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Abstract Title: Now or never? The importance of immediate energy use feedback

Abstract Text:

High hopes have been placed on feedback interventions as a scalable and cost-effectiveness instrument to reduce resource consumption. Smart metering trials in which participants received aggregate feedback on their electricity consumption, however, led to reductions only ranging between 2 and 5%. In an earlier project, we have shown that the focus of feedback on a single, energy-intense behavior (in our experiment: hot water consumption in the shower) might be a more effective strategy: In a randomized controlled study with 697 households, the treatment group has reduced their energy and water use in the shower by 22% over control. With projected savings of 440 kWh and 8500 liters per household and year, the intervention has had a substantially larger effect than an electricity smart meter trial with the same pool of participants. In another randomized controlled trial with 720 households, we go one step further to gauge the value of real-time information: While participants in the real-time condition receive feedback on their energy and water consumption during the shower, the deferred feedback condition receives the information as soon as they finish the shower. Our main study (720 households, two months) ends in April 2015, yet the results of our pilot (70 households, one month) already indicate that the effect in the real-time condition is more than twice as large as in the real-time condition. These findings can be a game changer for smart metering programs: If the mere delay of feedback by a few seconds already has such a tremendous impact on the effect size, we need to rethink the way feedback is delivered in tomorrow's smart metering programs.