

A Partner in Energy Metering

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A Partner in Energy Metering



Kamstrup –

a high-tech company and among the leading manufacturers of **solutions** for metering cooling, heat, electricity, water and natural gas.

Solutions –

include hardware, software, operation and support within the area of metering, automatic data collection (AMR/AMM), analysis and surveillance of energy consumption.

A Partner in Energy Metering



Kamstrup –

has more than 60 years of experience in the business and a strong international position with representations in more than 50 countries

Kamstrup –

employs 650 people worldwide and has a fully automated production plant, R&D and head office located in Denmark

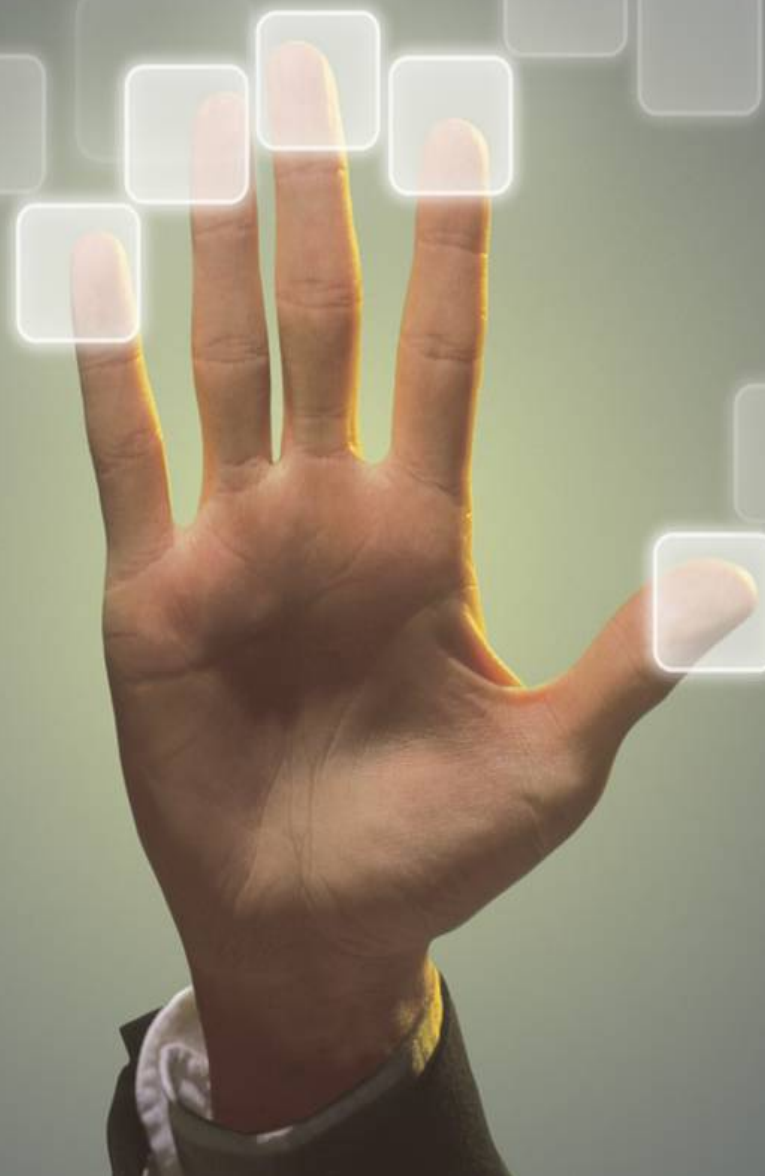


Electronic energy meters

- For cooling, heat, electricity and water
- Meters are refined and
 - precise – beyond international requirements and standards
 - flexible – large dynamic area
 - durable – no moving parts
- Upgradable plug-and-play modules provide a multitude of remote reading technologies



Water Management!



