Using energy data to control usage, manage costs and help the environment

The Government supported smart meter innovation to help small businesses control energy usage, manage costs and help the environment.

Smart meters unlock the potential of energy data. They provide insight about businesses' energy consumption that enables consumers to control energy use and manage costs. Smart meters are essential for the upgrade of Great Britain's energy grid, helping to pave the way for new services and technologies and a low carbon future.

To support the rollout of smart meters, the Government funded the development of smart energy management innovations to help small businesses turn energy data into tailored energy management actions.

AND Technology Research (AND TR), **Element Energy** and **Hildebrand** were funded to develop innovations designed to give retail businesses the knowledge and capability to become more energy efficient. The main benefits delivered through these innovations were:

- Saving money on energy bills
- Increased understanding of business operations and costs
- Increased ability to manage and monitor energy use
- Ability to identify energy waste
- Becoming more environmentally friendly

The innovations offered the following features:

Alert Energy Management System (AEMS) is a dashboard and mobile app that tracks and visualises energy consumption for users and provides 'push' alerts via mobile phone when there is unusual or changing energy activity. AEMS also provides users with energy saving insights and includes functionality to set energy budgets and performance targets.	Energy Comparison & Advice Tool (E-CAT) is a web application that monitors energy data and presents it to users at half hourly intervals. It shows a comparison of energy consumption with organisations of a similar type and size ('benchmarking') and provides energy saving tips and recommendations tailored to the user's business.	GlowPro is a range of applications (web and mobile) each of which is designed to support the very different functional roles people perform within a business. GlowPro uses energy data in conjunction with analytic modelling to help businesses identify operational and energy efficiency opportunities.
Developer: AND TR	**Developer: Element Energy**	**Developer: Hildebrand**

How can smart energy management innovations benefit your business?

Here are some of the benefits the retail businesses experienced from piloting the innovations:

Saving money on energy bills

> [E-CAT produces a graph of] your energy usage over 24 hours and I noticed on ours that the overnight usage wasn't tailing off in line with businesses that are similar to ours … The till was left on, the lottery machine was left on, the Post Office counter was left on, the storeroom lights were left on. So, knock them all off overnight, instant [cost and energy] saving.

Steve Bulmer, owner of Reepham Post Office in Norfolk, piloting E-CAT (Element Energy)

> It's important to keep on top of what money we're spending; electricity is [..] fairly big in terms of one of our outgoings. I think it's quite easy to let it get away from you, if you're not keeping an eye on it. […] I would've probably had that water heater on all day, not thought about switching it off, but if that's on overnight [for] a couple of days, then that's a lot of money, and you could potentially be doubling your bill for the month […] So, it's been very important [to help identify this].

Dominic Keogh, owner of Albert's Dog Grooming in London, piloting GlowPro (Hildebrand)

Ability to identify energy wastage

> Once we realised just how much the ovens were using, it then made me look at the whole business and go, 'Well, in that case, what don't we need on? What are we turning on out of habit, rather than because we need to use it? […] We've got overwrap machines and vacuum packers and things. Where we'd normally turn them on as soon as we get in, now we turn them on when we need them, [and] as soon as we're done with them, turn them off.

Mark Scrace, owner of Quality and Excellence in Epping, piloting AEMS (AND TR)

Increased understanding of business operations and costs

> If I'm going to create a new product and it requires [using] the oven and I need to know how long it takes us to cook it, then I'll look at the kilowatts and say, 'Well, that product takes me two hours to cook, it's going to cost me X amount of electricity to cook that product,' so I have to build that into my costings.

Mark Scrace, owner of Quality and Excellence in Epping, piloting AEMS (AND TR)

Increased ability to manage and monitor energy use

> [Regarding an E-CAT function to compare energy usage to other businesses] "My goal is just to play it as a game and go, 'Right, okay, I've got to stay lower than that [other business].' Because that feels good, not overly serious.

Martin Sommerville, owner of By Our Hands We Make Our Way Workshop in Nottingham, piloting E-CAT (Element Energy)

> It is an accurate usage. When I'm negotiating new deals for different suppliers they'll say, 'How much [energy] do you use?' I'm going to tell them accurately because the data is on my phone. I haven't got to go back through all the records of all the meter readings and add it all up. I can just see because there's the total figure, that's how much I use.

Steve Bulmer, owner of Reepham Post Office in Norfolk, piloting E-CAT (Element Energy)

Becoming more environmentally friendly

> The fact that we are trying to be very energy efficient … it suits our brand image, because people almost expect it. It helps to say we are constantly monitoring our [energy] use.

Martin Sommerville, owner of By Our Hands We Make Our Way Workshop in Nottingham, piloting E-CAT (Element Energy)

More about the innovations piloted, including evaluation reports and insights for innovators can be found here: https://www.gov.uk/government/publications/non-domestic-smart-energy-management-innovation-competition.