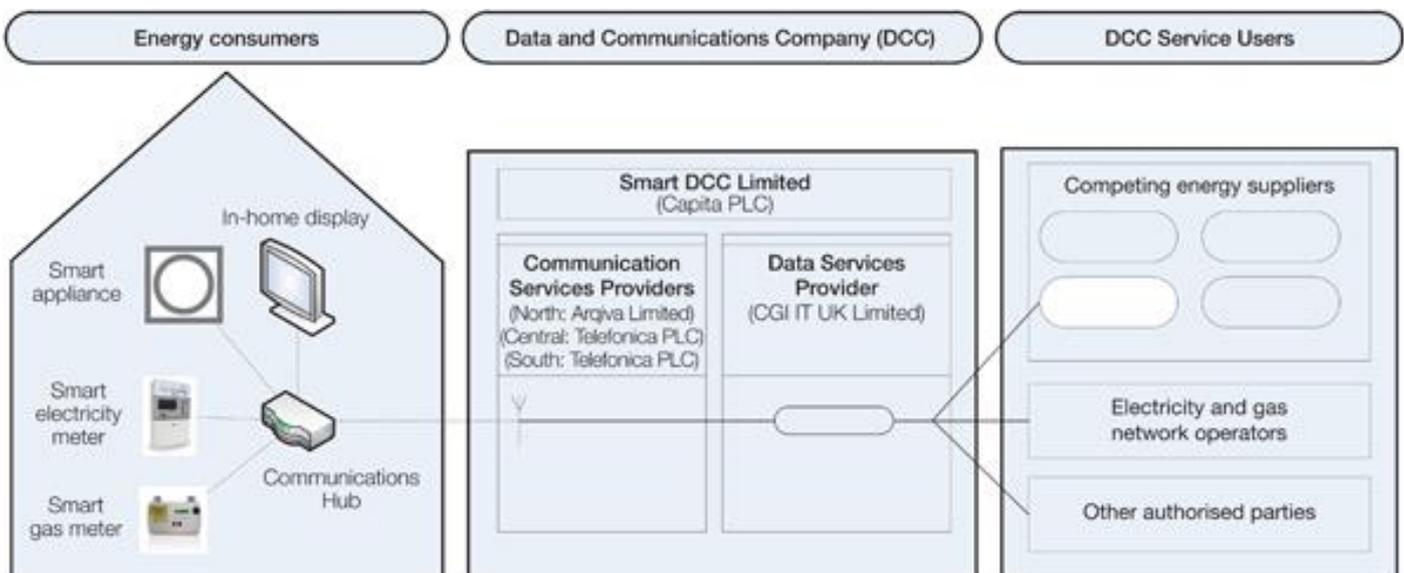




The Smart Metering System

This leaflet explains how the smart metering system will work from 2016, when a new shared smart metering national infrastructure will be in place. Some energy suppliers are already offering smart meters using their own systems and technologies.

The diagram below illustrates the main parts of the smart metering systems showing the equipment and communications within energy consumers' homes. It shows the organisations that will use the information provided by smart meters (DCC Service Users), and the system provided by the Data and Communications Company (DCC) which will link these organisations with the smart meters.



Equipment and communications within energy consumers' homes

The smart metering equipment installed by energy suppliers will normally consist of a smart electricity meter, a smart gas meter, and a communications hub (which will typically sit on top of the electricity meter). Energy suppliers will offer all domestic customers an In-home Display at no upfront cost as part of the installation process. These devices are explained below.

■ Smart electricity and gas meters

Existing electricity and gas meters in consumers' homes will be replaced with smart versions. Unlike traditional meters, they automatically send meter readings to energy suppliers, and support new functions including enabling smart appliances and time of use tariffs.

■ In-home Display

The In-home display will allow consumers to see what energy they are using and how much it is costing in near real time. The display can also show information about the amount of energy used in the past day, week, month and year. This will help people to understand and control their energy consumption.

■ Communications hub

The communications hub has two functions. Firstly it allows the smart meters and In-home Display (and other devices which consumers may wish to use) to communicate with each other over a Home Area Network, in a similar way to wireless computer networks (Wi-Fi). Secondly it provides a link to the Wide Area Network which allows information to be sent to and from meters by energy suppliers, energy network operators and energy service companies.



Organisations that will use the information provided by smart meters (DCC Service Users)

Consumers will have a choice about how their energy consumption data is used, apart from where it is required for billing and other activities that energy companies are legally required to undertake. Other organisations (for example, switching sites) will wish to access consumer data, but will only be able to do so if the customer agrees.

■ Energy Suppliers

A consumer's energy supplier will communicate remotely with smart metering equipment to take meter readings, including on change of supplier or change of tenancy, as well as to update configuration and pricing information.

■ Energy Networks

The organisations that operate the energy network infrastructure will be able to access data on an aggregated basis, to help them understand the loads on their network at the local level and to respond to loss of supply issues. They will have better information for managing and planning investment

activities which will help the move towards 'smart grids' that allow the monitoring and active control of generation and demand in near real-time.

■ Organisations offering services

Consumers can choose to allow other organisations to have access to the data from their smart meter. For example, switching sites could use accurate information on the amount of energy used to advise consumers on the best tariff and energy supplier. As the rollout proceeds, an increasing range of devices should become available to help consumers manage their energy usage, including smart appliances which can operate automatically when electricity is cheaper.

Smart meter communications outside the home: the DCC and the Wide Area Network

The DCC will put in place communications across Great Britain to send and receive information from smart meters to energy suppliers, energy network operators and energy service companies. The DCC will be operated by Capita PLC under a licence regulated by Ofgem.

The DCC will manage three main subcontractors. CGI IT UK Limited is the Data Services Provider, which controls the movement of messages to and from smart meters. Arqiva Limited and Telefónica UK Limited are the Communications Service Providers who will put in place the Wide Area Network.

Arqiva will provide the network for Scotland and the north of England using long-range radio communications. Such infrastructure and technology is already used for other important national communications networks, such as those for digital television and emergency services.

Telefónica's network will cover the rest of England and Wales using cellular radio communications (technology typically used in mobile phone systems) plus "mesh" radio technology to supplement connectivity in a small number of hard to reach locations (such mesh systems have been used in smart meter installations in Sweden, Norway and Finland).

Further information

Further information about smart meters can be found on the Government's website at <https://www.gov.uk/smart-meters-how-they-work>.

Leaflets in this series

Smart Metering Implementation Programme: information leaflet: <https://www.gov.uk/government/publications/smart-metering-implementation-programme-information-leaflet>

Smart Metering Implementation Programme non-domestic leaflet: <https://www.gov.uk/government/publications/smart-metering-non-domestic-leaflet>