

# Instant water heater offers energy and cost savings

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Traditional water heaters take time to reach preferred temperatures, thus wasting water and energy. A new instant hot water solution, developed through the EU-funded RAPIDHEAT project, successfully optimised heating and control technologies to develop a lightweight low thermal mass heater that provides full temperature output within two seconds of switch-on.

'Here in Britain we drink approximately 165 million cups of tea per day, along with 70 million cups of coffee,' says RAPIDHEAT project coordinator Peter Duncan from Cressall Resistors in the UK. 'That's a lot of hot drinks and a lot of [hot water](#). Many of us rely on vending machines and those who do know the difference between a coffee that

has been made with freshly boiled water and one that contains pre-heated water.'

In addition to vending machine suppliers, white goods (domestic appliance) manufacturers and hot water tap providers also stand to benefit from the innovation. An instant hot water solution installed in the home offers customers a water and energy saving solution; as Duncan points out, the average UK household wastes 24 litres of water a day waiting for the shower to heat up. 'That's five per cent of your water bill that you're pouring down the drain,' he adds.

The high power density of the RAPIDHEAT solution also means the heater is smaller and lighter than other technologies on the market, which makes it useful for applications where space is limited, such as in the home. The consortium was keen to ensure that the heater would be protected from dust and water infiltration, enabling it to be installed in a variety of environments ranging from the home to the office and the factory.

Another advantage is that by removing the need for hot water reservoirs – the heater does not use a supply of preheated water – the heater cannot run out. Water heaters capable of producing large volumes of 'instant' hot water are needed in many commercial, industrial and public buildings and also in process and manufacturing industries that have intermittent demands for large volumes of hot water. These are cases where peak demand for hot water is many times the average, and the cost of heat losses from the hot water stored to meet that demand can be significant.

'There are a number of applications that the team simply did not foresee at the outset of this project,' says Duncan. 'How we should take this opportunity forward is currently under discussion, and we are now looking for partners interested in developing the project further and

integrating the technology into applications that require instant hot water.'

The project was officially completed at the end of August 2015, and the project consortium has since compiled a one-page guide explaining the space, heat and energy savings that can be made by installing the RAPIDHEAT instant hot water technology.

**More information:** For further information please visit the RAPIDHEAT project website: [www.rapidheat.eu/](http://www.rapidheat.eu/)

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