Science for Environment Policy

Informing householders of leaks can prevent water loss

By identifying leaks using 'smart' water meters, and then encouraging householders to fix the problem, water companies can reduce the volumes of wasted water dramatically, new research suggests. In a case study in Australia, households reduced water loss by up to 91% after being informed of leaks in their homes and offered a rebate on repairs.

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Water scarcity is a serious problem worldwide and methods of reducing loss are becoming increasingly important. This study investigated whether informing customers of suspected water leaks would encourage them to fix the problem. The study focused on Hervey Bay, an Australian city which suffers regular droughts. In 2007, the local water company installed a smart meter system in all 22,000 customer households, identifying leaks in approximately 4% of these.

Once households were identified as having a suspected leak, they were targeted with one of three communication strategies:
Group A: 332 households were sent a basic letter saying the property may have a leak together with a fact sheet about smart meters and checking for leaks.
Group B: 40 households were sent a detailed analysis of their MNF water use (Minimum Night Flow measurements, taken at intervals during the night) and how this indicated they might have a leak, together with the fact sheet.
Group C: 100 households did not receive any information.

After four weeks the meters were read again for all groups. Households in group A were then sent a second set of communications containing specific information about the MNF water use, possible leaks and another fact sheet. Group B's second communication advised there was still a leak and households were offered an AU$100 (€70) rebate on repairs. Four weeks after this, Group A then received a third letter saying there was still a leak with the offer of the AU$100 rebate. If the leaks had been fixed, group A and B received thank you letters and graphical displays of the MNF water use before and after the leaks.

Over three months, the households in group A reduced water loss by around 88% with the average MNF dropping from 4009 litres per hour (L/h) to 494 L/h after communication. In group B water loss was reduced by approximately 91%, from 1356 L/h to 120 L/h after the communications. In contrast, the average MNF rate actually increased by approximately 52% in group C, from 1839 L/h to 2799 L/h.

After the experiment, the researchers conducted a survey of 146 householders from groups A and B. The majority of these respondents had found at least one leak, and 46% had employed a plumber to repair them. Seventy percent of the leaks cost less than AU$200 (€140) to repair. Almost all (92%) of the respondents felt that a detailed analysis and graphical display of water leaks, along with information on the cost of not repairing them would be most likely to prompt consumers to fix the problem. Nearly three-quarters of respondents also favoured a financial incentive to fix the leaks.