is cost of managing cash flows for operations. This cost should reflect the actual cost of short-term borrowing to cover any cash shortfalls, assuming the entity is running efficiently with a well-managed cash-flow. Staff notes that the real cost of debt component assumed is 5.86% and is used therefore for computing the cost of working capital.

Table 9: Cost of Capital

Cost category	Base scenario
Regulated Asset Base, '000 vatu	351,004
WACC, %	8.93
Cost of capital (RAB), '000 vatu	31,345
Working capital allowance, '000 vatu	28,864
Cost of debt, %	5.86
Cost of capital (working capital), '000 vatu	1,691
Total cost of capital, '000 vatu	**33,036**

6. Required revenue

6.1 Financial Provisions

Provisions are funds set aside for use in certain circumstances. There are four provisions that UNELCO included in their Port Vila water service costs: provisions for severance pay, inventory obsolescence, bad debt and self-insurance for equipment damages

Severance provision is covered under 'Personnel Costs'. Provision for inventory obsolescence for which the treatment in the accounts have not been specified by UNELCO and due to the fact that this should not be a major cost in a well run utility, it is not taken into account..

The self-insurance provision is the funds set aside for equipment repair and maintenance necessitated by accidents, natural disaster, catastrophic events. It covers property damage due to unlikely events such as fire, cyclone, earthquake, etc. UNELCO sets aside 42,000,000 vatu per year as the appropriate level for this provision that has accumulated over the years to 456,000,000 vatu in 2013. This is a large amount that does not require further accumulation. The details of where it is held or its usage were not provided to the URA despite several requests. Also we note that the provision for severance pay of 4.26 million vatu has been separately allowed in the Personnel costs

Cyclone Pam in March 2015 has caused damage to PV water system estimated by UNELCO at 56,000,000 vatu and can be covered by the accumulated funds in the provision. This is the largest natural disaster to occur in Vanuatu and still the cost to repair the water service was only a small fraction of the amount currently in the provisions fund suggesting that the currently the 'provisions' are adequately funded. Therefore URA suggests no further allowance for provisions in its calculations for the base scenario.

6.2 Article 29

As outlined in the Preliminary Decision, Article 29 of UNELCO's Port Vila Water Concession Contract is a special fund for the construction of new water connections and maintenance of the water source. This fund is financed by customer contribution of 1 vatu per cubic meter sold. The Vanuatu Government, through the Ministry of Lands, is expected to direct the use of this fund. URA is obligated to carry out annual investigation and report on the collection, management and use of the fund. An estimated amount of 3,807,073 Vatu is factored into the Final Order base tariff calculation as annual revenue allocated to the Article 29 fund.

The Commission advises the Ministry of Lands to establish a new governance structure for the Article 29 fund, through a committee comprising the Department of Water, Port Vila Municipal Council, UNELCO and URA.

The URA established a similar administration committee for a Santo Fund for electricity related projects from electricity revenues in Luganville in March 2014 which has been operating successfully. URA is available to discuss and provide assistance to the Government in setting up a similar governance structure for the Article 29 Fund.

6.3 Revenue from other goods and services

UNELCO earns revenue from providing some other services to customers, such as for new connections and reconnections. As the costs associated with providing these services are not separated from water services, the revenue amount which is customer contribution is subtracted from the required revenue to be generated from water tariffs.

The level of revenue obtained from other goods and services has varied over the period of 2009-2013. Due to the significant variation in this revenue line, the average calculated for the period 2009-2013 as in the preliminary decision is used as final. That is the average amount of 22,140,000 Vatu of revenue from other goods and services is deducted from the required revenue to determine the base price calculated in this final order.

6.4 Base Price

The Final Order base price is 50.54 Vatu per cubic meter. It is a 1.16 vatu increase to the proposed Preliminary Decision base price issued in May 2015.

The difference is from the increase in electricity cost as electricity is a major operational cost and an increase in return on equity. Furthermore water tariffs are adjusted and issued six monthly. The following table details the summary of all required cost of service, the required revenue and the new calculated base price to charge to consumers in order to collect the required revenue to cover all relevant costs.

