

# Smart electricity meters

A roll-out programme to introduce smart electricity meters into consumers' homes starts in 2012

By Geoff Cronshaw

The department of energy and climate change is planning to start a roll out programme to introduce smart electricity meters into consumers' homes in 2012. The programme is expected to run through until 2020 with the aim of helping customers to reduce their energy bills.

The smart meter will give customers information on energy consumed via a visual display and be capable of sending metering information to the energy supplier regarding the electricity consumed by the customer without the need of a meter reader.

This should put an end to estimated bills. It will also give customers information on any energy sold back to the energy supplier where the customer has a microgenerator installed such as a wind turbine or solar panels. (PV)

## What is a smart meter?

A smart meter is an electricity energy meter that incorporates a communications unit. The meter will measure the energy consumed and also measure any energy exported to the electricity network (where the consumer has micogeneration, such as a wind turbine or solar photovoltaic panels). The big difference is that the smart meter does not require a meter reader to visit the premises.

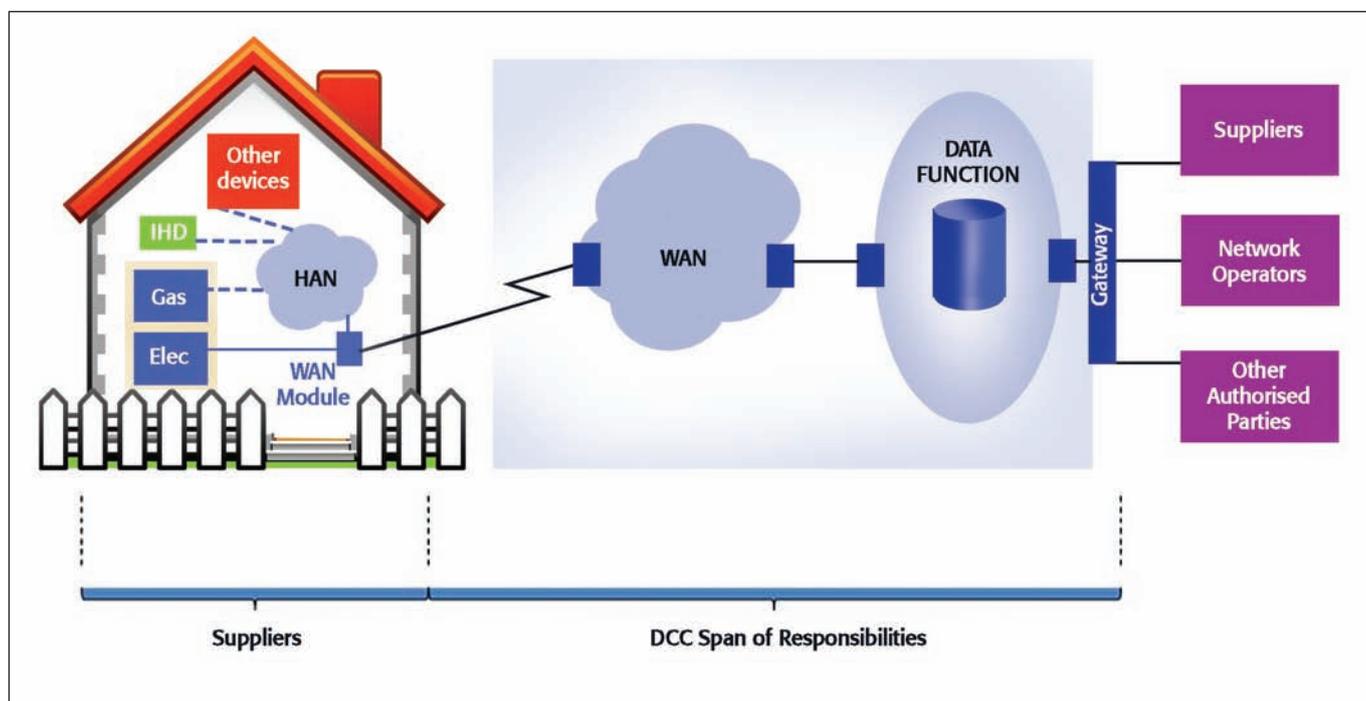
It is understood that smart meters will use wireless technology to communicate between the meter and the communications hub within the premises. To transmit the meter reading data to the energy supplier a number of communication options such as radio, power line transmission (PLT), or mobile phone technology could be used. It is expected in most cases, however, that mobile phone technology will be the



Consumer display-unit



Smart-meter installation



Typical configuration from Energy Networks Association

option used. A smart meter system may also be capable of controlling the consumers load in the future by sending signals to consumers appliances to switch off at peak times etc. It is also expected that the smart meter will be capable of providing flexible tariffs.

#### Who will install the smart meters?

Energy suppliers are responsible for the installation of the smart meters but this work may be carried out by their meter operators. The Smart metering roll out programme is probably the largest project ever undertaken within the electricity industry. It is estimated some 47 million meters (gas and electricity) will have to be changed and some 28 million homes will have to be visited.

The Energy Networks Association (ENA) has created a Smart Metering Operations Group to deal with the coordination of distribution

issues related to the installation of smart meters. The Energy Networks Association (ENA) represents the interests of its member companies who operate the national and regional networks for energy to transport gas and electricity into UK homes and businesses. The smart-metering roll-out programme is expected to commence in 2012 and it is hoped that a minimum of 60 per cent of installations will be complete by 2017 according to the ENA.

In order to achieve this the ENA anticipates that there will be a need for more training. The ENA is carrying out a coordination role and is planning an agreed process of installation with meter operators, as well as agreed meter installer checklists and processes, together with documented risk assessments for various installation types, defect reporting and rectification process, and an agreed process for inspection of distribution-owned equipment.

The Energy Networks Association has anticipated a wide range of operational issues in order that these can be catered for by the organisations responsible for the smart-meter installation. The operational issues include: asbestos meter boards; identification of service position faults; damaged distribution owned equipment; polarity issues; damaged meter boxes; fused neutral cut outs and other metal clad cut outs; lateral and rising mains issues; replacement of meter tails; earth connections; and signs of overheating, etc. There may also be issues relating to data communication and possible issues with the consumer's electrical installation itself.

#### What effect will the IEE Wiring Regulations (BS 7671:2008) have on the installation of smart electricity meters?

Systems for the distribution of electricity to the public (such as metering equipment) are outside the scope of the IEE Wiring Regulations

(BS 7671:2008). The distribution of electricity to the public is controlled by the Electricity Safety, Quality and Continuity Regulations 2002 (as amended) published by the Department of Business, Innovation and Skills (BIS). Therefore the issue of smart metering is not within the scope of the wiring regulations.

However, it is important to point out that meter tails from the electricity meter to the consumer unit are part of the consumer's installation and the IEE 'On Site Guide' gives guidance on this area.

Further information can be gathered from:  
 Department of Energy and Climate Change  
 Business Innovation and Skills  
 Energy Retail Association  
 Energy Networks Association