

Study suggests real-time feedback in hotel showers could help the tourism industry cut water use

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Credit: Augustinus Martinus Noppé from Pexels

Providing hotel guests with messages about water use while they are taking a shower can reduce the length of time they spend showering by

more than 25%, a new study has shown.

In a first-of-its-kind [study](#), published in the *Journal of Travel Research*, an innovative smart water saving technology was installed in tourist accommodation [shower](#) cubicles and provided continuous feedback to the user about their shower length.

The technology was used in combination with persuasive messages on stickers located in the vicinity such as "will you beat the clock?," "[water conservation](#) starts with you," and "make a difference!" with a view to test their effectiveness.

The trial monitored the lengths of more than 17,500 showering events from hotels in the United Kingdom, Denmark, and Spain.

Analysis showed that shower water runtime was 77 seconds quicker (25.79%) in the group that received continuous, real-time eco-feedback than in the group that received no feedback—the equivalent to around 10 liters of (hot) water per shower.

With people using up to 250 more liters of water per day while staying in hotels than they would in their homes, the researchers behind the study hope it could lead to better strategies for tackling [water use](#) in the [tourism industry](#).

The study was carried out by researchers at the University of Surrey, University of Plymouth, and Universidad de Alicante in Spain. Dr. Pablo Pereira-Doel, Lecturer at the University of Surrey and Water program co-lead at the Surrey Institute for Sustainability, is the study's lead author.

He said, "Many tourist hotspots worldwide face unprecedented water stress levels, and we are trying to do our part to help the tourism industry use less water. Our research demonstrates that guests in tourist

accommodations take shorter showers with enabling technology, reducing water, energy, and carbon emissions.

Kayleigh Wyles, associate professor in psychology, says, "It's becoming more apparent that we need to conserve how much water and electricity we use for showers and baths generally. There are numerous campaigns asking us to reduce our shower time, but these findings are important as they show that carefully worded messages—and making people aware of their behavior—can have a real and positive impact.

"As we approach what will likely be another busy tourism season here in the South West, people and organizations that want to help conserve energy and water can hopefully use these findings to help transform society and be more sustainable."

Continuous, real-time eco-feedback is a technique that involves providing consumers with real-time information during a particular behavior with the particular purpose of reducing their environmental impact.

The [smart technology](#) used in this research—created by Danish company Aguardio—was equipped with sensors to detect showers, to provide continuous feedback on their length, and to send the shower data to the researchers via Wi-Fi, with a newer version of the technology now using Bluetooth.

Through the sensor unit, the technology continuously detected water sound, motion, temperature, and humidity. Based on these variables, it used an algorithm to identify showers in [real-time](#) and their duration was fed back to the in-situ display unit in the form of a timer. The shower data collected was sent regularly to the Cloud via Wi-Fi.

More information: Pablo Pereira-Doel et al, Reducing Shower Duration in Tourist Accommodations: A Covert True Experiment of Continuous Real-Time Eco-Feedback and Persuasive Messaging, *Journal of Travel Research* (2024). [DOI: 10.1177/00472875241245045](https://doi.org/10.1177/00472875241245045)

Provided by University of Plymouth

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