
Kamstrup – IDEEA2016

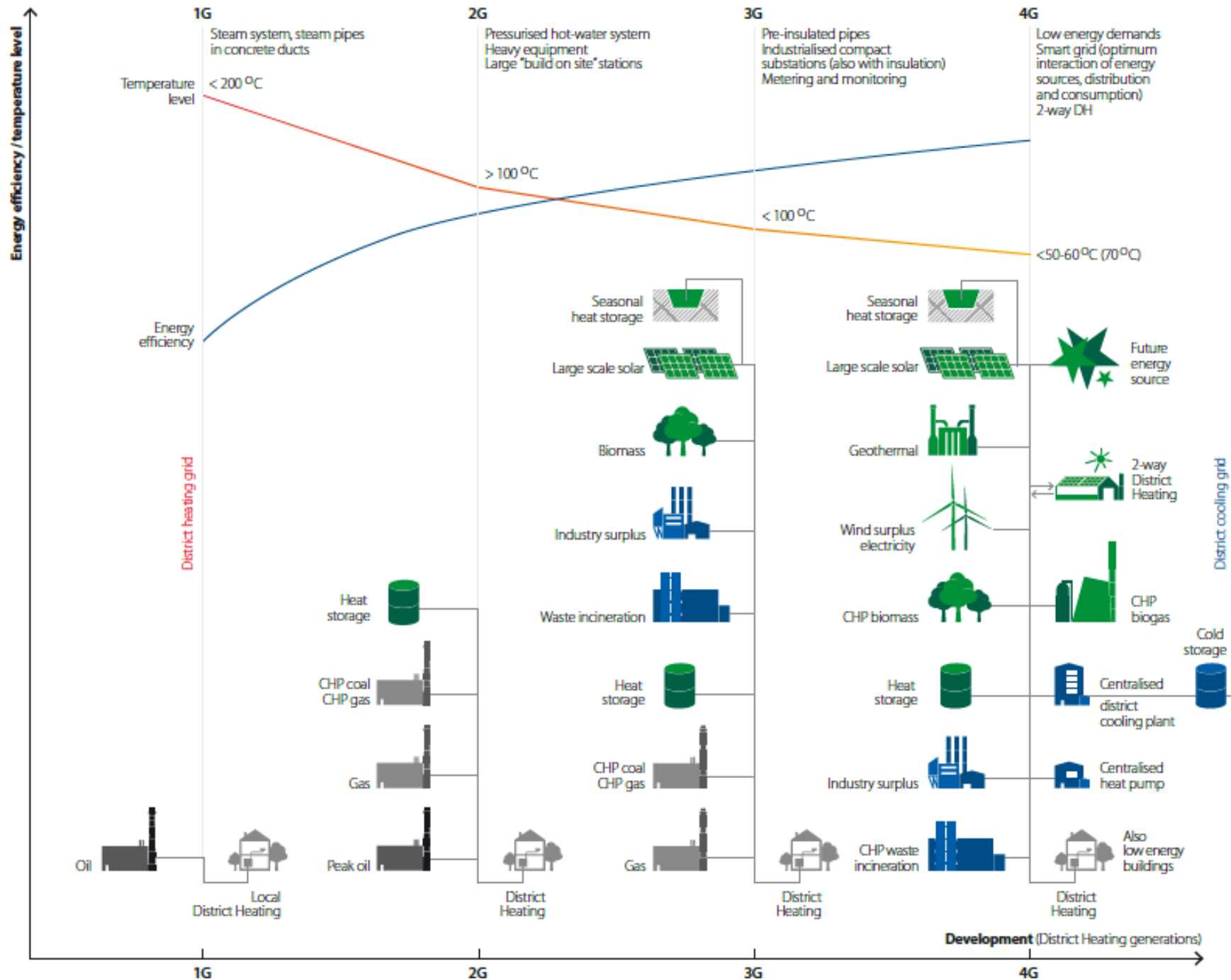
Smart- and Submetering for hot water DH system

