

Smart Grid (IEC61850)

There are many interested parties and technologies involved in the development and deployment of Smart Grids. The primary focus (as far as metering concerned) is to provide improved data on energy usage from consumption to generation. This should encourage and assist in the reduction of losses and influence the end user to be more energy efficient and/or switch to more environmentally friendly energy technologies with the aim to reduce Co2 emissions.

By displaying consumption in the home, data is collected via half hourly readings, to allow for the evaluation of electricity consumption habits of consumers, so that informed energy reductions can be made. In order to accommodate the volume read out of large quantities of meters every half hour, a dedicated communication network is needed.

There are many facets to energy reduction which range from flexible tariff change to credit meters that can be remotely converted to prepayment meters and home energy monitors that allow consumers to monitor their usage.

One advantage of the smart meter is that it removes the need for contact between the customer and the utility employee; this reduces the risk of collusion. Further to this it allows for the monitoring of energy use, which means the provider can detect and record energy theft. Unlike electromechanical meters, anti-tamper meters can detect tamper conditions and assist in the correct billing. The introduction of smart metering communications will allow for the detection of tampering being undertaken remotely. Smart metering also gives the provider the ability to disconnect and reconnect customers remotely, or to reduce the maximum current that can be drawn by the consumer.

One of the more critical elements of the system is the communication method and there are many proposed techniques, each with advantages and disadvantages. Of particular note is Zigbee, which is a meshed system ideal for creating local networks that can interface directly with a WAN (Wide Area Network) with our bridging technology, for large scale deployments. This can also be used to provide information directly to separate home energy displays or even to a PDA/mobile phone with our dedicated App.

