

Smart meters: Putting consumers in control of their energy

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The rollout of smart meters to all homes and smaller non-domestic premises will mean a visit to over 27 million homes and 2 million non-domestic sites. Department of Energy and Climate Change (DECC) and Ofgem have now published a Prospectus for consultation setting out their proposed approach to delivering the benefits smart metering will bring.

► How will smart meters help consumers?

Smart meters will give consumers the information to make intelligent choices about their energy consumption. At the moment, the only information most consumers receive about their energy consumption is via a bill that can arrive months after they have actually consumed the energy. Even then, this bill can be based on information that is estimated. With smart meters, consumers will get a bill based on actual usage.

In addition, all smart meters will come with a separate in-home display (IHD). This will provide consumers with near

real-time information to allow them to monitor their household's energy consumption. Consumers will choose where their IHD is located to allow them easy access to the information. The information will be displayed in pounds and pence as well as in a visual form that will be easier for consumers to understand.

By showing how much energy is being used and how much it's costing, smart meters can help households cut down energy consumption and make savings.

► Benefits for consumers

Smart meters have the potential to deliver the following benefits to consumers:

- better information can help consumers cut energy use
- smart meters end the need for estimated bills and the need to be in when the meter reader calls
- consumers will benefit from more choice in tariffs, for example time of use tariffs offering cheaper electricity during the night when demand for energy is lower
- in due course switching will become quicker and easier – days rather than weeks - increasing the competitive pressure on energy suppliers
- make switching between payment methods easier, i.e. switching between credit and prepayment modes using the same meter
- smart meters will give much clearer information, allowing consumers to compare competing tariffs more easily
- smart meters could detect problems with a consumer's electricity supply, and
- smart meters will make it easier for suppliers and third parties to offer consumers tailored energy efficiency advice.

► Other uses for smart meters

Smart meters will also allow householders to take advantage of other potential benefits. As all smart meters should be able to “talk” to other appliances within the home, like the IHD, there is potential for the following benefits:

- consumers will be able to buy their own smart appliances which will be able to “talk” to their smart meter, e.g. automated household appliances will be able to link to smart meters to run more economically i.e. at night when off-peak electricity is cheaper
- greater automation of household appliances through smart meters will increase consumers’ control over the energy they use in their home, and
- consumers could monitor their energy usage over the internet, making information accessible via computers and smart phones.

► Tackling climate change

Initial estimates by DECC are that smart meters could save around 34 million tonnes of carbon dioxide emissions over a 20 year period as people become more aware of the energy they are using.

This is important as households in Britain are responsible for 26 per cent of the UK’s energy use and carbon dioxide emissions. Some of these emissions are due to inefficient use of energy. For example, the Government estimates that over £900 million is wasted every year by leaving appliances on standby.

However, reducing household emissions is only a small part of the role smart meters can play to help Britain make the transition to a low-carbon economy. Smart meters will enable the development of smarter grids, which allow networks to be run in a more efficient and cost-effective way.

The low carbon economy of the future is likely to include:

- more renewable generation which by its nature is variable in its output
- increasing electrification of transport and heat
- greater uptake of microgeneration, and
- the development of smarter grids.

Smart metering will play an important part in making these key features of a more sustainable economy a reality.

As energy supply becomes more complex with greater amounts of renewable generation and microgeneration, the need to manage our electricity networks in a “smarter” way will become more pressing. Smart meters will give network operators much better information about energy use on their networks and are therefore a key enabler in the development of smart grids.

Electrification of transport will also require smart meters. Electricity is more expensive during the day time while demand is highest, and cheapest at night when demand is lower. Smart meters will allow consumers to access cheaper off-peak tariffs to recharge their cars saving consumers money and reducing demand on the grid at peak times.

► Benefits for the energy market

Smart meters will also generate benefits for energy suppliers, such as:

- reductions in the costs to service customers: no need for meter readers, and reduced complaints from customers about inaccurate bills
- more accurate measurements of consumption will give suppliers a clearer picture of the amount of generation needed to supply their customers

- a reduction in energy theft through smart tamper alarms.

Ofgem and the Government expect these reduced costs to be passed on to customers due to the competitive pressure of the GB retail energy market.

