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Prolegomena

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1. INTRODUCTION

Water is an important natural resource for life. Some of the main causes of water related problems around the globe include water scarcity and climate change. As water demand increases these problems get even worse. Drinking water supply systems suffer from high water losses of about 20-40% of Europe's available water, resulting in both economic and environmental consequences. More specifically, water losses result in inefficient use of water and energy resources as well as negative economic, technical, social and environmental impacts. To confront with water losses, efficient and sustainable management of water distribution systems is imperative. Tools, techniques and strategies for the analysis, monitoring, planning and operation of water distribution networks can be applied to reduce water losses. At the same time the Water Framework Directive 2000/60/EC requires that drinking water pricing policies should be in line with the "polluter pays" and "full water cost recovery" principles. In this context the water value needs to be acknowledged, the water cost to be defined and the water price to be set up. Water losses cost needs to be an important parameter when setting up socially fair water pricing policies.

2. THE SPECIAL ISSUE – THE TOPICS

In the context of the Special Issue on "Urban water pipe networks sustainable management: Acknowledging the value, defining the cost, setting the price of water", the following themes and topics are addressed:

Theme A: "Urban water systems management"

- Simulation and optimization techniques of water pipe networks
- Day-to-Day Management & Performance evaluation
- Confronting the "Repair or replace" dilemma
- Demand prediction and management
- Water pricing: Implementing the WFD - evaluation & progress
- Privatization of Water
- Climate change and its impacts
- Raw & waste water treatment plants
- Water and Energy towards a low carbon economy
- Case studies & Experimental Results

Theme B: "Water losses"

- Water loss management
- Apparent Losses management
- NRW reduction techniques
- Water metering
- Acoustics: new challenges

- Bench-marking vs. re-inventing the wheel
- Decision Support Systems
- Technical vs. financial aspects
- Performance Based Service Contracts
- Case studies and lessons learnt

3. THE SPECIAL ISSUE – THE SCIENTIFIC PAPERS

The scientific papers included in this special issue are the following:

- "Annualizing metered volumes in water balance" (Renaud et al., 2015a).
- "Real-time monitoring of water distribution networks" (Agathokleous et al., 2015).
- "Comparative study of different methods to assess average pressures in water distribution zones" (Renaud et al., 2015b).
- "The influence of transition from vegetation to gravel bed and vice versa in open channels using the PIV method" (Keramaris and Pechlivanidis, 2015).
- "Decision support tools: Review of risk models in drinking water network asset management" (Large et al., 2015).

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