Smart Metering

its role in Electra

the role of standards
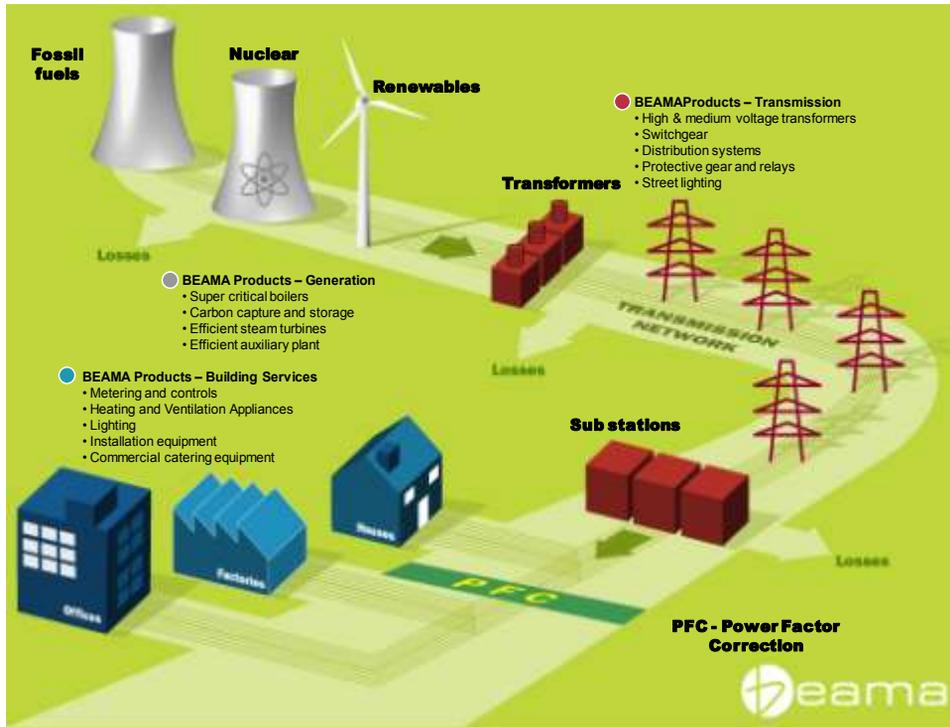
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MD ESMIG - Brussels

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BEAMA

- The association for the electrical industry in the UK
- Part of the Electra working group
- Published the UK version of the Electra paper in October 2009
- Savings and efficiency gains possible all through the electrical network

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Fossil fuels

Nuclear

Renewables

BEAMAProducts – Transmission
• High & medium voltage transformers
• Switchgear
• Distribution systems
• Protective gear and relays
• Street lighting

Transformers

Losses

BEAMA Products – Generation
• Super critical boilers
• Carbon capture and storage
• Efficient steam turbines
• Efficient auxiliary plant

BEAMA Products – Building Services
• Metering and controls
• Heating and Ventilation Appliances
• Lighting
• Installation equipment
• Commercial catering equipment

TRANSMISSION NETWORK

Losses

Sub stations

Losses

Offices

Factories

Houses

PFC

PFC - Power Factor Correction

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Smart Metering

- Smart metering plays a vital role
- Provides the link between the utility and the customer, and
- Provides millions of smart end points for smart grids
- In the UK and throughout Europe many Governments and utilities have advanced plans for deployment

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BEAMA and smart metering

- BEAMA provides the lead for manufacturers in the UK and in Europe:

    – BEAMA manages the European Smart Metering Industry Group

ESMIG is the European body for smart metering

- An association of the 20 leading players in the European Smart Metering market
- Providing knowledge on Smart Metering and related communications at a European level
- Giving support and advice to European Union institutions and member state governments, regulators and utilities
- Assisting in the development of national and European policies for the introduction, roll out and management of Smart Metering systems
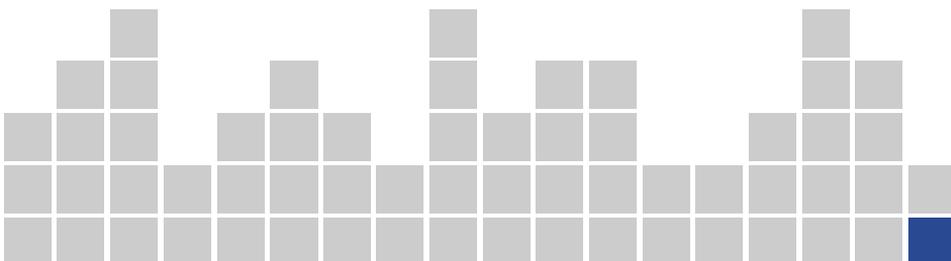
ABOUT ESMIG – THE MEMBERS

