

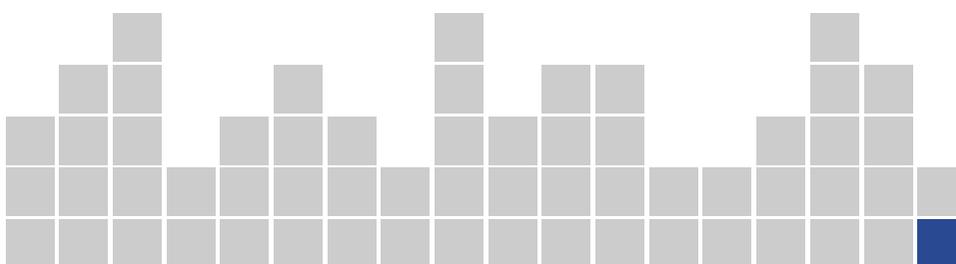


ESMIG WE MAKE METERING SMART

Electra Conference: “We can do it”: Using Technology & Innovation for Growth of New Markets 15 October 2009

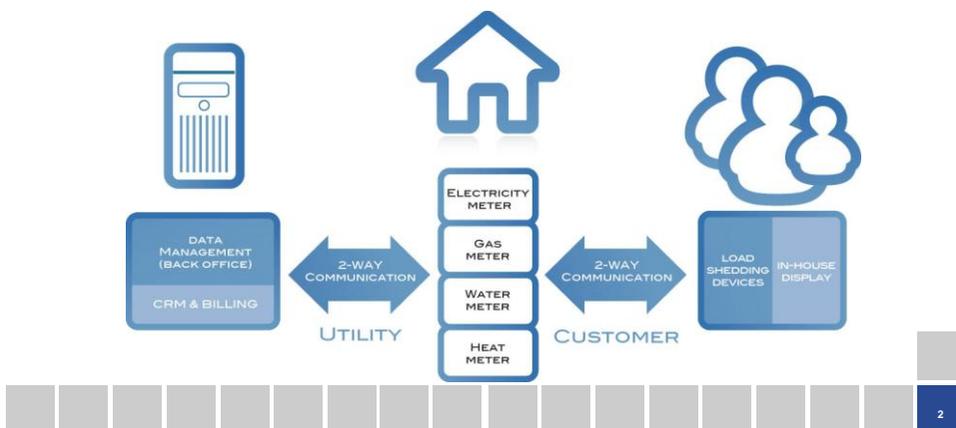
Case study on Smart Metering market & technology opportunities - standardisation

Klaus-Dieter Axt, Operations Director



Smart Metering Overview

“Smart Metering offers consumers, suppliers, network operators, generators and regulators a wide range of useful tools and services enabling ultimately a smarter energy world.”





Smart Metering Definition

Generally, Smart Metering technologies consist of several different technical components, but the majority include the following features:

1. Accurate measurement and transmission of electricity, gas, water or heat consumption data

2. Provision of a two-way information gateway and communication infrastructure between the meters and relevant parties and their systems, for:

- raising awareness and empowering the consumer through delivery of actual consumption data
- improving Customer Relationship Management (CRM) and services, including automated billing/invoicing based on detailed metering data
- managing energy networks/grids better by shifting or reducing energy consumption, e.g. through Demand Side Management (DSM)
- enabling new energy services for improving energy efficiency
- encouraging decentralised, micro-generation of energy, thus transforming the consumer into an energy producer ("Prosumer").



