

Linking Energy Efficiency Measures with the Roll Out of Smart Metering

The following paper is intended to initiate a debate about how best to link energy efficiency to the smart metering roll out. It is the views of BEAMA staff, many of whom have many years' experience in both the smart metering and energy efficiency industry.

Introduction

Over the lifetime of the current parliament almost every domestic property will be visited to install smart meters, and associated energy displays and communications equipment. The initial benefits for consumers of accurate bills, easier switching, and increased awareness of energy use and costs will begin to be delivered as soon as equipment is installed. There is currently no link between this highly significant program and wider energy efficiency schemes for consumers. Secretary of State Amber Rudd, stated that energy efficiency is the key measure for households to reduce costs, and to help the country meet its climate change obligations. This paper outlines a methodology that can use the smart meter roll out as a catalyst for consumers to improve the energy efficiency of their homes.

The smart meter roll out

A key part of the Government's energy policy is the roll out of smart metering systems over the next 5 years. The mass roll out is planned to commence in earnest in 2016, for completion by the end of 2020. Ministers have confirmed that this timetable will be retained in order to provide all customers with the benefits as soon as possible. Some 26 million homes will be visited for the installation of equipment: a communications hub, an electricity meter, and gas meter where required, and all householders will be offered an In-Home energy Display (IHD), all at no direct cost to the householder.

At the time of installation the accredited installer has the responsibility to explain to the householder how the IHD operates, and how their new smart metering system will deliver other benefits. It is recognised that the economics of the roll out precludes any further consultation on other aspects of energy use and energy efficiency. In addition the training for metering systems installers will not include energy efficiency.

Once smart metering systems are installed into a dwelling, the householder can immediately manage their energy use better, and receive more accurate and regular bills. International evidence (ESMIG reports, empower 1&2), show that the first step for most householders is to engage with this new technology to reduce their household energy bills. The second stage is to make more significant changes to

their energy use via energy efficiency measures, initiated by the increased awareness of their energy use and costs. The third is to take advantage of demand response techniques, using Consumer Access Devices (CADs) connected to the in-home smart meter network. In the industry's view, this final stage will only happen at least a year to 18 months after the start of the mass roll out, and then only with the more technically savvy consumers. This highlights the need to ensure that as many consumers as possible benefit from both the initial roll out and the second stage of linked energy efficiency measures.

Smart Energy GB has a role to outline the benefits of smart metering to the householder, and to link this to the wider energy efficiency benefits available to them. It is developing a network of local partners from the voluntary sector to achieve this objective.

Energy efficiency programs for householders

The Government has stated that all the existing schemes for assisting consumers to reduce their energy costs, and invest in low carbon technologies need to be reviewed in terms of cost effectiveness. Following this review it is assumed that a number of schemes will be developed. These will include schemes targeting low income families, particularly households in fuel poverty.

Potential savings

It is estimated that in excess of 25% energy savings can be achieved by householders opting for the existing simple measures available to them. (BEAMA manifesto references) From the upgrading of roof and wall insulation, the installation of heating and lighting controls, to the installation of more efficient boilers, heat pumps and low energy ventilation systems, there are countless measures that consumers can derive benefit from. Over many years, and initiated by different administrations, many energy efficiency schemes have been tried. Some have had some success, other less so, but in all cases the main barrier was the lack of clear, reliable and trusted dissemination routes for both advice and service delivery to householders. This has resulted in the majority of dwellings not being well insulated, poorly controlled, and many with inefficient heat sources.

The suggested solutions

The main objective is to use this 'once in a generation' opportunity to engage consumers at the time of their smart metering installation. As described, it is difficult to carry out energy efficiency assessments or give advice at the time of installation. However some basic information could be recorded at this time.

BEAMA have considered a two basic scenarios for how a system could operate. Each would involve the co-operation of a number of parties including energy retailers, the Data Communications Company, Smart Energy GB, the Energy Savings Trust, DECC,

OFGEM and manufacturer organisations. The optimum delivery mechanism may use elements from both scenarios, and would need to be discussed amongst the named stakeholders

Scenario 1

The householder to be contacted by an independent third party perhaps 2-3 weeks after the smart metering installation. This intervention would outline the opportunities available to the consumer from the smart metering system, and introduce the other opportunities available for this householder.

- 1 Householder has a smart metering system installed
- 2 The details of the installation are collated and forwarded to a trusted independent body. This could be Smart energy GB
- 3 The householder is contacted by the independent third party (Smart Energy GB, or a partner organisation)
- 4 The householder is informed about the options for them to make improvements, and encouraged to use their In Home Display to monitor their energy use. They are pointed towards relevant independent information on their options (e.g. www.controlyourhome.co.uk)
- 5 The householder contacts the third party organisation, if they wish to take advantage of any scheme available.
- 6 The 'lead' is passed on to the relevant organisation responsible for funding or installing the requested measures.

Scenario 2

1. Householder has a smart metering system installed.
2. The details of the installation are collated, together with a record of the size of dwelling (e.g. 3 bed semi) and, ideally, email address.
3. Householders are then targeted where their energy use (as recorded by the smart meter) puts them in the top x% of high users for the size of property. This automatically generates an email informing them that their usage is high and gives a link to a simple survey for them to provide data on, say, their heating system type, boiler age, heating controls, level of insulation.
4. This could then flag up options for energy efficiency improvements and links to sources of help, either:
 - i. Automatically and electronically for the customer to follow up if they wish (low action but low cost although a software system would be required.)
 - ii. Through the energy supplier who would could then target energy saving measures to high users. (Perhaps a next step for ECO.)
 - iii. Through third parties such as Green Deal suppliers or even industry.

Summary and Conclusions

- The smart metering rollout will give consumers access to near real time energy data. This will empower them to engage in new ways with their energy use.
- The benefits case for the smart metering rollout derives principally from consumer behaviour changes, as access to real time data empowers consumers to use less energy and cut their bills.
- However, there is currently no link between the rollout and wider energy efficiency schemes for consumers and the training for metering systems installers will not include energy efficiency.
- The suggested mechanisms, or combinations the 2 would be a relatively low cost way to actively engage consumers in a wider energy efficiency initiative, using the catalyst of the smart metering installation in their home. It would require the agreement of a number of stakeholders, but could be put in place to coincide with the mass smart meter roll out.

BEAMA proposes these possible solutions to stimulate further discussion, with the main objective that the end consumer receives real energy efficiency improvements in addition to the benefits from smart metering alone