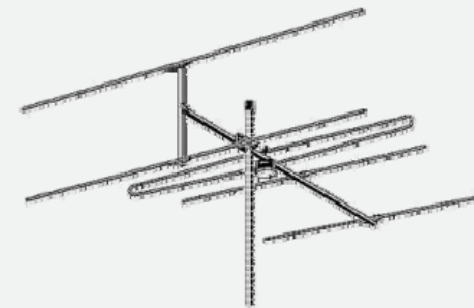
Yesterday's technologies are cabled

- M-Bus
- Tele-modem
- PLC



The technologies of today and tomorrow are wireless

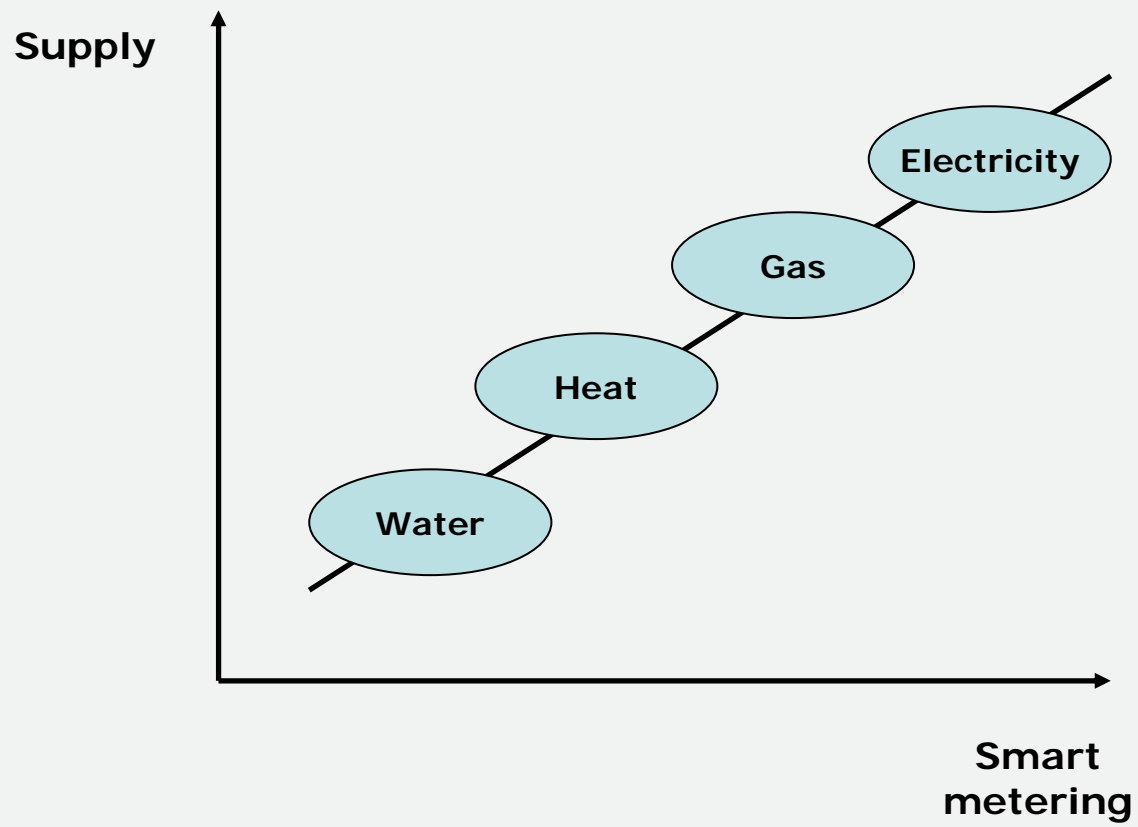
- Radio
- GSM/GPRS
- Wireless M-Bus
- ZigBee
- Z-Wave
- WiFi
- And more...



Status on Smart Metering



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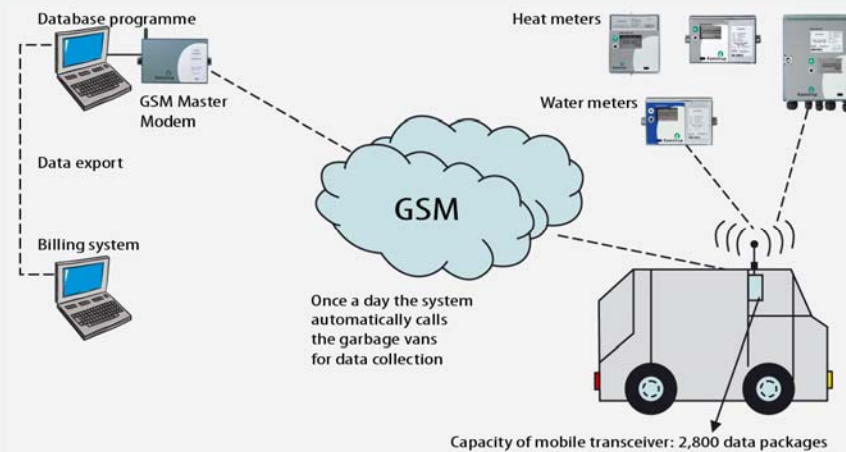




59,000 multi-utility meters
AMR system (Radio Network)
Roskilde/Hillerød

How to read 60,000 energy meters
once a month?

