Pioneering engineers at De Montfort University have created an intelligent heating device that learns householders’ energy habits and could lead to home energy savings of up to 20 per cent – without compromising comfort.

The energy-saving ‘Wattbox’ is part of an innovative approach to energy-efficient home improvements supported through the EPSRC and E.ON Strategic Partnership. The funding also forms part of the Research Councils UK Energy Programme, and has led to the formation of a company, www.wattbox.com, to commercialise the research.

Peter Boait, Wattbox director and senior research fellow at De Montfort University, which is coordinating the multidisciplinary research, says: "We all know we can save money by switching off lights and turning the central heating down a notch, but research has shown that householders often struggle with their home heating controls, such as timers and thermostats, because they are too complicated to set correctly.

'More heat' or 'less heat'.

During the research, a working prototype of the Wattbox was fitted to a UK home and provided overall energy savings of 15.7 per cent during the winter time and 34 per cent during summer months.

The Wattbox heats water just before it is usually needed, preventing energy waste and displaying a red light to tell householders when hot water is available. If the automatic system does not satisfy, users can see how much more or less energy they use by pushing a button for ‘more heat’ or ‘less heat’.

Installation
Installation is simple too, the Wattbox simply replaces the boiler’s timeclock and thermostat and is connected using existing wiring schemes. In addition to a smart meter display, which registers data such as electricity and gas consumption; the company provides an optional user display for home computers and mobile phones.

"Wattbox helps people get the most out of green investments they make in their homes too, such as solar panels, and helps them capitalise on the recently-announced feed-in tariffs for small-scale renewable schemes. It’s also possible to retrofit the Wattbox, making it suitable for all houses, not just new ones."

Image courtesy of De Montfort University.

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20% POTENTIAL SAVING IN HOUSEHOLD ENERGY CONSUMPTION