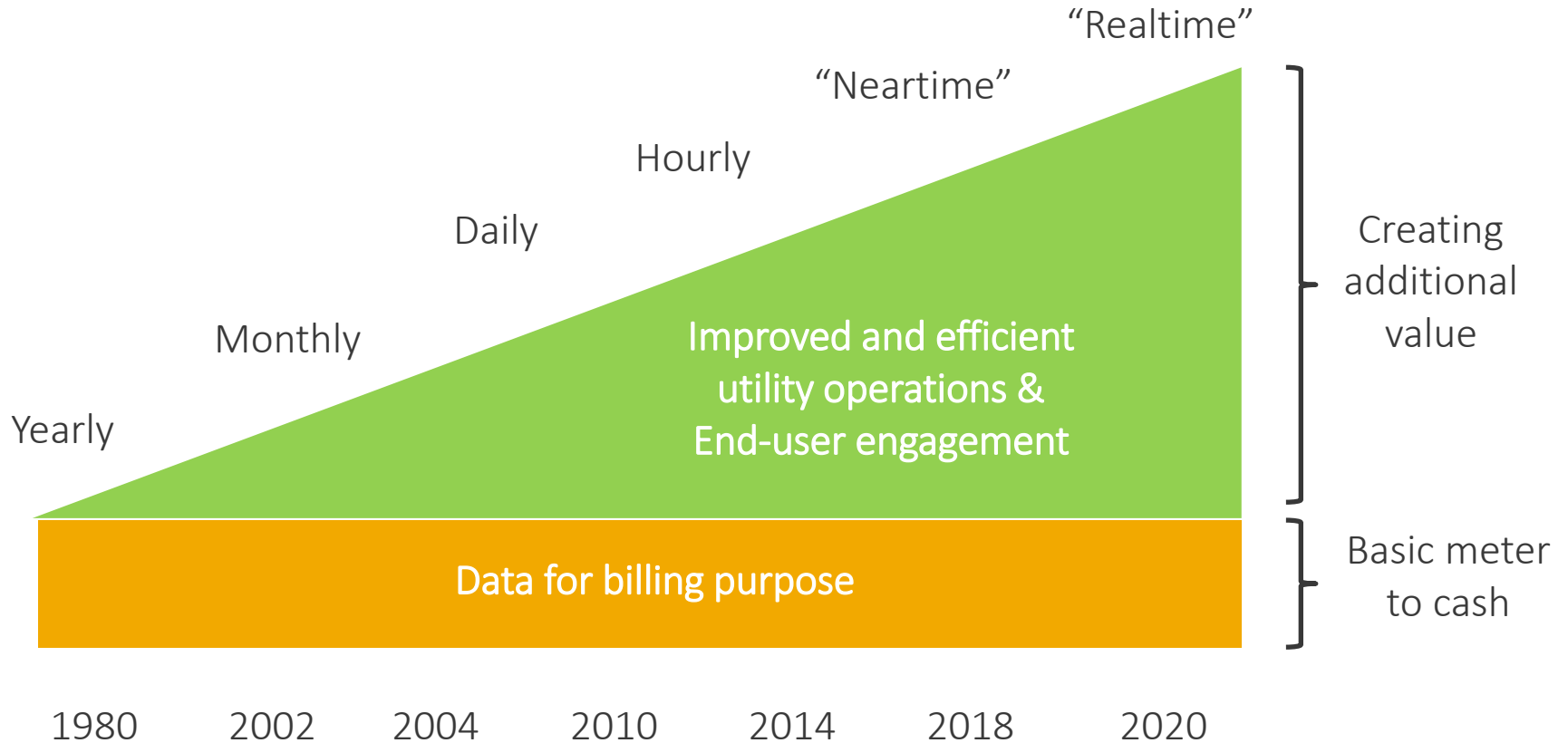
June 22, 2016

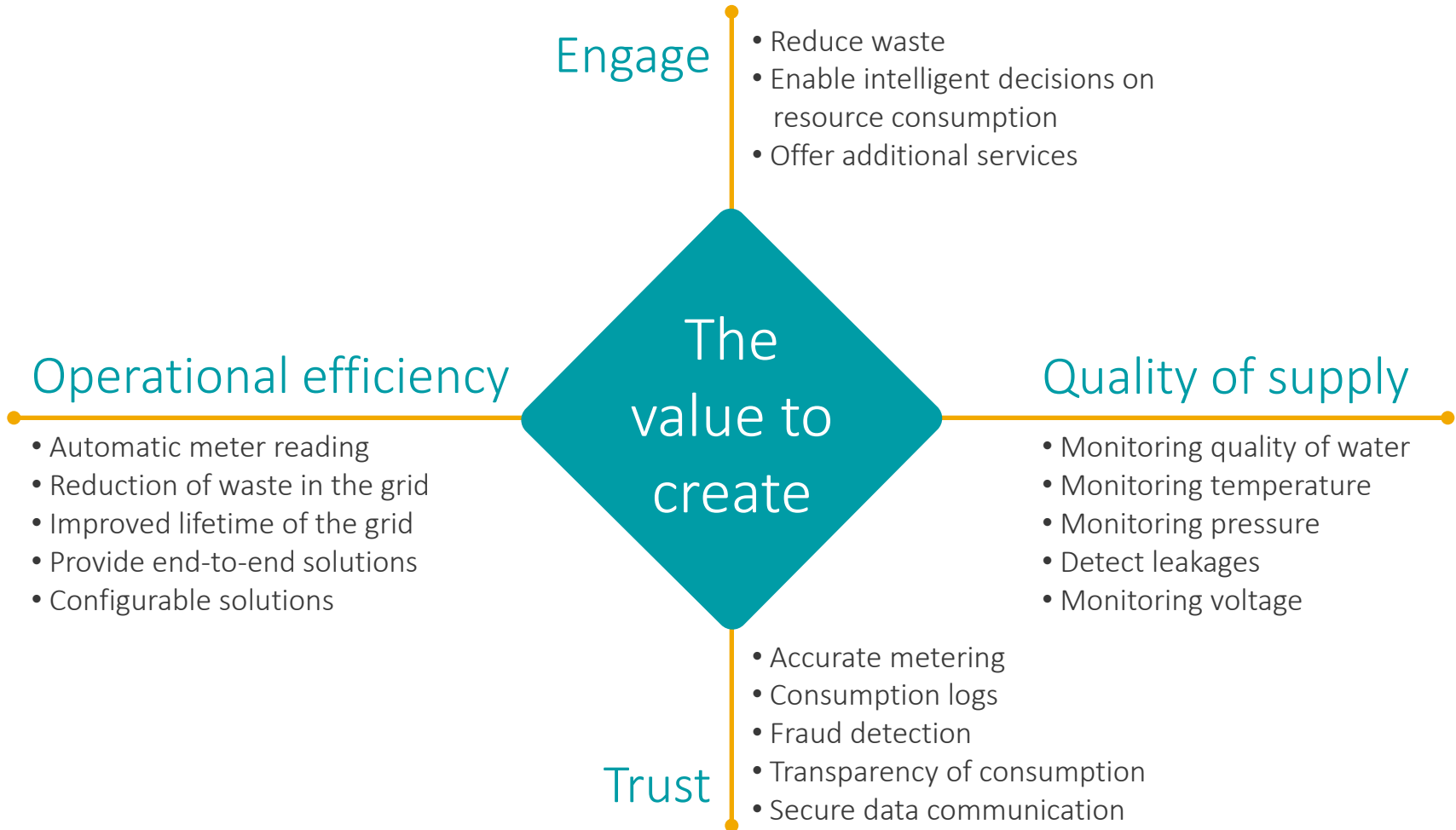


Kristian Kjeldgaard
Vice President, Sales

- 
- A background image showing a cityscape with numerous industrial smokestacks emitting thick white plumes of smoke or steam into a blue sky with scattered clouds. In the foreground, there is a snowy landscape with a frozen body of water, possibly a lake or a large pond, with some tracks visible in the snow. The city buildings are visible in the mid-ground, partially obscured by the smoke and the semi-transparent text box.
- Focus on sustainable use of energy resources – reduce fossil fuels to lower CO2 emissions
 - COP21 agreement – reduce global warming
 - Heating and Cooling is on the European agenda with EU's 1st Heating and Cooling strategy
 - Increased focus on cooling – both district cooling and in buildings
 - Heating accounts for 50% of the EU's annual energy consumption
 - EU imports of oil and gas worth more than 1 billion EUR per day - a clear challenge for the security of supply
 - HeatRoadmapEurope has indicated that market shares for district heating for buildings can be increased to 30% in 2030 and 50% in 2050