Table 10 Base price calculation

Cost category	Base scenario
A. Operating costs, '000 vatu	231,423
B. Depreciation, '000 vatu	23,262
C. Cost of capital, '000 vatu	33,036
D. Provisions, '000 vatu	0
E. Article 29 fund, '000 vatu	3,807
F. Bad debt loss, '000 vatu	4,380
G. Total required revenue, '000 vatu G = (A+B+C+D+E+F)	295,909
H. Revenue from other services, '000 vatu	-22,140
I. Total required revenue from tariff, '000 vatu I = (G - H)	273,769
J. Water sold, '000 m3	3,807
K. Weighted demand, '000 P (P-1.42*m3 sold)	5,416
L. Base price L = (I/K)	50.54
Current price (adjusted for current electricity price)	60.15
Difference	-15.97%

In addition, the Total required revenue from tariff (I) is calculated by deducting Revenue from other services (H) from the total required revenue (G). The costs associated in earning Revenue from other services (H) is not separated from water service costs thus is deducted to avoid double payment from customers.

The final base price of 50.54 vatu per cubic meter is 8.74 vatu lower than UNELCO's current (Semester 2 of 2015) base price for water of 59.28 vatu per cubic meter. Furthermore, when the current base price is adjusted to take into account the current electricity prices, the adjusted price indicates that the final decision price is 9.61 vatu lower.

6.5 Impact of price change on bills

Table 11 below shows the savings due to price change realised by customers under different meter sizes and consumption.

Table 11: Bill comparison

Consumption (m3)	Size of meter	Fixed charge	Current Price	Adjusted for Electricity Price	Final Decision base price	Reduction in customer charge (adj for electricity P)
15	15	734	1,623	1,647	1,384	-263
45	15	734	3,402	3,451	2,899	-552
75	15	734	5,625	5,706	4,794	-912
150	20	1,181	12,148	12,324	10,355	-1,969
350	25	2,952	31,406	31,861	26,770	-5,091
1,000	30	7,401	93,653	95,008	79,829	-15,179
2,750	40	10,368	252,230	255,879	214,998	-40,881
4,000	150	14,817	367,829	373,150	313,533	-59,617

Note that the adjusted price taking into account the electricity price uses the current electricity price as explained under section 4.2 under Electricity cost. This is for comparison purposes only.

7. Tariff Adjustment formula

Currently an adjustment formula is used to vary the water tariff every six months depending on certain external factors. The current formula used to calculate water prices is unnecessarily complex. The URA has determined in its final decision that the simplified formula as laid out in the preliminary decision should be implemented. Simplifying the formula by limiting the number of input factors to those that cause the most significant cost fluctuations for UNELCO will prove more efficient and timely reflect the costs incurred by UNELCO. The cost factors in the current formula, as well as some alternatives, are reviewed in table 13 below with a conclusion on whether or not the tariff should be indexed to each.

Table 12: Adjustment formula cost factors

Cost Factors	Comment	Conclusion
Electricity price	Electricity is single largest cost of operating the water service. Price can vary significantly between tariff reviews. Utility has limited ability to manage level of cost	Index tariff to electricity price
Wage inflation	Staff costs are significant cost to utility. Current index does not show significant variation. Staff costs can be controlled through effective management.	Remove from tariff formula
Cost of metal products and electronic equipment	Potentially variable. Costs can be controlled through management of procurement	Remove from tariff formula
Exchange rate variation	Potentially variable. Only small cost component subject to currency variation. Can be controlled through management of international procurement and exchange rate hedging.	Remove from tariff formula
General inflation	Not currently included in adjustment formula. Likely to reflect variation in local staff costs and purchases.	Include in tariff formula

In addition to the input cost factors, the URA has decided to include an adjustment for overall productivity improvements in the formula. In the normal course of business, UNELCO is expected to apply technological and management improvements resulting in a gradual increase in productivity. For the purposes of the base scenario, the URA has assumed that improved productivity should reduce the operating costs by 1% per year (X-factor).

