Status Review on Smart Metering

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Introduction

- Need for a status review and detailed analysis of smart meters in Europe was expressed at the first CEF in October 2008
- A worldwide trend: substantial changes are under way in the technology of utility meters (electricity, gas, heat, water)
- In 2009 the EC gave a Mandate to the standardisation bodies (CEN, CENELEC, ETSI) to develop an open architecture for utility meters involving communication protocols and functionalities enabling interoperability

Legal background

- At European level, 2 legislative acts refer to smart meters in gas and electricity:
  - Directive 2006/32/EC on energy-use efficiency and energy services mention "…individual meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use."
  - Directives of the 3rd package 2009/72/EC and 2009/73/EC: Member States have to "ensure the implementation of intelligent metering systems that shall assist the active participation of consumers in the electricity/gas supply market…"

ERGEG status review

Methodology:

- Based on the result of one questionnaire for electricity & one for gas administered by the NRAs of EU Member States + Norway & Iceland
- 25 countries answered
  - 25/21 national regulators replied respectively for electricity/gas
- Scope : mass market
- State of play on:
  - Definitions of smart metering,
  - meter value management,
  - roll-out policies,
  - functional and technical aspects

Definition of smart metering (1/2)

- Many regulators do not have a definition and several terms are used : “smart”, “intelligent”, “advanced” meters

- In electricity, all regulators (gas: 7 regulators) use the term “smart metering” or equivalent:
  - For almost all NRAs (gas: all), it describes a system that accurately reflects the customer’s energy consumption, provides information on the time of use and allows remote meter reading
  - And, for 15 (gas: 4) NRAs, a system that supports 2-way communication, remote connection/disconnection, local display devices etc..

Main policy drivers for a roll-out of smart metering

- **Main drivers:**
  1. Energy efficiency
  2. More frequent meter readings
  3. Peak load management

- **Key regulatory tools:**
  1. Legal obligation
  2. Minimum functional requirements
  3. Financial incentives
  4. Standardisation

Status of large scale roll-out

- **Achieved**
  - in electricity in 2 countries: Italy and Sweden (more than 90% of population equipped)
  - In gas in 0 countries
- **Decided**
  - In electricity in 3 countries: Finland, Greece and Spain
  - In gas in 2 countries: Italy and Spain
- **Under discussion**
  - in electricity in 12 countries: Austria, Czech Republic, Denmark, France, Germany, Great Britain, Ireland, Netherlands, Norway, Poland, Portugal, Slovak Republic
  - In gas in 4 countries: France, Great Britain, Netherlands and Slovenia