About ESMIG – the Organisation

ESMIG - the European Smart Metering Industry Group

- is the European industry association that provides knowledge and expertise on Smart Metering and related communications at a European level.
- ESMIG's members are the leading companies in the European Smart Metering market (meter manufacturing, software, installation, consulting, to communications, data management and system integration).
- Member companies cover all aspects of Smart Metering, including electricity, gas, water, and heat measurement.
- By giving support to the European Union and its Member States as well as through co-operation and partnerships with relevant stakeholders, the Industry Group aims to assist in the development of national and European-wide introduction, rollout and management of Smart Metering solutions.
- located in Brussels and registered under Belgian law (aisbl)





About ESMIG – the Members



Knowledge to Shape Your Future

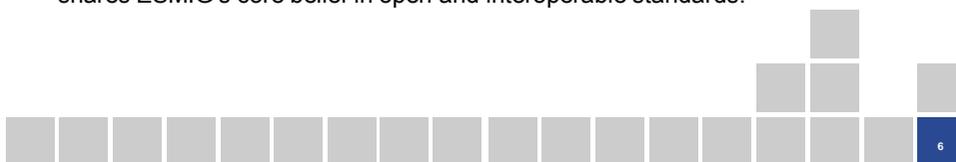


ESMIG – Partnerships

In the area of European and international standardisation, ESMIG has concluded several cooperation agreements with partners, such as CENELEC, DLMS, ETSI, Open Meter and ZigBee and further agreements are foreseen.



The partnership scheme is open to any standardisation organisation that shares ESMIG's core belief in open and interoperable standards.





Metering Market in Europe

The European Union set itself ambitious targets by the year 2020 :

- to reduce the output of greenhouse gases by 20%, to improve energy efficiency by 20% and to increase the percentage of renewable energy by 20%.
- to achieve these targets the development of fully operational Smart Metering systems across Europe is essential.

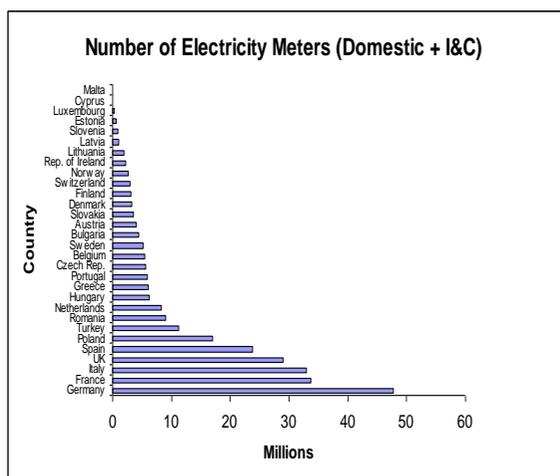
Concerning Smart Metering:

- The “3rd Energy Package” which entered into force on 3 September 2009, includes Electricity and Gas Directives which require the EU Member States to ‘ensure the implementation of intelligent metering systems.’
- The Electricity Directive foresees full deployment by 2022 at the latest, with 80% of consumers equipped with Smart Metering systems by 2020.



Market Potential

Electricity Meter Numbers (by Country)



- For countries shown for domestic and I&C electric meter stock is >275m
- > 60% of total electricity meter stock is in Germany, France, Italy, UK & Spain

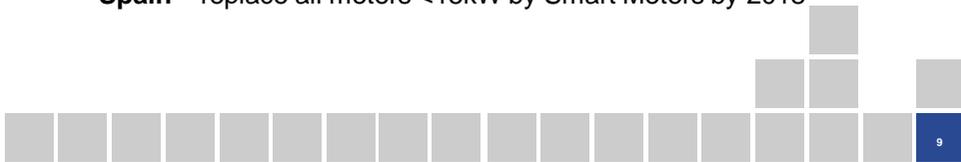
Source: Engage Consulting Limited Analysis for ESMIG





