

Research to pinpoint power-hungry appliances that could help cut home energy bills

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New research by The University of Nottingham and energy company E.ON could help people to save money on their energy bills by identifying which of their household electrical appliances are using the most power.

Smart meters, which could help consumers to [save money](#), are planned to be installed in every UK home by 2019. In readiness, the Nottingham academics are developing a range of [mobile apps](#) to monitor energy use and make small changes to cut [electricity bills](#).

The work by a research team from The University of Nottingham is being carried out as part of E.ON's Thinking [Energy project](#).

Dr Benjamin Bedwell, research fellow in the University's School of Computer Science, explained: "Previous research has shown that it is often difficult to change our day-to-day habits to save energy, and that the resulting savings may seem tiny. In contrast, significant savings—both in finance, convenience and [carbon emissions](#)—might be made by identifying and addressing troublesome [appliances](#)."

The way people use power-hungry appliances in the home has a major impact on [energy bills](#) and carbon footprints. Data collected by in-home sensors can help to better understand the energy use of these appliances, and whether small changes to the way they are used might allow people

to save energy and money.

Researchers aim to show how a range of innovative services can empower consumers to use and maintain their existing appliances more effectively to help save money and reduce carbon emissions, and also to upgrade them as they become inefficient.

The research will use data collected when E.ON partnered with Milton Keynes Council and the National Energy Foundation to install smart home technology in 75 homes in Milton Keynes last year. Using this data the research will focus on developing services that are easy to use and understand, while also providing real savings to the customer.

While facts and figures provided by appliance manufacturers may assure people of appliances' economic and green credentials, the reality is often very different, especially when appliances are used in everyday environments and have aged.

Dr Bedwell said: "Signs in the data gathered on the energy consumption of the appliances can provide advance warning of depreciation or failure of an appliance, allowing us to proactively maintain, and help avoid a costly breakdown later on. A detailed record might also allow us to spot any changes to our home that have an impact on the performance of our appliances."

However, the data the [smart meters](#) produce only provides insights into how the home as a whole, or its inhabitants collectively, consume energy. To make targeted recommendations for behaviour change, maintenance or purchasing, it is necessary to have more detailed data on energy consumption. The smarter plugs used by people in the Thinking Energy trial allow just that.

Chris Rimmer, E.ON New Technologies Programme Manager, agreed:

"Customers find it hard to make good decisions as they rely on the data given to them at the time of purchase. Through the real-time data provided in the Thinking Energy project and the analysis carried out by the University's research team, we hope to make it easier to understand if and when that old freezer should be replaced, and prove that it makes a difference to your [energy](#) bill."

Provided by University of Nottingham

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