The proposed tariff adjustment formula is shown below, to be calculated each quarter:

Equation 1: Proposed tariff adjustment formula

$$P = P_0 \times \left[0.14 + 0.34 \,.\frac{E}{E_0} + (1 - X)^n . \left(0.22 + 0.30 \,.\frac{CPI}{CPI_0}\right)\right]$$

Where:

- P_0 is the Base Price calculated by the Base Scenario, i.e. 50.54vt/cm
- E is the average electricity base price for the preceding three months, weighted by the total kWh consumed per month by the water service (updated quarterly)
- E_0 is 47.71, the current base price per kWh for electricity used in computing base tariff
- X is 1% productivity improvements per year
- n is the whole number of years that have passed since the tariff review (updated annually)
- CPI is the latest inflation index published by the Vanuatu Statistics Office (updated annually)
- CPI_0 is the inflation index published by the Vanuatu Statistics Office at the time of the Final Tariff Order. The most recent CPI issued was for June 2015 and shows a consumer price index of 149.8, this will be used for CPI_0

8. Discussions

Presented below are the Commission's discussion on UNELCO's written submission.

8.1 URA Powers

Under the Utilities Regulatory Authority Act (URA Act) the URA is mandated to ensure the provision of safe, reliable and affordable regulated services, maximize access to regulated services throughout Vanuatu and promote the long term interests of consumers (Section 2 of the URA Act). Additionally one of the primary functions of the URA is to exercise the functions and powers conferred by the URA Act or by any other Act in furtherance of the purposes of the URA Act (Section 12(1) (a)). The URA has been empowered to determine maximum price which may be charged to consumers in relation to any aspect of a regulated service in any place (Section 18(1)). A utility is prohibited from advertising, proposing, claiming or demanding a price in respect of any regulated service which exceeds a determination made by the URA under subsection 18(1) (Section 21(3)).

In order for URA to effectively fulfil its functions, Section 13(1) of the URA Act empowers the URA to do all things that are necessary or convenient to be done for or in connection with the performance of its functions. Section 13(1A) of the URA Act specifically provides that, the URA may require a utility to do those things expressly required by the provisions of the URA Act. Further, Section 13(2) of the URA Act specifically provides that, without limiting the general powers of the URA as set out under Section 13(1), the URA may:

(a) Require a utility to furnish the URA with information in the possession or control of the utility or any of its related entities relating to a regulated service, amongst others,

(b) Require a utility to confer with the URA as to the manner in which it carries on any specified activity in relation to a regulated service, or

(c) Do anything reasonably incidental to any of its powers.

Pursuant to Section 12(2) of the URA Act, the URA must exercise its functions in a way that considers the interests of, and impact on, consumers and utility businesses as well as Government policy.

8.2 Order not inconsistent with provisions of the Water Acts

Section 3 of the URA Act (as amended) states that "*This Act applies to a regulated service to the extent that is not inconsistent with a provision in any concession agreement under the Electricity Supply Act [CAP 65] existing on or before the commencement of this Act or a provision of any other Act*". The 'inconsistent' provision which previously applied to "*any applicable contract*" i.e. the water and electricity concession contracts was amended by limiting it to specified electricity concessions and excluding water concessions from this provision (amendment vide Utilities Regulatory Authority (Amendment) Act No. 18 of 2010).

For the purposes of this Final Decision and Order, the provisions of the Water Supply Act and Water Resource Management Act, as amended till date, (**Water Acts**) were examined.

The Water Acts do not discuss/regulate price-setting for water services provided by a concessionaire. The Water Acts also do not discuss/regulate nor in any way limit the power of URA to set tariff for water services provided by a concessionaire (granted to it under the URA Act). Hence, the Water Acts are not applicable to the issue or implementation of this Final Order. Hence, the Final Order is not inconsistent with the Water Acts or any other applicable Act.

8.3 UNELCO's objection in respect of the Water Supply Act

UNELCO, in its letter dated 15th of July 2015 (**July Letter**), claimed that the proposed tariff is inconsistent with and conflicts with the Water Supply Act. Their objections were reviewed and have been rejected for the reasons set out below.

