

1. Executive summary

This is the second Annual Report published by ESMA. The intention of the Annual Report has been to provide a running commentary on progress in the implementation of smart metering across Europe and how it can and has supported energy savings and other social benefits.

The report examines four key items:

- **Progress in implementing smart metering across Europe**

The report provides a number of statements on the progress in countries across Europe. These cover most of the circumstances found in European Member States, ranging from near implementation to little or no progress. The report also contains in-depth studies of The Netherlands, Sweden, The United Kingdom and the Czech Republic. These were chosen as they illustrated important recent developments. A number of European countries and large DSOs have made announcements regarding full implementation of smart metering, committing themselves to roll outs by a certain year. These include Norway, Spain, EdF in France, UK, NL, Portugal and Ireland.

- **A listing of the smart metering roll outs across Europe (and globally)**

This shows that there are a large number of individual projects underway or announced. In Italy, Sweden and Finland, smart metering has been or is being fully implemented. Most other projects being announced are trials or pilot projects, in many cases being carried out before making a decision on a full roll out. In some countries individual energy companies are making their own decisions to roll out smart metering to their customers, for example Denmark.. Most of the new projects, stimulated by the Energy Services Directive and 3rd Energy Package, have a greater focus on energy savings. One key observation from this review is that the largest numbers of smart metering installations continue to be happening in the US.

- **Advances in Smart Metering Technology**

The last year has seen continued progress in smart metering technology. The report focuses on developments related to customer feedback and energy control. In this area key developments have been continued development of devices linking smart meters to home controls and appliances to support demand response and energy services. This has been a feature of 2009 as smart metering is absorbed into smart grids programmes. Also we have seen both Google and Microsoft launch home energy related software products

A related topic is the development of standards intended to make smart metering interoperable. These are being developed by the European Standards Organisation (CEN/CENELEC/ETSI) in response to the European Commission Mandate M/441.

- **Updating the evidence on the energy savings benefits of smart metering**

ESMA produced a report¹ that reviewed the current evidence for energy savings and other environmental benefits arising from smart metering and this report provides an update on the evidence base and conclusion that can be drawn from it.

- **A review of barriers affecting smart metering**

- There remains much uncertainty about the quantification of benefits as practical experience and historical data are still lacking.
- There are many parties involved, and the benefits of smart metering may accrue to other parties than the ones that bear the costs. Most utilities cannot justify the costs on the basis of their own benefits.
- At the large scale the roll out of smart metering is a very long and costly process, requiring considerable capital expenditures from the responsible market actors while in many EU countries, there is a big opposition from regulators to increase the tariffs to final users to pay for it.
- Lack of interoperability between different smart meter systems has been a barrier to the adoption of smart metering: no open registered standards exists which properly scopes all of the different functions (metering, communications, presentation, and network). This has been recognised and the Commission, through Mandate M/441 and the FP7 Open Meter Project, with the support of industry, has launched a major programme to put the required standards in place.
- There is also a lack of modularity and lack of flexibility of present mass smart metering so special needs regarding distributed generation, demand response, power quality, customer information, energy efficiency automation and services can only be met with high extra costs.

¹ 1 Bericht über effective Kundenfeedback-Mechanismen, Henk van Elburg, SenterNovem, Dezember 2007

