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The year of the smart meter

Across Europe smart metering is on the move. **Phil McDermott** explores the hurdles to be overcome as the EU invests billions of Euros in what is hoped will be a key energy-saving technology

Over the last few years, energy suppliers, users and regulators have been discussing the improved decision making and cost savings that gas and electricity smart metering will bring. This year, actions will speak louder than words. Across the EU implementation will gather momentum, and organisations and residents will begin reaping the benefits of smart metering technology.

Across the EU, smart metering ability to enable more intelligent energy usage, and avoidance of peak charges, has the potential to deliver huge savings. The Carbon Trust, for example, has estimated that users will reduce energy consumption by 10-15 per cent. It's worth pointing out that these savings are derived as much from the systems surrounding the meter as from the apparatus itself.

Front-loaded savings

The savings will tend to be front-loaded, as AMR can quickly identify inefficiencies in processes or behaviours and deliver significant wins quite quickly, the savings from which will be achieved every subsequent year. Even after these initial low-hanging fruit have been plucked, incremental savings will continue to be achieved, such as the cost reduction from eliminating manual meter readings.

The smart metering market is destined to be a huge \$300bn global market. Investment in smart metering in the EU is expected to be over €51bn, with potential financial benefits ranging from €14bn to €67bn.

Although the overall objective is the same – implement smart metering by 2020 – Gazprom Global Energy Solutions has found, through our activities across Europe, that the practicalities will be very different in each market. One size does not fit all. Some markets are further ahead than others with Scandinavia, particularly Sweden, leading



the way. Other markets will be watching the region closely to learn from its approach. Additionally, different organisations will lead the roll-out in different countries. In some markets, including the UK, energy suppliers will drive implementation, whereas in others, such as France, transporters will take the lead. Another consideration is the complexity of the market in question.

As well as the differences between EU countries, suppliers are also pursuing different routes to market. This year will see the deployment of three supply models. First, suppliers can sell smart metering solutions directly to customers, providing the requisite technology and systems for their installation and use. Additionally, they can provide the AMR systems to transporters or utility companies, focusing on those with the EU mandate, who can use their own in house metering expertise, GSM data-carrying experience and IT infrastructure to efficiently roll them out to customers (as an example, this is one of the models that Gazprom Global Energy Solutions has adopted outside the UK). There is also a third option – the DIY approach. This again involves selling the smart

meter itself direct to customers, but only providing the hardware and protocol, and leaving out the associated systems and support.

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Technological changes

This year will also see technological changes that will deliver further savings. One key trend will be the transition to cheaper ways to transmit data. In the past, each smart meter had its own GSM mobile phone technology to send information to suppliers. However, we are now moving towards a more cost-effective hybrid system, where meters use a radio-based transmitter to deliver consumption data to a GSM or internet enabled data concentrating hub. Each hub with a data collection range of up to 1km. This solution reduces the cost of each meter, and adds further weight to the cost-benefit analysis.

An additional benefit that will become relevant in 2011 is the ability of AMR to increase the green proportion of consumers' energy mix. This is often a regulatory demand; the UK has a target of sourcing 20 per cent of its energy from renewables by 2020. Smart metering allows both users and suppliers to understand the proportion of green energy they are using in a way that “dumb” metering doesn't, and this can enable both parties to move towards their regulatory targets.

The smart metering initiative has the potential to deliver huge benefits, but it is not without its challenges. While commercial users are usually well-versed on the benefits of smart

metering, residential customers will need a more educative approach. To see the dangers of failing to consult customers, we need only look at the Netherlands, where the public were not fully engaged in the process, and consequently opposed the roll-out when it was attempted. They had concerns over data security and some believed it would actually drive costs up. Because there had been no opportunity to address these issues, the programme has stalled and returned to the public consultation phase, demonstrating to the market that this step cannot be skipped.

The sheer scale of the project means also that hurdles around resourcing skills need to be overcome. Additionally, users may find the process challenging; they will need to change behaviours and apply discipline to realise savings. AMR solutions represent relatively new technology, and 2011 will see the market constantly refine the implementation process through trial-and-error. ●

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