- Parts 1 and 2 of the Water Supply Act regulate connection and supply of water by Public Works Department to a consumer. Hence, provisions under Parts 1 and 2 are not applicable to this Final Order that sets tariff for supply of water by concessionaire to its consumers.
- Part 3 of the Water Supply Act governs agreements/contracts for provision, development, management and maintenance of water supply within area of concession. Pursuant to Section 22(1) of the Water Supply Act, the Minister (with the approval of the Council of Ministers) has the power to enter into an agreement granting sole concession for the provision, development, management and maintenance of water supply to the public within the area of concession.
- Section 22(2) of the Water Supply Act specifically states that "*The terms and conditions of any agreement or contract entered into under subsection (1) shall be subject to the provisions of this Part*" i.e. Part 3.
- UNELCO has alleged that the Final Order "*derogates from: the Government's rights to enter into the Water Concession under Section 22 of the Water Supply Act.*" UNELCO has not explained how the Final Order derogates the Government's said right. However, the allegation is incorrect. The Final Order sets tariff for water supplied by UNELCO to its consumers and has no impact on the right of the Government to enter into contract and/or award sole concession for water supply.
- UNELCO's reliance upon Section 27(e) to substantiate its allegation is also incorrect. Section 27(e) provides: "*The Concessionaire may exercise all or any of the following powers – (e) to do all other acts which in the opinion of the Concessionaire are necessary to facilitate the proper carrying on of the purposes of the Concession agreement or contract.*" The purpose of the section is to enable the concessionaire to perform reasonable and necessary actions to efficiently supply water to its consumers. It does not empower the concessionaire to step into the shoes of the regulator and replace it. Pursuant to the URA Act, the power to set water tariff rests solely with the URA.

8.4 Return on capital investments

In its submission (July Letter), UNELCO states that it is their contractual right to a tariff which assures it a return on capital investments of 12% (taking into account previous losses) for the remaining period of their concession contract.

In section 5.4 of the Preliminary Decision in the matter of reviewing water tariffs for UNELCO in Port Vila the URA described the rates used for the cost of capital. The same Weighted Average Cost of Capital (WACC) as used in the 2010 tariff review of electricity services provided by UNELCO and determined by the Arbitrator, was used in the Preliminary Decision. In order to provide an incentive for investors, the rate of return should reflect the opportunity cost of their invested capital, in other words the return should be commensurate with the returns the investor could expect should they invest in other opportunities within the market, adjusting for the different levels of risk. The appropriate cost of capital is generally calculated using the Capital Asset Pricing Model (CAPM), which takes into account both the risk free time value of money, and level of risk in a particular investment.

In the last electricity rate- case conducted in 2010-2011, UNELCO's cost of capital was extensively analysed by Staff and UNELCO. Both utilized the CAPM model and their assumptions for gearing ratio, cost of debt, risk free return and risk premium were all extensively discussed. In the end the issue was placed before an Arbitrator. The arbitrator's final determination on the ROR was that a composite return, weighted cost of capital (WACC) of 7.76% was reasonable. This was based on 5.86% real cost of debt, 9.65% equity return and 50% capital structure by the arbitrator

Since that time the interest rates have dropped considerably as well as the risk free rates as indicated by current 10-yr US treasury which stands at 2.16% at the start of August 2015. Similarly there is no indication that risk premium for UNELCO in Vanuatu has increased from previous determination. Therefore as conservative approach staff recommended that same 7.76% overall return on investment should be used which was used in the Preliminary Decision. UNELCO was given the opportunity to provide their analysis and evidence of what the current reasonable return on equity should be. Unfortunately it did not provide any evidence except to say that they are entitled to 12% return on their investment in water assets as per the concession agreement. We note that 12% return refers to UNELCO's own investment. As previously discussed and proposed by the Arbitrator UNELCO's investment should be supported by 50% debt (gearing ratio). Therefore although we disagree that 12% return is warranted, we allow it in this case for the equity return. With this adjustment the resulting composite return on investment (WACC) used in computing the cost of capital is 8.39%, comprising 12% equity and 5.86% debt component.

Table 3 below outlines the Cost of Capital data used to calculate the WACC considered in calculating the Final Order base tariff.

Table 13: Cost of Capital

Cost of Capital estimates		
	Preliminary	**Final**
Gearing ratio	50.00%	50.00%
Equity proportion	50.00%	50.00%
Real return on Equity	**9.65%**	**12.00%**
Real return on Debt	**5.86%**	**5.86%**
Real WACC	7.76%	8.93%

Also it is important to note that working capital is not an investment, rather it is cost of day to day managing cash flow. Typically a business manages working capital by temporarily borrowing from a bank as revolving line of credit at short term borrowing rate. Therefore financing cost assigned to working capital should be based on borrowing costs, in this case 5.86% as used for computing WACC. Again when requested by the staff, UNELCO did not comment nor provide data or analysis or evidence that this is unreasonable for calculating the working capital costs. -

Given the above, the URA has changed the real return on equity to 12% but kept the debt component of the WACC the same at 5.86%. This gives a new nominal WACC of 12.20% and a real WACC of 8.93%.

