

European Water Utility Management

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Requisite tariffs

Establishing a regulatory tool linking multiple stakeholders' objectives

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Introduction







Can we use a One size-fits-all approach?

Adapt to the unique set of circumstances facing each utility:

- ✓ Utility's operations (current and future costs);
- ✓ History, environmental, socio-economic and legal frameworks;
- ✓ Customers it serves.







Regular regulatory methods, cover mostly the tariff level!

✓ Guidelines or recommendations?

 \rightarrow Lack of compliance...

✓ Regulations?

 \rightarrow Too intrusive and rigid...

✓ Any other way?

 \rightarrow We think yes!







The covered dimensions





The covered dimensions





Dimension: Economic efficiency





Allocative efficiency Economic efficiency refers to the allocation of water to customers promoting the maximization of social welfare.

→Prioritizes uses with highest value to society (e.g., merit uses), and by comparing service costs with the inherent value, discourages the misallocation of economic resources.

Notes:

- ✓ avoid over-investment in a broader context, covering for example, over-capacity and gold-plating;
- ✓ prevention of quiet life and x-inefficiency behaviors while avoiding monopoly rents.

Details: Comparison between unitary price and the 'marginal costs' of water.



Dimension: Environmental sustainability



Financial sustainability Cost recovery Revenue stability

This dimension promotes the suitable balance between revenues from customers and the costs of supply.

→Ability to cover O&M and capital costs, additionally, opportunity costs and economic externalities are also considered.

→Impact levels based on the ability to 'secure' a specific amount of revenue.



Dimension: Financial sustainability



Environmental sustainability

The importance of this dimension relies on avoiding the depletion of critical natural capital, by promoting an efficient use.

Sustainable use (resource conservation)

→Connected to the ability to provide incentives to save water.











Dimension: Social concerns





Dimension: Governance



Governance

The importance to measure how those objectives are reached, comparing the administrative and compliance costs with the inherent benefits achieved, and whether customers understand and accept the tariff structure.

Administrative simplicity

Clearness

- → Related to the administrative costs, the requirements that a tariff may impose in operational levels.
- → Mostly related to the understanding and acceptance of the water tariff.





Descriptors and value functions



Cost recovery criterion

- ightarrow 20 % over Totex coverage
- \rightarrow Totex coverage
- \rightarrow O&M cost coverage

 \rightarrow Below O&M cost coverage





Descriptors and value functions

Sustainable use criterion

- \rightarrow Over 2x the incentive between price and consumption
- \rightarrow Increasing incentice (until 2x) between price and consumption
- \rightarrow Consistent relation between price and consumption

- \rightarrow Decreasing incentive between price and consumption
- \rightarrow No relation between price and consumption









How to measure a tariff's suitability?





- Evaluate the tariff suitability by resorting to descriptors.
- Promote evaluation beyond criteria description and suggestions.
- Promote tariff structure improved practices.

Is it enough?



Multicriteria model

Creating a composite indicator, but how?

$$V(a_i) = \sum_{j=1}^n \lambda_j \times V_j(a_i) \quad \text{with,} \quad \sum_j \lambda_j = 1$$

where:

- V(a_i) is the global score of tariff a_i;
- λ_j is the weighting coefficient of criterion j;
- $V_j(a_i)$ is the local score of tariff a_i considering criterion j.

And what should be the "weight" of each criteria?







Relative importance of criteria



Using a constructive approach (resorting to decision conferencing? Experts?) to:

- 1. Identify two distinct levels for each criterion (e.g., Neutral and Good)
- 2. Proceed to pairwise comparison



Multicriteria application



Setting weights!











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