

Fichtner Management Consulting

Review of the Tariff Methodology in Water Supply

Extract

Tbilisi, February 18, 2016 | Dr Maria Belova, Nina Negic

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MANAGEMENT CONSULTING

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Fichtner conducted a review of the existing water tariff methodology as well as analysis of best practice for the main gaps which have been identified

Project approach and scope of work (September – October 2015)

	Main steps	Activities
1	Review of the existing tariff methodology in water supply	1.1 Review of the cost structure 1.2 Review of the calculation of allowed profit 1.3 Analysis of the methods for the tariff calculation 1.4 Analysis of other tariff related matters as required
2	Analysis of the best practice tariff regulation and gap analysis	2.1 Compilation of the best practice for tariff setting in water supply 2.2 Identification of the main options relevant for Georgia 2.3 Outlining of the key gaps in the current practice 2.4 International experience regarding gaps

- **Sources for best practice analysis:** European regulators, articles & handbooks, regulatory associations (Energy Regulators Regional Association – ERRA), The International Water Association (IWA), articles and data compiled by International Financial Institutions (IFIs) such as the World Bank and EBRD, utilities' data, Fichtner experience

Critical issues have been identified as a result of the review of the existing practice. Best practice has been then analyzed for each of the key critical issues

Critical issues

(1) Guiding principles

(2) WACC

(3) EU norms and forward looking regulation

(4) Subsidies

(5) Elevation zones

(6) Other: Regulatory asset base, inflation, losses, etc.

Regulation should be based on a number of principles to ensure the high quality provision of services based on a fair and transparent approach

Guiding principles for tariff methodology

Transparency	Cost calculation, tariff setting and decision making must be transparent
Participation	Stakeholders should be involved in the decision making process
Predictability and flexibility	Tariff shall be predictable while adapting to economic, technological & social conditions
Cost-reflectiveness	Tariff design shall reflect the actual costs for providing the services
Non-discrimination	Equal principles and rules for all market players incl. customers and utilities
Economic and resource efficiency	Tariff design shall foster efficient use of water by customers

WACC is an indicator reflecting remuneration that an investor shall receive for its invested capital based on the risk level of the asset and market environment

WACC: International options and applicability

International practice

- WACC is calculated as weighted mix of the cost of debt and the return on equity
- Real WACC is applied by most European regulators: UK, Netherlands, Belgium, Serbia, Kosovo, Greece, Albania, etc.

Determination procedure

- The formula and general principles for WACC calculation shall be described in the regulatory methodology
- WACC has to be updated regularly in order to reflect the changes in the market

Level of WACC

- The actual calculation shall be based on an extensive study, usually by an independent expert and consultations with the concerned utilities
- The WACC level has to be sufficient to attract investments into the sector

WACC calculations must be done in a transparent manner as well as should be updated regularly and should reflect the risks of the market

Critical issues concerning WACC

(1) The WACC calculations need to be done based on a developed and approved methodology and in a transparent fashion in order to make them understandable

(2) The WACC must be updated periodically in order to reflect the changing market situation, i.e. the same WACC is not applicable over a long period of time as the market conditions change

(3) Compared to other investment options, WACC currently applied in Georgian water sector appears to be low and may reflect the local market conditions and risks to a limited extend only

EU norms establish strict requirements which can only be achieved by significant investment into the sector in a step-by-step and strategic approach

EU Norms and forward looking regulation

EU norms

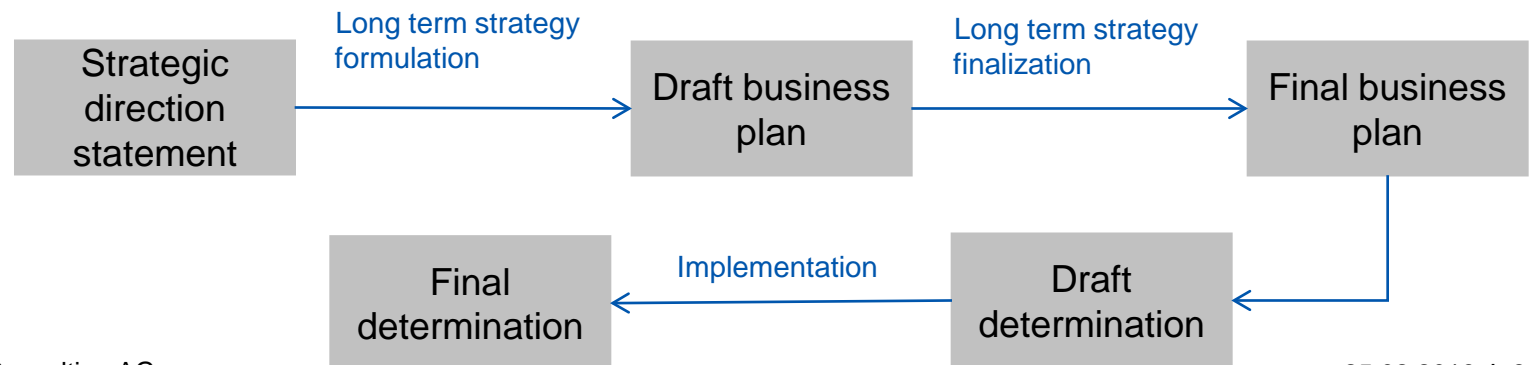
- EU Directive 98/83/EC of 3 November 1998 specifies requirements for drinking water quality as well as planning, regulatory, monitoring and reporting procedures at EU level
- Other relevant aspects include environmental protection requirements as well as provisions for metering