► Rolling out smart meters to consumers

Installing smart meters in over 27 million homes and over 2 million non-domestic premises will be a major challenge for the energy industry. Of equal importance will be helping consumers make the most of their smart meters and IHDs to help manage their energy consumption better.

Suppliers will be responsible for the rollout of smart meters to their customers. The Prospectus proposes to allow them flexibility in the initial stages to focus the rollout on those consumers who are most interested in having a smart meter. We expect suppliers to explore ways of working with local authorities and other trusted third parties who can play a valuable role in promoting consumer awareness and engagement in smart metering and supporting vulnerable

consumers. Consideration will be given to whether additional measures to deliver this should be introduced in the later stages of the rollout.

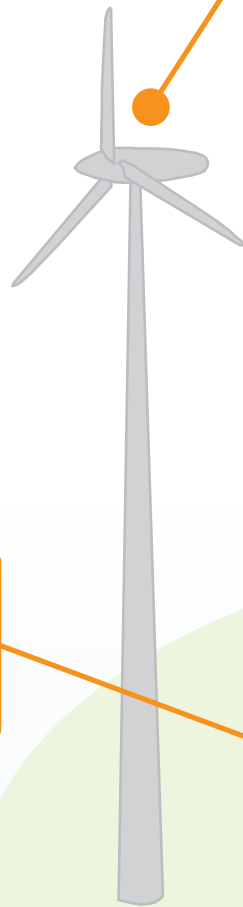
Energy suppliers will be set ambitious targets to ensure that the roll-out of smart meters occurs quickly and cost effectively and could face penalties if they fail to meet these targets.

It is vital that consumers have a positive experience when their smart meters are fitted. To help ensure high standards are maintained, suppliers will be required to establish a code of practice around installation visits. We will also ensure that the installation visit is not used for unwelcome sales purposes.

Potential uses of Smart Meters

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

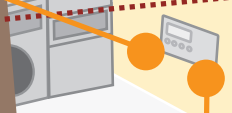
Smart meters can warn appliances have been left on



Automated household appliances will be able to link to smart meters to run more economically