Cost benefit Analysis

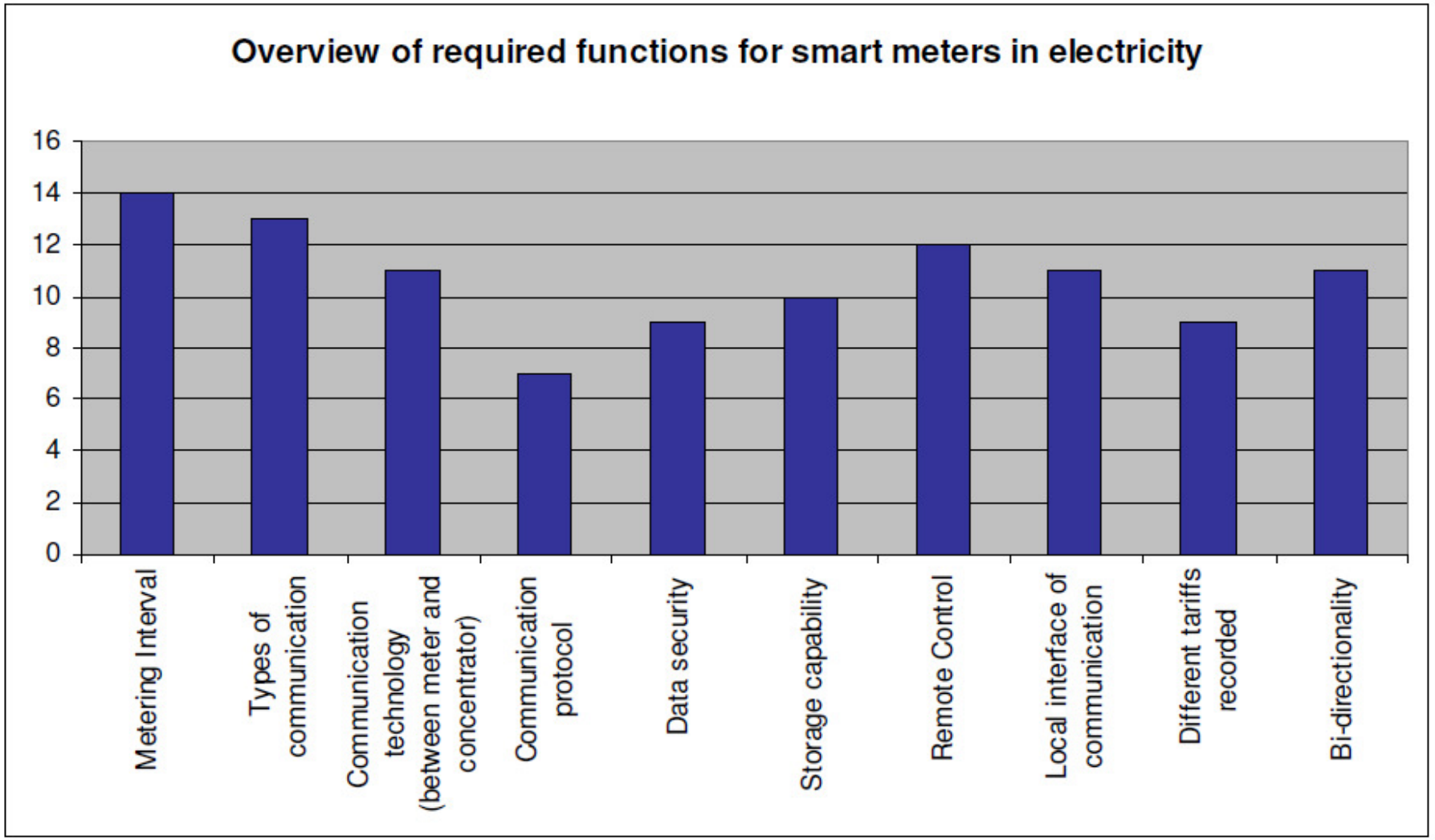
- Have been conducted
  - for electricity in 7 countries: Czech Republic, Finland, France, Netherlands, Portugal, Spain and Sweden
  - for gas in 3 countries: Italy, Netherlands and Spain

- Are in progress
  - for electricity in 5 countries: Austria, Belgium, Denmark, Germany and Poland
  - for gas in 8 countries: Austria, Belgium, France, Germany, Great Britain, Ireland, Poland and Slovenia