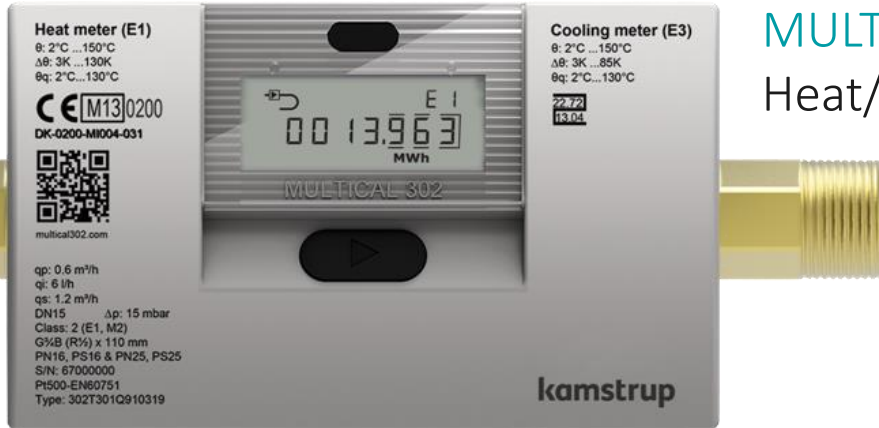






Electronic products for Smart metering

kamstrup



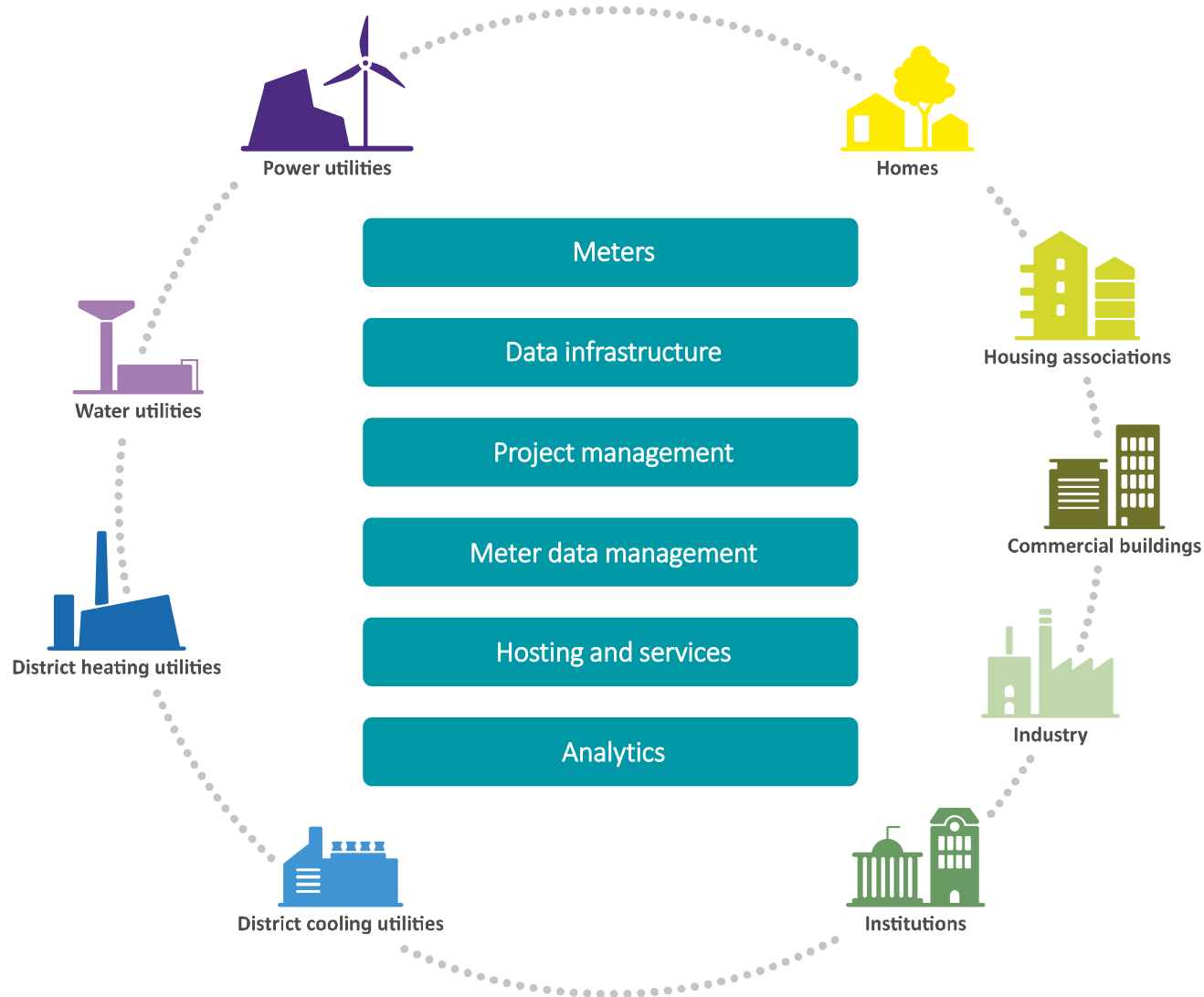
MULTICAL®