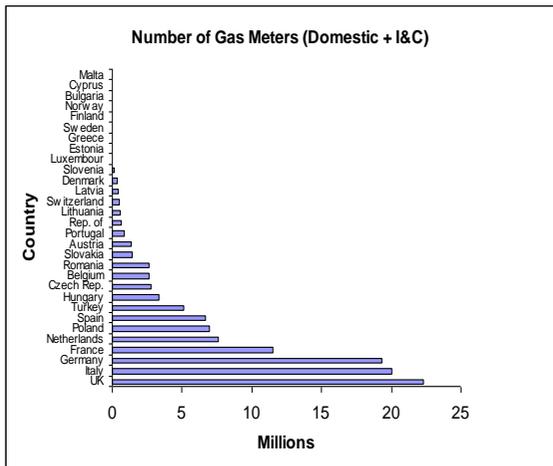
The Electricity Metering Market

- **Germany** – very few Smart Meters installed as yet
- **France** – stated they wish to replace c.33m meters by 2012
- **Italy** – remotely controlled meters for all consumers by 2011- c.36m
 - Already > 30 million meters in place
 - Revisiting spec. of meters
- **UK** mandated rollout for all electricity & gas meters (> 47m) by end of 2020
 - Linked to Environmental & Efficiency targets
- **Spain** – replace all meters <15kW by Smart Meters by 2018



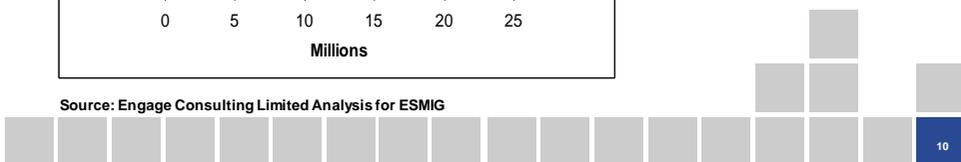
Market Potential

Gas Meter Numbers (by Country)



- For countries shown total gas meter stock is >115m
 - > 80% of total gas meter stock is with top 7 countries
- ⇒ UK, Italy, Germany, France, NL, Poland & Spain

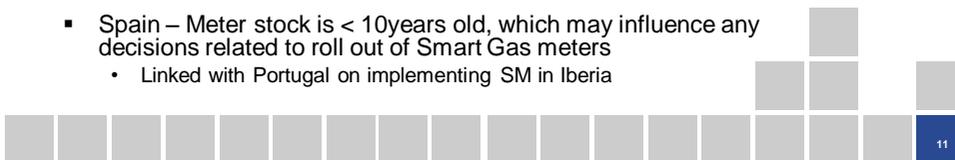
Source: Engage Consulting Limited Analysis for ESMIG





Gas Metering Market

- UK planned roll out covers electricity & gas meters by end 2020
- Italy – published minimum standards for remote reading and management of gas meters late in 2008
 - Large users by 2011
 - Domestic users by 2013
- Germany – Standards for Gas SM functionality expected by 2011
- France – At very early stage
- Netherlands – One of most advanced SM markets in Europe
 - Have a national spec. for multi-utility Smart Metering which uses Electricity meter as hub for communication
 - Five year rollout was planned, but delayed slightly
- Poland – No apparent policies or legislation under discussion for SM
 - Initial focus on pilots is for I&C electricity, gas and heat
- Spain – Meter stock is < 10years old, which may influence any decisions related to roll out of Smart Gas meters
 - Linked with Portugal on implementing SM in Iberia



European Standardisation: Smart Metering mandate (441)

16 March 2009: Publication of a mandate for standardisation to ESOs (European Standardisation Organisations) in the field of measuring instruments for the development of an *open architecture for utility meters involving communication protocols enabling interoperability*.

Objective:

Creation of European standards that will enable interoperability of utility meters (water, gas, electricity, heat), which can then improve the means by which customers' awareness of actual consumption can be raised in order to allow timely adaptation to their demands ('SMART METERING')

⇒ 3 months for the working program (in preparation: November 2009)