Furthermore the URA staff calculations show that historically UNELCO has made at least 12% on its equity investments, therefore in this Final Order base tariff, URA has not taken into consideration any previous losses. Commission also asserts that UNELCO is not entitled to recover previous losses if any, since it would be retroactive ratemaking which is not an allowed regulatory practice and was rejected by the Arbitrator.

8.5 UNELCO's allegation that URA has failed to comply with provisions of the Water Concession Contract

In the July Letter, UNELCO has alleged that URA has failed to comply with the provisions of the Water Concession Contract. July Letter states "*No notice of request to review prices has been issued, nor has a commission been formed to determine the tariff. Nonetheless, the Preliminary Decision contemplates that the URA will unilaterally issue a Final Decision to determine the maximum base rate under the Water Concession.*" The allegation has been reviewed and rejected for the following reasons:

- It is reiterated that the Final Order and revised tariff is issued/set by URA in exercise of its powers under the URA Act and not "*under the Water Concession*" as claimed by UNELCO. The rights of the Government under Article 7.3 of the Contract and Article 22 of the Schedule of Conditions (revised by 1998 amendment) have been assigned to the URA under Section 20(2) of the URA Act i.e. Part B of Schedule I. However, in setting the price in this case, the URA has not exercised this right on behalf of the Government.
- Pursuant to Section 3 of the URA Act, the powers of the URA to set tariff are not subject to the provisions of the Water Concession Contract. URA is not obligated to follow the procedure set out in Article 22 of the Schedule of Conditions i.e. issue notice, establish commission or wait till a request is made by Government and/or UNELCO for revision. Rather URA must follow its own established, transparent procedures, public consultation and due process. The power to determine tariff and the manner in which to exercise this power by URA has been explicitly set out in the URA Act, and the URA has complied with it.
- Having said this, it is clarified that the power of URA to set tariff and its exercise of this by issue of the Final Order does not derogate the Government's and UNELCO's right under Article 22. Article 22 gives both parties a right to request for review of tariff in specific circumstances as outlined therein. That request should be made to the URA. The Water Concession Contract was entered into between the Government and UNELCO in 1993. The latest amendment to Article 22 was made in 1998; almost 10 years before the establishment of the URA. Since 11th February 2008 (date of commencement of the URA Act), the power to set water tariff is with the URA. Hence, upon the occurrence of one or more of the events listed in Article 22, the parties have the right to request URA to reconsider tariff, however only URA has the power to determine final tariff that water consumers can be required to pay, which it will do and has done in accordance with the URA Act. The fact that there has been no tariff review since the inception of the concession contract alone is sufficient reason to conduct a review. The actions of the URA are not actions of the Government

nor have been taken on behalf of the Government, hence UNELCO's allegation that this amounts to breach of the Water Concession Contract by the Government is incorrect and baseless.

8.6 Final Order validly issued and legally binding

Based on the reasons set out in this section above, the URA Commission states that it is well within URA's power to issue this Order and implement this revised tariff.

Under the URA Act, the URA is clearly mandated to fulfil certain functions and exercise certain powers. One of the ways in which the URA conducts its activities and exercises its powers is via the Commission issuing orders. All its orders are independent acts of the Commission pursuant to a majority vote, as provided in the URA Act (Section 11(5)). Another party cannot claim to want to be a signatory to such orders or have a deciding vote on such matters. Therefore UNELCO's contention that this is a unilateral action is without merit. Section 37 of the URA Act requires that prior to exercising any powers contained in Sections 14(1), 17(1) or 18(1), the URA must consult with the utilities potentially affected; these sections pertain to issues of safety standards, reliability standards and setting of maximum price.

Commission is satisfied that all parties have been afforded due process and interested parties including UNELCO have received fair hearing in this matter.

9. Commission Order

Findings

Based on the staff analysis, public consultation and UNELCO's input, the Commission finds that:

- The base tariff is fair and reasonable for UNELCO to operate sustainably into the future and is in the interest of the consumers;
- The URA Commission has the power to implement the base tariff under its mandate pursuant to the URA Act; and
- The base tariff is not inconsistent with the provisions of the Water Acts and does not derogate the Government's or UNELCO's right to request for tariff review in accordance with the Water Concession Contract.