Mobile Radio Network
District Heating Funen



Issues raised by the Commission



Real-time monitoring

Awareness communication

Advanced metering

Adaptive pricing

New data management technologies



Batteries

- battery is the only energy source
- more than 2 grams of lithium means dangerous goods

Data amount

- Meters contain more data registers than previously
- Meters often contain logger and alarm functionality

Data transmission interval

- Hand-held terminals for walk by/drive by/fallback solutions
- Update of kitchen display and home automation
- Simplify installation scenario

Industry standard

- Open and available to everyone
- Robust



Other Issues



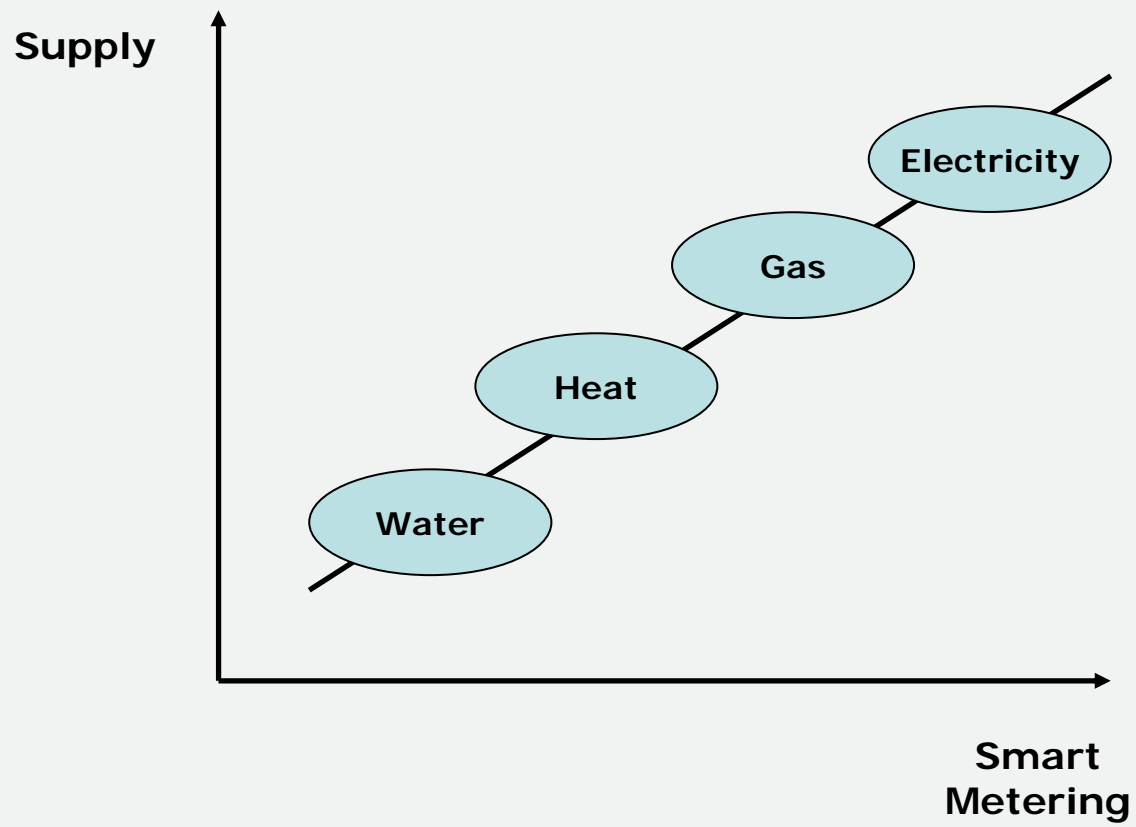
Interoperability
Power level
Transmission time
Home automation
Data security
Open standards
Frequency
Technology
Flexibility
Maturity
Range
Price
Durability
Supply
Precision
Accuracy
Segment



The final goal



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Thank You for your Attention!

