

A SMARTER WAY to consume energy?

With energy costs soaring and the political landscape taking on a distinctly green hue, smart meters have been touted as an effective way to kill two birds with one stone.

Many experts believe that smart meters will allow customers to seize control of these escalating costs and help the government meet stringent environmental targets.

Research from Energywatch tells us that gas and electricity bills are soaring. In 2003, the average gas bill was £330 and consumers were typically paying £242 for their electricity. At the end of 2007, the two figures had risen to £573 and £375 respectively.

Many experts believe that smart meters will allow customers to seize control of these escalating costs and help the government meet stringent environmental targets. The basic argument is this: because smart meters identify energy consumption in more detail than traditional meters, consumers will be able to adjust usage patterns to reduce total consumption and slash their bills.

Consumers are also likely to enjoy added functionality, with meters that interface to other devices in the home and a wide variety of payment options.

Consumer control

Mark Powell, Fujitsu's Utilities Partner, believes that householders would welcome the opportunity to analyse energy consumption a little more closely.

"At the moment, a meter just sits in the house and records the number of units you consume," he says. "Once or twice a year, somebody pays a visit and works out how many units you used in a given period of time. They then translate this figure into a simple charge."

"There are two problems here," he claims. "Firstly, consumers are often underpaying or overpaying, because they are effectively paying an estimate."

"Secondly, a lot of consumers are paying an average price for total consumption that makes no reference to exactly when they are using the power. If you are somebody who uses a lot of energy at night, for example, you will be charged the same price per unit as somebody who uses their energy during the day, even though the cost of generating power over night is significantly lower."

It is feasible, for instance, that a householder could save £80 by shifting consumption of one particular appliance from 9pm to 10pm each evening.

Smart meters would address this dilemma by collecting consumption data on a more regular basis. Specialist energy management programs would interpret this data and send out helpful advice to users. It is feasible, for instance, that a householder could save £80 by shifting consumption of one particular appliance from 9pm to 10pm each evening. An automatic email could let the consumer know and potentially inform them of government incentives for following the advice. Powell also expects to see more “smart homes” in the near future.

“Effectively, these homes would allow the meter to control appliances. For example, if the meter was wired into a control system in the washing machine, it would turn it on at the point at which the price and the carbon consumption were at their lowest,” he suggests.

Environmental impact

While price is of course a major reason for adopting smart meters, it is perhaps environmental pressures that will eventually give this technology the impetus it needs. Under the Kyoto Protocol, the UK is tasked with reducing emissions of six key greenhouse gases by 12.5% relative to the 1990 level between 2008 and 2012. It was with this target in mind that the government discussed mandating the rollout of smart meters in its ‘*Meeting the energy challenge*’ white paper.

But Powell believes there are barriers to overcome before smart metering truly comes into play. The most significant of these is the cost of replacing meters up and down the country.

“There are around 40 million electricity and gas meters in the UK and they tend to last for around 20 years. The wholesale replacement of these traditional meters would be a daunting and extremely expensive task,” he says.

“And it is a competitive market – not a monopoly – so you cannot simply tell people to undertake a job like this,” Powell adds. *“It may be that incentives will be needed to encourage suppliers to throw their weight behind the smart metering movement.”*

There is no doubt, however, that smart meters have a bright future globally. Already, in Italy, Enel SpA has given smart meters to more than 30 million customers, in an undertaking that began in 2002. The company has calculated that a 5% reduction in usage by 2.5 million households could result in annual savings of 306,125 tonnes of CO₂.

Similar projects are gathering pace elsewhere in the world and there is now real hope that the energy industry is on the cusp of an exciting new era. ■

WHAT NEXT?

To find out more about the potential of smart meters, email Ask Fujitsu at askfujitsu@uk.fujitsu.com.