SMART METERING AND BILLING: INFORMATION TO GUIDE HOUSEHOLD WATER CONSUMPTION

Ariane Liu[1]*, Damien Giurco[1], Pierre Mukheibir[1], Graeme Watkins[2]
[1]Institute for Sustainable Futures, University of Technology, Sydney, NSW
[2]MidCoast Water, Taree, NSW
*Ariane.Liu@uts.edu.au

ABSTRACT

Until now householders have received limited information on their water consumption patterns. Smart water metering presents far more detailed information resources and the opportunity to transform the existing flow of information to consumers for improved efficiencies in water usage. However, a balance is needed between delivering current minimal information and the full detail smart metering can provide on time of use and end-uses. It is critical to understand what information is of value to householders. This paper presents results from a recent householder survey at MidCoast Water (NSW) which improves our understanding of the customer perspective on water consumption information.

INTRODUCTION

Until recently, householders have had limited knowledge of water consumption beyond their quarterly paper bill, which has traditionally displayed little more than the total volume of water consumed over the period, pricing information and the total amount due. More recently many water utilities have begun to introduce additional information in their water bills. This new information typically includes bar charts depicting past consumption in monthly or quarterly blocks for the previous year. Other utilities have gone further to include some means of comparison with other households according to size e.g. the number of occupants or the dwelling size.

Recent development in smart water metering technology make far more detailed information available at end-use level, creating new opportunities for water utilities to manage water more efficiently. If correctly harnessed, the technology and information resources offer the potential to transform urban water management for both water utilities and their consumers (Giurco et al. 2010). Indeed through tailored water use information, householders can more readily identify opportunities for increased efficiencies. Significantly, any changes in consumption patterns and behaviours which lead to efficiency gains in water usage can make important contributions to the achievement of a sustainable urban water future.

The wealth of new water consumption information that can be acquired by water utilities through investment in smart metering technology can be used internally for water demand forecasting and planning. However, to maximise benefits on the consumer side, a key challenge is to understand what additional information is of interest and value to consumers. Within the energy sector, a number of studies have tested the impact of increased information through smart metering on household electricity consumption (Abrahamse W. 2005; Fischer C. 2008). In the water sector, still more work is required to understand the role for additional information. In particular, it is essential to gain a deeper understanding of the voice of the customer in order to strike a balance somewhere between providing the current minimum levels of information and the breadth and depth of information that can be presented through smart metering. Key questions that have yet to be explored include whether customers want more detailed information and if so, what information they are interested in. In parallel, water utilities considering smart metering technology and information also need to carefully consider what their underlying goals are vis-à-vis its consumers. A move towards improved customer relationship management might be envisioned; or more complexly, the empowerment of consumers through increased access to information to enable water saving behaviours. There are naturally both costs and benefits in using smart water meters and in providing additional information to consumers. However, the potential benefits are more likely to be realised through a clearer understanding of customer needs.

METHOD

The Institute for Sustainable Futures at the University of Technology, Sydney, Griffith University and MidCoast Water are collaborating on an Australia Research Council project from 2012 to 2015 which investigates the role of intelligent water metering in a sustainable urban water future. The project was established to gain a better understanding of the intersection between water consumption, access to information, technology and behaviour practices and will explore the hypothesis that households are likely to reduce their water consumption through the increased availability of relevant and detailed consumption information.