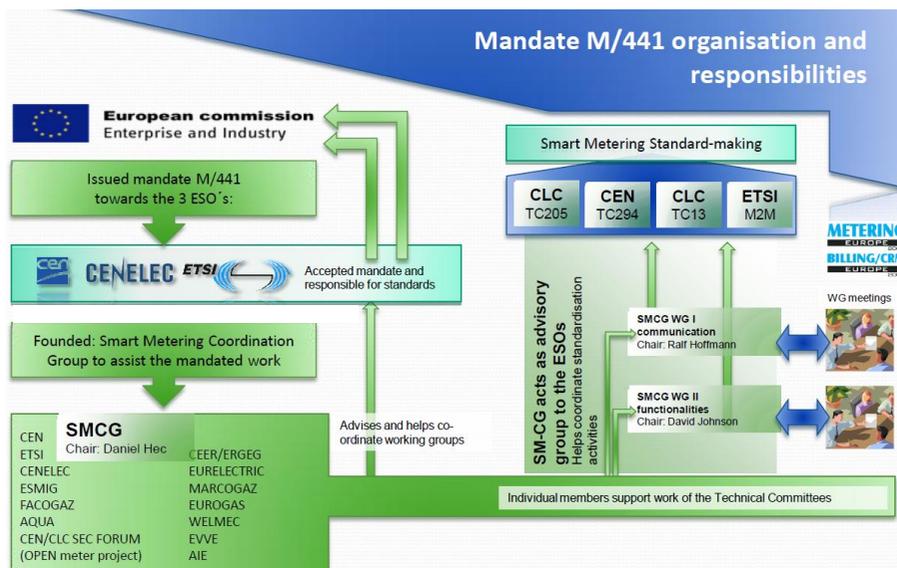
- ↳ + 9 months presentation of the European standard for communication
- + 30 months: the harmonised solutions for additional functions

Co-ordinated by the ESOs and the Smart Metering Coordination Group (SMCG)





European Standardisation: Smart Metering Coordination Group (M441)



Challenges and Opportunities : Smart Metering mandate (441)

- **The M/441 mandate is an opportunity for market and industry to organise themselves**
- **All stakeholders are represented**
 - M/441 process includes all stakeholders affected by smart metering
 - Stakeholders are represented via their relevant EU level association
 - Local and national bodies need to connect to their corresponding association
- **If M/441 standards-making process does not lead to the expected results, the Commission could always seek to define the standards itself**





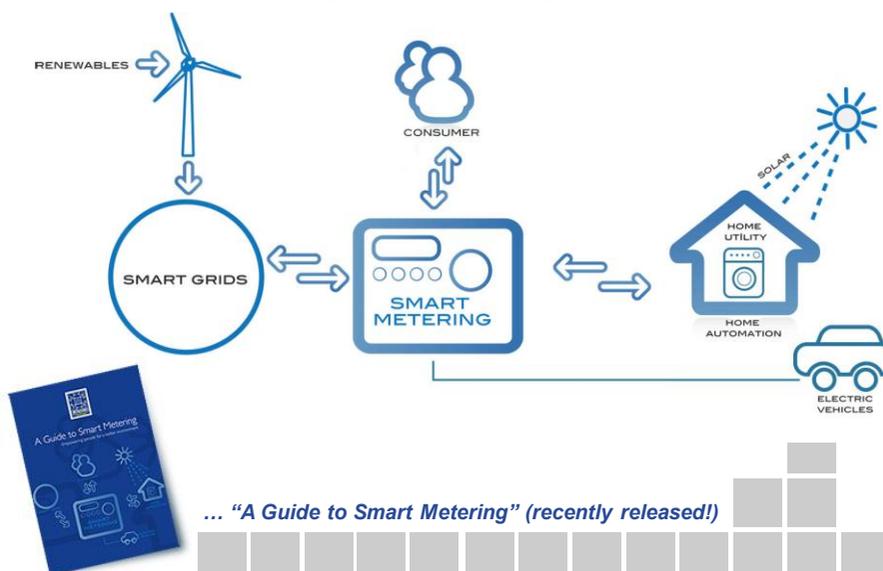
Objectives and context:

Standardisation work within M441

- Standardisation work within M441 does not mean imposing identical solutions on all projects in the Member States
- Member States can have their own priorities & there will be differences between electricity, gas, water & heat, but need to take solution out the one common standards suitcase
- It is essentially for new technologies to use the process of making standards
- Aim is to ensure that what a Member States may want to do in smart metering is covered by suitable standards
- Does not cover 'back office' or other industry systems impacted by smart meters but have implications on these
- Starting with existing European & international standards
- Update existing European metering standards to cover smart metering; develop new standards if necessary.



... enabling a smarter energy world



... "A Guide to Smart Metering" (recently released!)





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