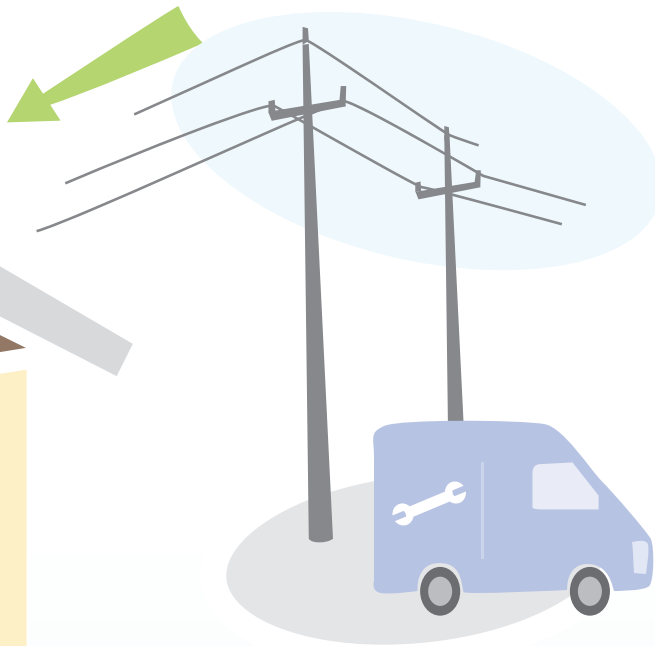
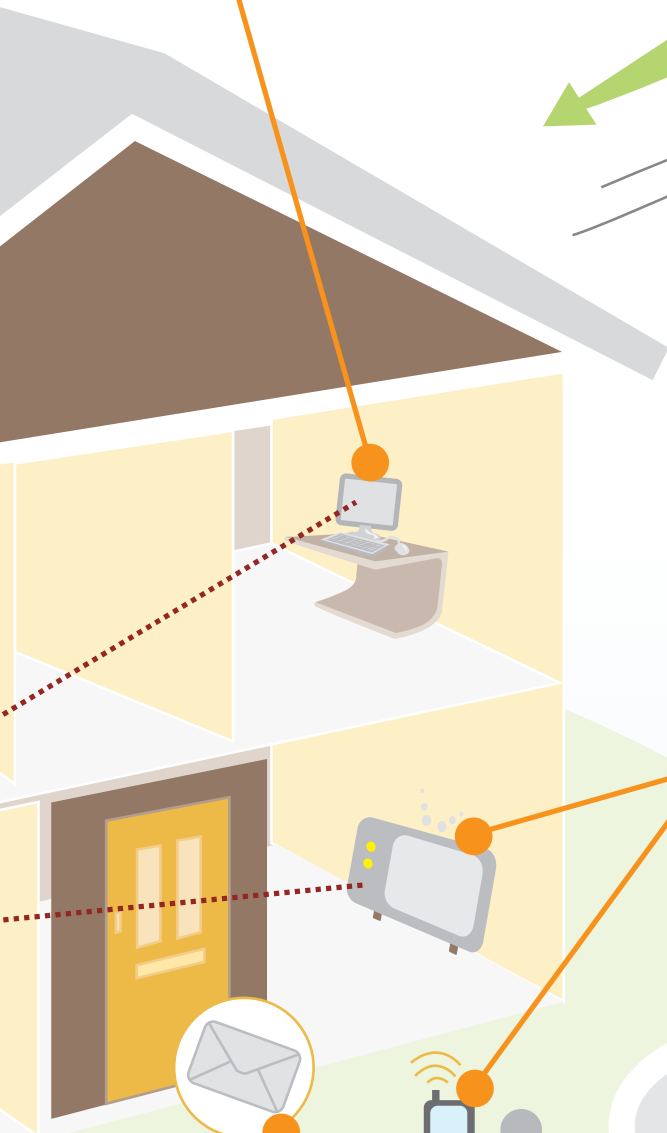
Smart meter – measures energy consumption and can interact with other appliances, i.e. customers can opt for a contract which involves turning down their electricity demand, when prices are high

In Home Display device (IHD) provides customers real-time information on their energy use recorded by the smart meter



householders that
left on standby

Smart meters could provide information to help smarter grids – i.e. to alert the distribution company to a power cut in the middle of the night when consumers would not be aware of it allowing the company to fix the fault more quickly



Consumers may also be able to choose to monitor their energy consumption through an internet connection via their TV or mobile phone



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information about
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Smart meters would
end estimated bills



Smart meters could ensure consumers got the cheapest off-peak tariff so they could charge their electric car at night

► Consumer protection

Consumers' interests are at the heart of our approach to the delivery of smart meters, and consumer protection will need to keep pace with technological change. Ofgem intends to introduce a package of measures in spring 2011 to provide for the continued safeguarding of consumers' interests. Some suppliers are already starting to install smart meters: the spring package will help ensure that vital consumer protection is in place to deal with these early movers.

Strong existing rules provide consumer protection, and suppliers will still have to abide by these rules. Ofgem closely monitors compliance and has the powers to take enforcement action if suppliers break these rules.



► Data protection

DECC and Ofgem will ensure that appropriate safeguards are in place to protect the data collected by smart meters. We will look to build on safeguards already in place, notably the Data Protection Act 1998, to develop a privacy policy for smart metering data. The Prospectus sets out the work that will be done to ensure that there are no compromises when it comes to the security of the smart metering system.

A Privacy and Security Advisory Group has been set up to assist the Programme in developing this critical work. The general principle proposed is that consumers should be able to choose how their consumption data is used and by whom, except, for example, where data is required by suppliers to bill consumers.

