PR24 and beyond: Future challenges and opportunities for the water sector

Biography

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Carmine Ornaghi is Professor of Economics at the University of Southampton. His papers have been published in leading scientific journals, including Energy Economics, Journal of Applied Econometrics, the International Journal of Industrial Organization and the Journal of Industrial Economics. In the last five years, Prof Ornaghi has been Principal Investigator in an ESRC funded research aimed at evaluating the impact of water metering on water usage and co-Investigator in an EPSRC funded research aimed at evaluating the impact of behavioural interventions on energy conservation in public offices.

Executive Summary:

In December 2020, the Water Services Regulation Authority, Ofwat, published a document titled "PR24 and beyond: Future challenges and opportunities for the water sector" with the aim of promoting a debate around future regulation of the water industry. The document highlights key challenges that will face the sector over the coming years and decades, which Ofwat invited expert views on under a set of twelve different questions. This document presents my responses to Question (2) and Question (3). The views presented are based on two research papers which I co-authored. The first paper, Ornaghi and Tonin (2021), investigates the impact of metering on water consumption. The second paper, Anskin *et al*. (2021), studies the effect of home visits on water consumption. Full references are provided at the end of this document.

The following recommendations are made:

- In order to help companies achieve long-term goals set out in Ofwat's strategy, I recommend that Ofwat encourages water companies in England and Wales to start a *compulsory universal metering programme* in their supply areas as well as the distribution of water-saving devices, as complementary tools for managing water demand.
- In order to ensure that companies offer affordable services for all, now and in the long-term, Ofwat should encourage water utilities *to distribute water-saving devices* and consider *subsidising the purchase of white goods* for low income families. Ofwat should also work with Ofgen to encourage water and energy companies *to coordinate their strategies to tackle the problems of Water Poverty and Energy Poverty simultaneously.*

Question 2. How do we best regulate to help companies to achieve long-term goals such as adapting to climate change, reducing leakage, improving water efficiency and delivery of net zero?

Metering can play a vital role in addressing the problem of leakage on customers' own pipes and in incentivising people to reduce water consumption. Our study of the impact of the Universal Metering Programme on water consumption in South-East England (Ornaghi and Tonin, 2021) found that metering led to an average decrease in water usage of 91 litres, from 403 to 312 litres, per household per day. This 22% reduction is substantially higher than the 12% that was found in previous small-scale studies and which represented the reference point for the industry.

These findings represent a crucial endorsement of governmental policies encouraging water metering to reduce water usage. The Water Industry Act 1999 (and associated secondary legislation) grants permission to water utilities to roll out universal metering in all England and Wales. However, it is at the discretion of regional utilities whether to implement such programmes, and focus has mainly been on areas in 'serious water stress'. The large reduction in average consumption after meter installation which has been observed in South-East England suggests that it would be advisable *to extend compulsory metering to other areas of the country*.

In our related study on the impact of home visits on water consumption in South-East England (Anskin *et al*., 2021), we found that water-saving devices (such as low-flow shower-heads, tap inserts and flush converters) have stronger and more persistent effects than water conservation tips, thus suggesting that conservation programmes may benefit from redirecting their attention towards technological solutions. Ongoing programmes currently implemented in different areas of England, such as Smarter Home Visits in London and the Thames Valley region, can achieve reductions in water consumption at lower costs if they focus predominantly on distributing and installing water-saving devices.

Following the findings from the two studies above, my recommendation is for Ofwat to launch a campaign to encourage water companies in England and Wales to use *metering* and *water-saving devices* as complementary tools for managing water demand.

Question 3. How do we encourage companies to ensure services are affordable for all, both now and in the longer term?

Paragraph 44 of "The government's strategic priorities for Ofwat" published by the Department for Environment, Food and Rural Affairs, DEFRA, in July 2021 states that "*Ofwat's regulation of the industry should strengthen its focus on protecting vulnerable customers*". Furthermore, Paragraph 46 says that "*Water companies should proactively manage customer debt, by raising awareness of the support available to household and non-household customers, and effectively target support offerings before customers fall behind on their payments*."

Following on from the findings outlined above relating to the effectiveness of water-saving devices in reducing water consumption, Ofwat should encourage water utilities to increase the distribution of such devices among low income households, in particular in those areas where meters have been installed and households have switched to a metered tariff. The installation of water-saving devices can partially offset the negative impact of metering on water bills of low-income households, thus mitigating the problem of water poverty as well as helping to obviate bill account arrears.

A second and related way to address the challenge of water poverty would be to give vouchers to less affluent households who may struggle to pay water bills, which can be used to purchase new water/energy efficient white goods, such as washing machines and dishwashers, or pay for a "major" plumbing retrofit, in particular low-flow toilets, considering that around 25% of water is used for toilet flushing. This approach would allow low income households to save both water and energy, whilst safeguarding them from making restrictive changes to their behaviours in order to save money. This policy would be complementary to the Social Tariff and has the advantage of preserving incentives to use water efficiently for metered households.

Accordingly, Ofwat should encourage water utilities *to distribute water-saving devices* and consider *subsidising the purchase of white goods* for low income families. Furthermore, it should be noted that the issue of water poverty is commensurate with Energy Poverty. Given that water-saving devices or more efficient white goods can lead to savings in both water and energy, Ofwat should work with Ofgen to encourage water and energy companies *to coordinate their strategies to tackle the problems of Water Poverty and Energy Poverty simultaneously*. For instance, water and energy utilities could design home visits aimed at reducing both water and energy usage and share the cost of subsidising new technologies.

References

Ornaghi C. and Tonin M. (2021) "The effects of the universal metering programme on water consumption, welfare and equity" - Oxford Economic Papers, volume 73, 1, pp. 399-422 (https://doi.org/10.1093/oep/gpz068)

Anskin E., Ornaghi C. and Tonin M (2021) "Technology vs information to promote conservation: Evidence from water audits". Tinbergen Institute Discussion Paper 21/014 (https://papers.tinbergen.nl/21014.pdf)