Implementation

- Upgrade of the existing infrastructure and provision of services to the growing number of customers in compliance with established standards is connected to significant investments
- Approximation to the EU standards will require establishment of the favorable institutional and regulatory framework including recovery of investment

Forward Looking Regulation

International regulators commit to the investment plans of the utilities in line with a forward looking regulation approach in order to enable investments and foster long-term development of the available infrastructure



Approximation to the EU norms and implementation of improvements require significant investment and thus introduction of a forward looking regulation

Critical issues concerning EU norms and forward looking regulation

(1) Approximation to the EU norms in the future requires transition from the current to the long-term oriented regulation already today

(2) Long-term business planning and regulatory principles are needed and applicable, especially for short regulatory periods and long-term infrastructure investments required

(3) Options to be discussed and decreed in order to foster certainty, mutual trust and commitment of the water utilities and the regulator

Subsidies are designed to support vulnerable groups and effective subsidy design entails different delivery, timing and funding mechanisms

Subsidies: International options and applicability

Rationale for subsidies

- Subsidies are needed to support vulnerable customers, mostly poor households
- Subsidies are mostly applied in emerging economies, while developed economies exhibit a standard of living which mostly does not justify subsidization

Subsidy Design

Identification of vulnerable groups

- Based on water consumption
- Based on their income levels (budget, normative assumptions, income statements)
- Demand for subsidies

Delivery mechanism and timing

- Cash transfers (direct)
- Voucher schemes (direct)
- Subsidizing utilities (indirect)
- Life-line tariffs (targeted)
- Timing depends on delivery mechanism (yearly or monthly)

Funding

- Government funding
- Cross subsidies (inter-class subsidies)
- Within the same customer class (intra-class)

Internationally cross subsidies are often applied: financially stronger consumer groups subsidize vulnerable groups. Delivery mechanisms depend on the institutional capacity of a country to handle administrative effort while cash transfers are preferable

Subsidies should be targeted at vulnerable groups only. Generally applied cross-subsidies of significant amount set wrong incentives and discriminate

Critical issues concerning subsidies

(1) Subsidies should always be designed to support only certain members of a consumer group

(2) Current cross-subsidies pose a high financial burden onto the commercial customers eventually hindering economic development

(3) Under current circumstances, fast development of the residential customer base and their total water consumption result in a revenue gap for utilities

(4) Outphasing of the cross-subsidies requires a transition period of several years to avoid tariff shocks and allow for consequent change to cost-based tariffs

Elevation charges are used to compensate the increased costs for serving pressure zones with an increased elevation

Elevation charges

Elevation charges

- Elevation charges are additional fees for supplying water to a higher elevation and reflect higher required costs for pumping
- Charges can be explicitly billed to higher elevation customers or can be woven into overall tariff design, whereas the charges are then averaged across all customers

Elevation charges example

Elevation surcharges of a Californian (US) Utility

Elevation Band 1	Pressure zones serving elevation 0 to 61 meters. No pumping required, i.e. gravity flow.	USD 0.00 per 2.8m ³
Elevation Band 2	Pressure zones serving elevation 61 to 183 meters. Pumping required.	USD 0.60 per 2.8m ³
Elevation Band 3	Pressure zones serving more than 183 meters. Substantial pumping required.	USD 1.24 per 2.8m ³

Introduction of elevation charges would impose clear price signals to customers and foster efficient use of water

Critical issues concerning elevation charges

(1) Tbilisi has 5 elevation zones with up to 1000 m of difference which results in significant pumping costs. Averaging of these costs across all consumers is de-facto cross-subsidizing

(2) The consumption in the higher elevated zones is estimated to be higher as compared to city average as those are single family houses which use the water also for gardening purposes

(3) Using same tariffs for higher elevated zones does not foster responsible use of water and does not reflect the real costs of the service

(4) The number of connections within the higher elevated zones are those which grow the fastest which causes increase of the total costs for water supply by GWP

Urgent measures are required in order to foster sector development and establish favorable investment framework

Conclusions

(1) Current methodology shall be revised to allow for calculation of the water tariffs in line with the internationally recognized principles

(2) WACC methodology and calculation shall be defined and updated to allow for sufficient return on investment to attract capital to the sector

(3) Long-term planning certainty shall be established by introduction of the forward-looking approach

(4) Extensive cross-subsidies among the customers shall be eliminated in a step-by-step approach

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