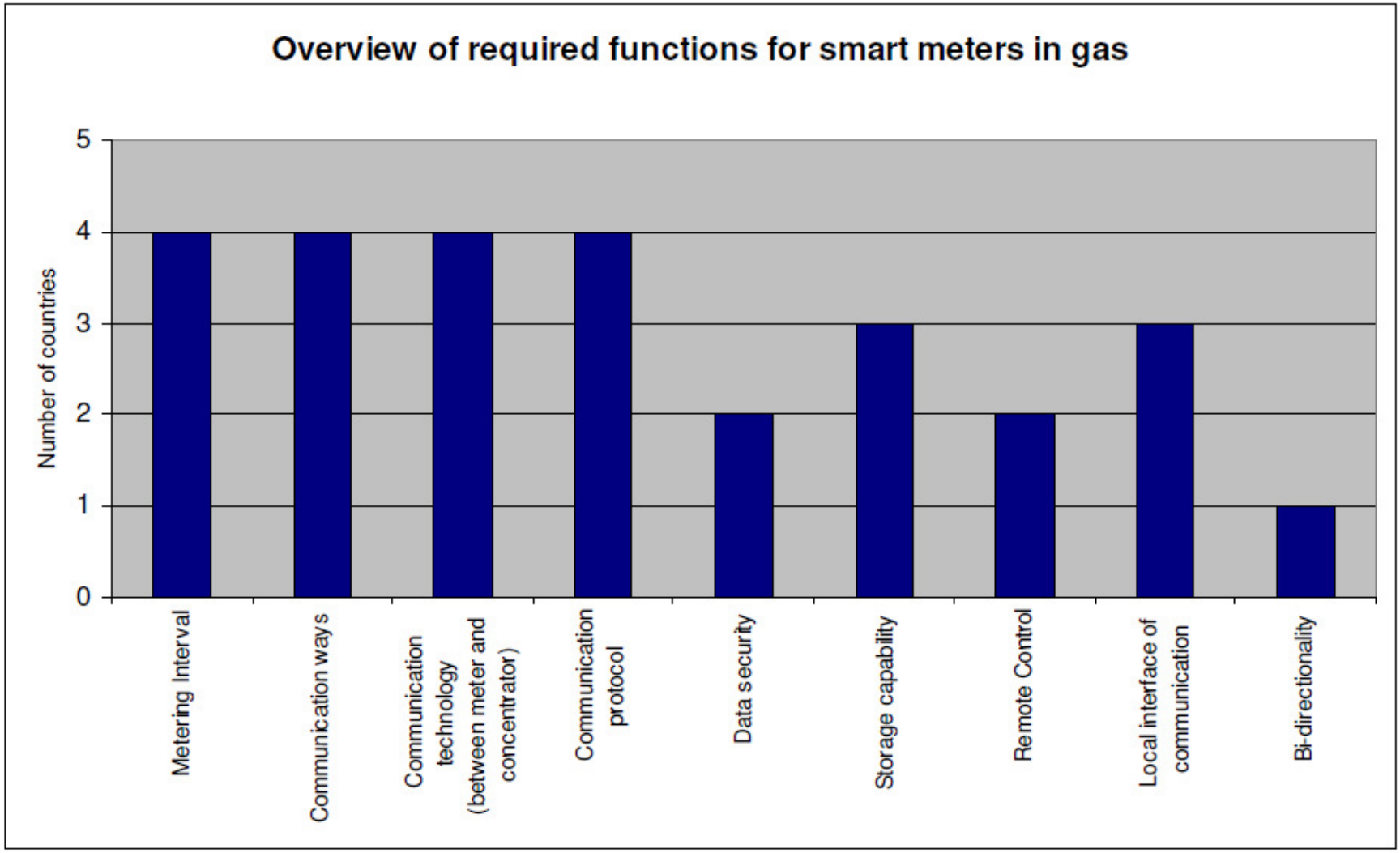
Functional and technical aspects:

- Countries who have regulated or discussed (some kind of) minimum requirements:
- **In electricity 16 countries:** **Germany, Austria, Cyprus, Estonia, Finland, France, Hungary, Iceland, Italy, Lithuania, the Netherlands, Norway, Poland, Portugal, Spain and Sweden**
- **In gas 4 countries:** **France, Italy, Poland and the Netherlands**
- But: Not all these countries have included all the functions mentioned in the review

Overview of required functions in electricity



Overview of required functions in gas



Meter value management

- Concerns collection, treatment and use of the data provided by the utility metering systems
- Central to market functioning
- In 23 out of 25 countries in electricity and 18 out of 21 in gas the responsibility lies with the DSO
  - Germany and Great Britain (and Latvia for gas only) have liberalised metering markets

Summary of main findings

- Main drivers of large scale roll-out are common to gas & electricity and to all countries
- Smart metering roll-out timetables differ for electricity and gas
- Definitions of smart metering differ: remotely readable or two-way communication meters depending on energy and on country
- Metering intervals vary from 30 minutes to one month depending on energy and country

Conclusion and next steps

- More work has to be done for a common approach :
  - for defining smart meters and their functional requirements
  - for ensuring interoperability at national & European level
  - for a transparent methodology of cost benefit analysis
- At this stage the number of roll-outs and projects differ between European countries and may well undergo substantial changes in the near future
- ERGEG therefore plans to continue its dialogue and analysis with stakeholders to develop Guidelines & Good Practice on regulatory aspects of smart metering