The Commission therefore orders that:

- The current base tariff for UNELCO's water services is reduced by 14.74% from the Semester 2 of 2015 level of 59.28 to 50.54 vatu per cubic meter of water.
- UNELCO apply this Final Decision and Order base tariff of 50.54 vatu per cubic meter in its billings on and after the effective date,
- UNELCO advise its customers that the tariff applied is approved by the URA.
- Continue with its Semester Tariff adjustment's applying the new adjustment formula outlined in this Final Order
- The Order shall be submitted for Gazettal. The URA staff shall inform UNELCO and the public once the Order is gazetted.

Effective Date: Allowing for the Gazettal and any Notice of Grievance filed by the utility under the URA Act, the effective date of this Order is November 15, 2015

Notice of Grievance

If the utility is aggrieved by this Order, it may request the Commission to reconsider the decision on issues aggrieved upon. A Notice of Grievance must be submitted within 30 days of the Order's gazettal. The Notice should contain:

- The issue or issues being contested
- A detailed description of any facts or matters supporting the grievance
- Copies of any documents supporting the grievance
- A detailed description of any alleged error of law or fact
- A detailed description of any relevant change in acts or circumstances since this Order

A Notice of Grievance can be addressed to

Hasso Bhatia, PhD
Chief Executive Officer
Utilities Regulatory Authority

The Notice may be:

- Delivered in person at:
  Office of the Utilities Regulatory Authority
  VNPF Compound
  Corner of Pierre Lamy & Andre Ballande Street
  Port Vila, Vanuatu

- Mailed to:
  Case U-0022-14
  Utilities Regulatory Authority
  P.M.B 9093
  Port Vila
  Vanuatu

- Emailed to:
  breuben@ura.gov.vu

If the Commission receives a timely Notice of Grievance, it will conduct a review in accordance with Section 27 of the URA Act. If upon review the Commission determines that the grievance is justified, then it shall revoke, amend or vary the decision on the matter complained of.

Execution Page

CEO and Commissioner

Hasso C. Bhatia, PhD

Date: 18/09/2015

Chairman

Johnson Naviti Matarulapa Marakipule

Date: 18/09/2015

Executive Commissioner

John Obed Alilee

Date: 18/09/2015

Seal of the Utilities Regulatory Authority

UTILITIES REGULATORY AUTHORITY
The Common Seal of

Appendix 1: Summary of assumptions used in calculating the Final Order base tariff

Type	Metric	Base Scenario
Operating Costs	Electricity Costs in vatu	91,293,258
	Personnel Costs in vatu	56,874,275
	Third Party Costs in vatu	58,719,874
	Stocked purchases in vatu	18,236,060
	Non-stocked purchases in vatu	3,200,000
	Taxes and related fees in vatu	3,100,000
Depreciation	In vatu	23,262,184
Cost of Capital	Regulated Asset Base in vatu	31,344,621
	Working Capital in vatu	1,691,423
Provisions	In vatu	0
Article 29 fund	In vatu	3,807,073
Revenue from other goods and services	In vatu	(22,140,000)
Required Revenue	In vatu	269,388,768
Billing losses (bad debt)	Percentage	1.60%
Total customer charges		273,769,074
Demand	In cubic metres	5,416,368
Base Price	In vatu per cubic metre	50.54

Appendix 2: Weighted Average Life of Assets calculation

Year	Gross Book Value used and useful UNELCO funded assets (Vatu) [A]	Depreciation of UNELCO funded assets: Useful life (Vatu)[B]	Average asset life (Years) [A/B]
2009	343,466,395	14,807,604	23.20
2010	385,012,171	17,846,807	21.57
2011	406,224,055	18,262,549	22.24
2012	470,020,106	21,301,115	22.07
2013	509,044,262	21,980,999	23.16
2014	522,169,412	23,262,403	22.45
Average (assumed in Final Order tariff)	439,322,734	19,576,913	**22.45**

Utilities Regulatory Authority

Vanuatu

You can access the U-0022-14 Final Decision and Commission Order, September 2015 on our website www.ura.gov.vu, or by contacting us by telephone (+678) 23335, email: breuben@ura.gov.vu or regular mail at U-0022-14, Utilities Regulatory Authority, PMB 9093, Port Vila, Vanuatu.