

What is a smart meter?

'Smart meter' is a catch-all term for a modern, innovative meter which offers customers clearer information about the energy they are using. This could range from a simple addition to a basic meter, allowing it to display consumption in pounds and pence, to a high-tech version which sends meter readings direct to suppliers or helps you keep track of the carbon emissions your energy use is producing.

Most energy meters are still using technology which dates back to the 1960s, so new meters – which take advantage of modern technology – could bring real benefits to modern households.

However, smart meters in the home are still at an early stage. It is therefore important for Ofgem, with industry and consumer bodies, to build up an accurate picture of how

smart metering may bring benefits – as well as assessing the costs involved in replacing and updating current meters.

Ofgem is powering the smart metering debate, to separate the myths from the facts.

What are the advantages?

Smart meters can offer customers clearer information about their energy consumption, such as how much energy they use and when they are using it.

This gives customers more ability to control their energy use, which can save them money as well as helping them protect the environment.

They also have a whole range of other possible benefits:

Energy efficiency

Modern meters can display energy consumption in pounds and pence so customers can see at a glance how much money they are spending. They often display this information in a separate place from where the meter is kept – in the kitchen for example.

More advanced meters can use technology to 'talk to' electrical appliances around the home and record the amount of energy they use. People can see the direct link between the energy used and the cost involved. Advanced meters can also control the amount of energy a house uses – for example, turning off lights and running washing machines and dishwashers at night when electricity is cheaper.

Arming customers with better information about their energy use can help them be more energy efficient. For example, they may look at ways of cutting back the amount of overall energy they use, or try and use less energy at times of peak demand, such as early evening, when it is more expensive.

What are the advantages? (continued)

Microgeneration

Smart meters can also help boost microgeneration such as solar panels, wind turbines and electricity-generating boilers.

Smart meters are needed to ensure that customers can meter the amount of extra energy they are generating and sell any surplus back to the electricity grid.

Cutting emissions

Widespread use of smart meters could therefore help the environment because:

- Large uptake of microgeneration would dramatically reduce the need for electricity from major CO₂ emitting power stations. It would also help to smooth out peaks in demand for electricity which would in turn reduce emissions from power stations.
- By encouraging customers to adopt energy efficiency measures and use less energy, this will also help reduce emissions.
- Smart meters could also show how much carbon a household was emitting and this could make customers more aware of the impact of their energy use on the environment.

What are the disadvantages?

Smarter meters inevitably cost more than current meters – and the more sophisticated the model the higher the price.

Also, at the moment there is no detailed evidence to suggest that customers in Great Britain will reduce their

Security of Supply

Once customers are aware of how much energy they are using and when they use it, there could be a reduced demand for energy at peak (expensive) times. In emergencies some smart meters could be used to limit the amount of energy customers consume.

Accurate Billing

Smart readers eliminate the need for manual meter reading, as they can send accurate readings direct to the supplier. This would bring an end to estimated billing.

Fuel poverty

Many fuel-poor customers use prepayment meters which are more expensive and less reliable to run than standard credit meters. A high-tech meter could be a better way of helping these customers budget as it would include additional information about the money they were spending and would also be less likely to break down.

A more reliable meter would reduce the cost of providing prepayment meters which would also benefit customers.

energy usage on an ongoing basis, even if they had access to information on how much energy they were using and how much it was costing.

Microgeneration units such as wind-turbines allow people to generate power for their home. Any surplus electricity is measured by the smart meter and sold back to the electricity network.



Widespread use of smart meters and microgeneration units together could help reduce Co2 emissions by limiting the need for electricity from major power stations.

The simplest smart meters would clearly display the amount of energy used in pounds and pence. More advanced ones could use technology to 'talk to' electrical appliances and record the amount of energy they use.

Smart meters could also encourage people to be more energy efficient in the home. For example, by purchasing energy saving light bulbs and not leaving electrical appliances on standby.

Another example of a microgeneration unit is a domestic combined heat and power boiler which uses waste heat to generate electricity.

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The story so far

Some European countries such as Italy are already installing smart meters in the home.

And in the UK, smart meters are already used by industry, where meters are read electronically every day in gas and every half hour in electricity. Many businesses also use

these meters to keep track of their energy consumption, which helps them use energy more efficiently.

But UK energy suppliers have been slow in taking up the innovative metering solutions available to domestic households.

What Ofgem is doing

In February 2006, Ofgem launched a consultation aimed at unlocking the potential of smart metering for all domestic gas and electricity customers. We invited response from industry and consumer bodies.

This will help Ofgem set its own future policy on smart meters and a paper will be published in 2006 which will set out proposals for a way forward.

Ofgem will be working with government, energy suppliers, meter manufacturers, electricity and gas

network operators and consumer groups such as energywatch.

Ofgem has also looked at the different types of meter available, and will continue to analyse their pros and cons. Where other countries are using or plan to use smart meters Ofgem may monitor the development to give it a clearer understanding of the costs and benefits to consumers.

Conclusion

Smart meters could bring many benefits to customers but Ofgem needs to understand the issues in greater detail before any decision is taken.

Ofgem is working on behalf of UK customers to separate fiction from fact and will work with relevant industries and organisations to ensure that consumers get the best deal from the metering debate.

But one thing is certain: that advances in technology have the potential to bring changes to how we use and view domestic metering in the UK. However, there is unlikely to be a one size fits all approach which would suit all customers. For, example it may be more cost effective to install meters that can be read remotely in rural areas than in towns and cities.

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