► Costs

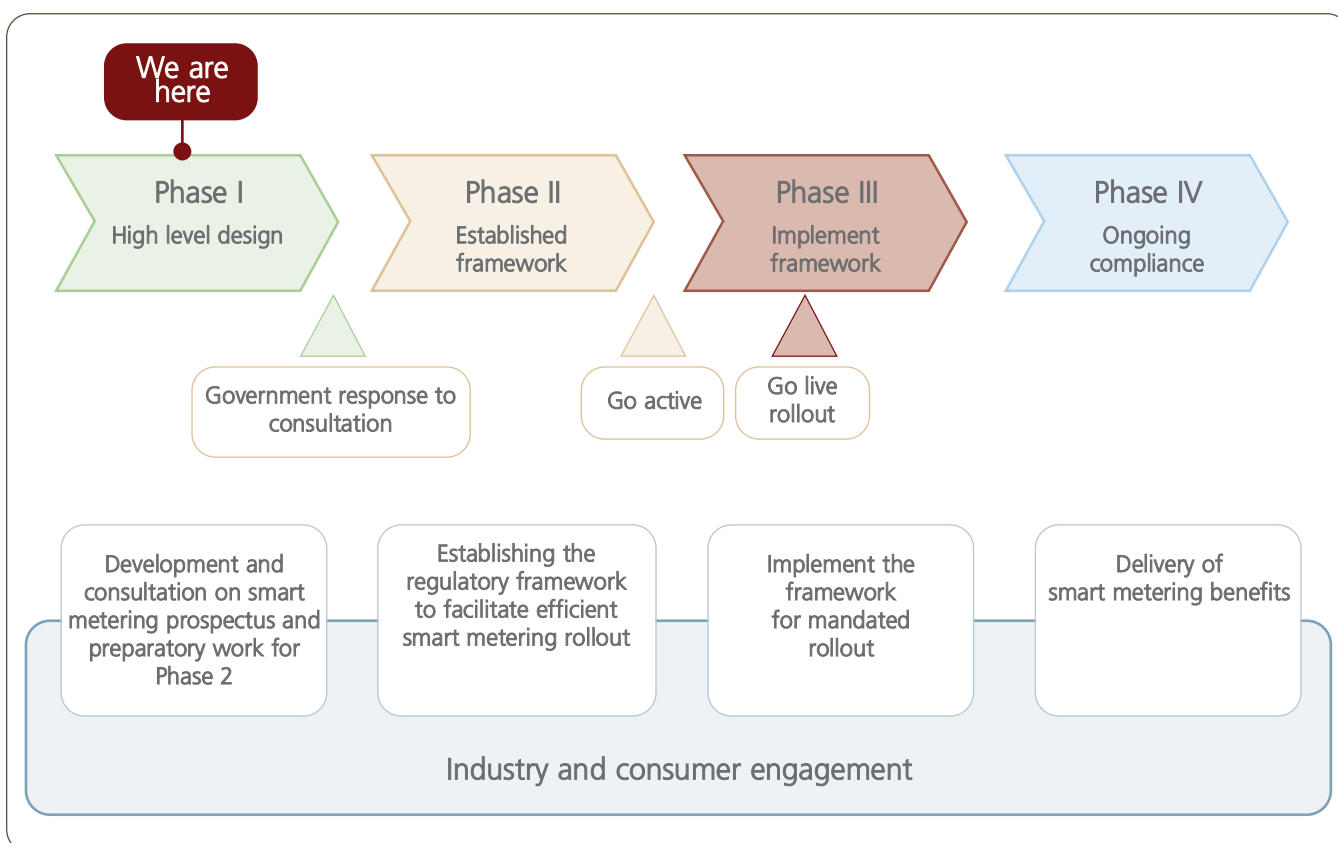
Suppliers will not be able to charge consumers upfront fees for smart meters. Where they pass through costs, those costs will be treated like other elements of supply, e.g. meter reading and environmental levies, and will be included in bills. DECC's overall cost/benefit analysis estimates that the cost of delivering smart meters, estimated at £10.05 billion will deliver benefits of £15.04 billion.

It is estimated that by 2020 an average consumer will be saving around £14 a year on their gas and electricity bills, as they reduce their energy usage in response to the better information provided by smart meters. Some consumers may save considerably more.

► Next steps

DECC and Ofgem will now be managing a detailed consultation exercise with stakeholders. Priority next steps include the introduction of additional consumer protections in spring 2011 and developing technical specifications for the

smart metering system. This is so that the mandated rollout of smart meters can begin from mid -2012. This target will be subject to the outcome of the prospectus consultation.



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