



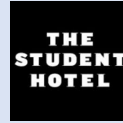
# Saving energy when others pay the bill

## One page summary Amphiro project

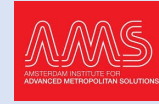
### Challenge

- Many energy conservation interventions use a financial incentive. This is not relevant in cases where others pay the bill, such as energy use at work, in hotels and in residential rentals with all-inclusive utilities
- Innovations that provide feedback on energy and water consumption are a promising intervention to target energy and water conservation in scenarios where others pay the bill

### Main partners:



### Funding partners:



### Research questions

- How can we motivate people who don't pay water and energy bills to use less water and energy without the use of financial incentives?
- How is the water usage of these users affected by intervention with a technological innovation that offers real-time feedback on water usage?

### Innovation

- The Amphiro device is installed in showers; provides real-time feedback on water temperature and volume of water used (in L) or energy consumption (in kWh)
- An image of a polar bear on ice is displayed; the iceberg melts as more energy/water is consumed
- Bluetooth used to transfer data collected by the devices



### Experiment

- Amphiro devices and measurement equipment were installed in 256 rooms at TSH Rotterdam and Den Haag
- Measurement equipment recorded, at 10-15 minute intervals, data on water usage and energy consumption in the room
- Study was conducted in three stages: 1. Pre-intervention (baseline data) 2. Intervention 3. Post-intervention (one month after device use)

### Results and impacts



Per room, per year:

-20% = - 3760L

-215 kWh

60 kg



Per room, per year:

€18,49

Earn back period 3 years /

ROI 33%



+ awareness guests

Long-term behavior change →

continued water use -10%, 1

month after removal device

### Conclusions

This study has:

- Measured the effectiveness of a technological innovation on guest water-saving behavior at TSH
- Gathered detailed information on individual energy and water use of students and short-term hotel guests at TSH
- Resulted in new scientific knowledge and practical insights for organizations who want to stimulate savings in cases where users don't pay for utility bills
- Demonstrated that interventions that provide real-time feedback about energy and water use are a way to significantly reduce costs, carbon emissions and contribute to the education and behavior of guests

### Score card

Ease of implementation



Impact



Return on investment



Process

