Science for Environment Policy
DG Environment News Alert Service
SPECIAL ISSUE
EUROPEAN COMMISSION

Special Issue 33 22 May 2012

Water efficient household appliances prove effective

Rebates and exchange programmes for showerheads, toilets and washing machines can produce significant water savings, according to a US study. The study observed a 6 to14% reduction in household water demand for the first two years after these efficiency programmes were introduced by a water authority in Florida.

Residential customers account for the majority of water demand in urban areas, mainly through household appliances, such as showers, toilets and washing machines. The potential water savings of more efficient versions of these appliances is well acknowledged, and householders can be encouraged to switch to these through rebates and exchange programmes. Programmes such as these are seen as more publicly acceptable than other water management policies, such as price increases or water restrictions.

The study aimed to 'fill the gap' between estimates and observations of water savings by analysing water demand data from households over a four-year period after rebate and exchange programmes had been implemented by a water authority in an urban area of Florida. The initiatives were: a high-efficiency showerhead exchange, a high-efficiency toilet rebate and a high-efficiency washing machine rebate. 1829 households participated in total.

Impacts on water demand (as measured from household bills) were analysed over the four-year period and subsequent water savings were calculated by comparing the figures to those from householders who had not participated in the programmes.

During the first two years of implementation, customers with these high-efficiency appliances experienced a significant drop in water demand. For the washing machine programme, water savings were 6.5% and 14.2% in the first and second year respectively. The lower water savings in the first year suggest that the participants were getting used to the new appliances.

For the toilet programme, there was no significant change in the first year, but 15.6% savings in the second year. These large changes in the second year may be thanks to increased awareness of water conservation benefits, perhaps causing behavioural changes in water use.

For the showerhead programme, savings were 9% and 8.2% in the first and second year respectively. The low variation between years in showerhead programme, compared to the other programmes, may be because people take showers regularly and there was evidence of offsetting behaviour, for example, participants may take longer showers than before they had the efficient showerhead.

The impact of the high efficiency appliances continued through the third and fourth years of study, but to a lesser extent. The efficient toilet programme had the greatest potential for water savings, followed by the washing machine programme. Around 4.6% of the customers participated in more than one programme and, as a result, this group experienced the highest savings.

Source: Lee, M., Tansel, B. & Balbin, M. (2011) Influence of residential water use efficiency measures on household water demand: A four year longitudinal study. *Resources, Conservation and Recycling.* 56:1-6.

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Theme(s): Environmental technologies, Resource efficiency, Sustainable consumption and production, Water