Smart metering explained
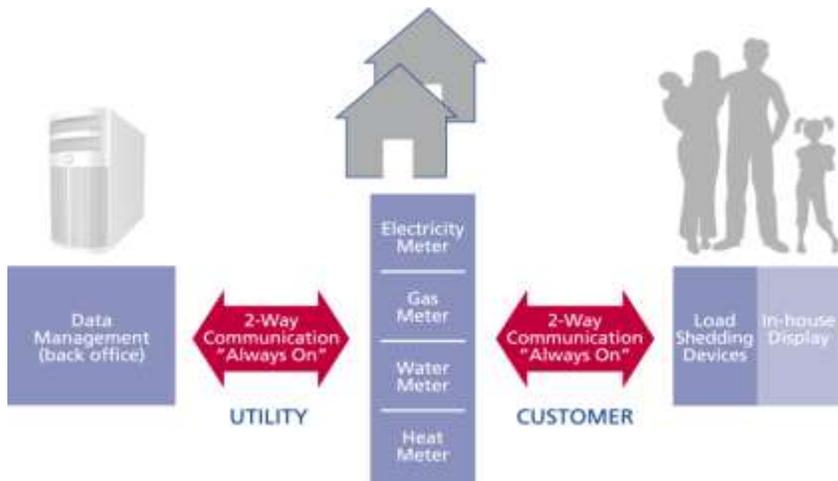
The benefits are wide

- There are many benefits from smart metering
  - For consumers
  - For utilities
  - For the future of energy security
  - For the environment

Energy customers

- Provides current and historical information on energy usage
- Can lead to usage reductions of 5-10%
- Can be used for advanced payment systems
  - Pre payment
  - Variable tariffs
  - Allows for social or environmental utility deals

For utilities -

- Provides the toolbox for utilities to manage energy demands
  - For electricity and gas
- Delivers millions of smart end points for smart and flexible electricity networks
- In liberized energy markets allows utilities to develop energy services

For Governments

- The EU has very ambitious energy and environmental targets
- Summarised as the 20:20:20 targets
  - 20% energy efficiency improvements
  - 20% renewables
  - By 2020
- The role out of smart metering throughout Europe by 2020 will by key for the meeting of targets

Major developments for member states in EU

- The last month has seen 2 major initiatives in the EU for smart metering:
  - Smart metering elements in the 3rd energy markets package
  - A Mandate for Smart metering standardisation issued by the commission

The 3rd Package

- Following ESMIG and member assistance Smart Metering features significantly in the final text going to vote for the commission and the parliament:
- *Member States shall ensure the implementation of intelligent metering systems that shall assist the active participation of consumers in the electricity supply market. The implementation of those metering systems may be subject to **an economic assessment of all the long-term costs and benefits to the market and the individual consumer** or which form of intelligent metering is economically reasonable and cost-effective and which timeframe is feasible for their distribution.*
- *Such assessment shall take place **within 18 months** after the date referred to in Article 48(1).*
- *Subject to this assessment, Member States or any competent authority they designate shall prepare a timetable with a **target of up to 10 years for the implementation** of intelligent metering systems.*
- *Where roll-out of smart meters is assessed positively, **at least 80 % of consumers shall be equipped with intelligent metering systems by 2020.***
- *The Member States, or any competent authority they designate, shall ensure the interoperability of those metering systems to be implemented within their territories and shall have due regard to the use of appropriate standards and best practice and the importance of the development of the internal market in electricity;*

Standards

ESMIG has worked with the commission to develop the mandate for smart metering standardisation:

  The mandate issued on March 12th

  It is in two parts:

    The development of standard(s) for remote reading of meters
    The development of standards for smart metering functionality

  Timescales are interesting:

    Remote reading standards 9 months after acceptance by the standards bodies
    Functionality standards 30 months after acceptance by the standards bodies

It allows the development of new standards to be proposed by the European Standardisation Organisations (CEN, CENELEC, ETSI)

What does the mandate say?

- The Mandate was published on the 18th March
  - It is in two parts:
    - The development of standard(s) for remote reading of meters
    - The development of standards for smart metering functionality
  - Timescales are interesting:
    - Remote reading standards 9 months after acceptance by the standards bodies
    - Functionality standards 30 months after acceptance by the standards bodies
- It allows the development of new standards to be proposed by the European Standardisation Organisations (CEN, CENELEC, ETSI)

ESMIG objectives

- Recognises:
  - the requirements for different wide area network solutions
  - the differing requirements from national Governments and/or energy companies
  - the varying effects of climate, topography, consumer reaction etc across Europe
- Therefore proposes:
  - that the requirements for remote access standards are limited to the availability of data/ data structures and protocols
    - Allowing the different WAN solutions to develop standards as required
  - that an agreed list of SM functionalities are developed by a small group of stakeholders
    - Reviewing the availability of relevant existing standards from around Europe
    - Only then developing new standards as required

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