Heat/cooling meters

OMNIPOWER
Electricity meters

MULTICAL®
Intelligent
water meters

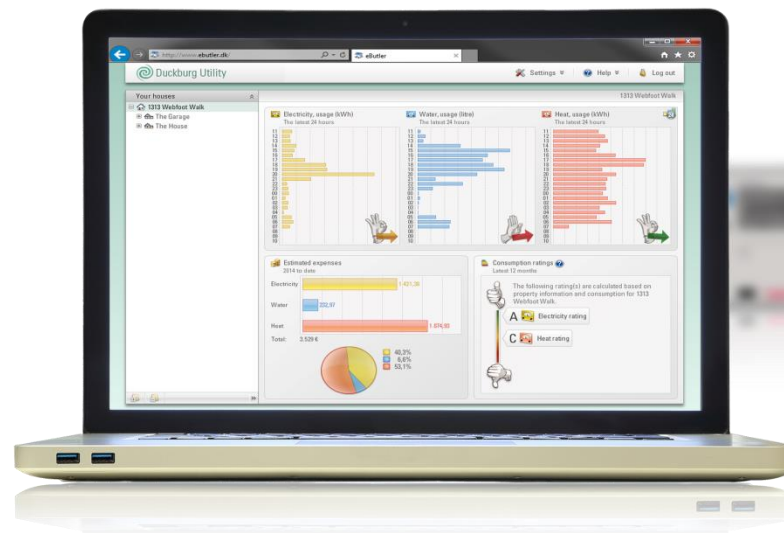


Customers and smart metering



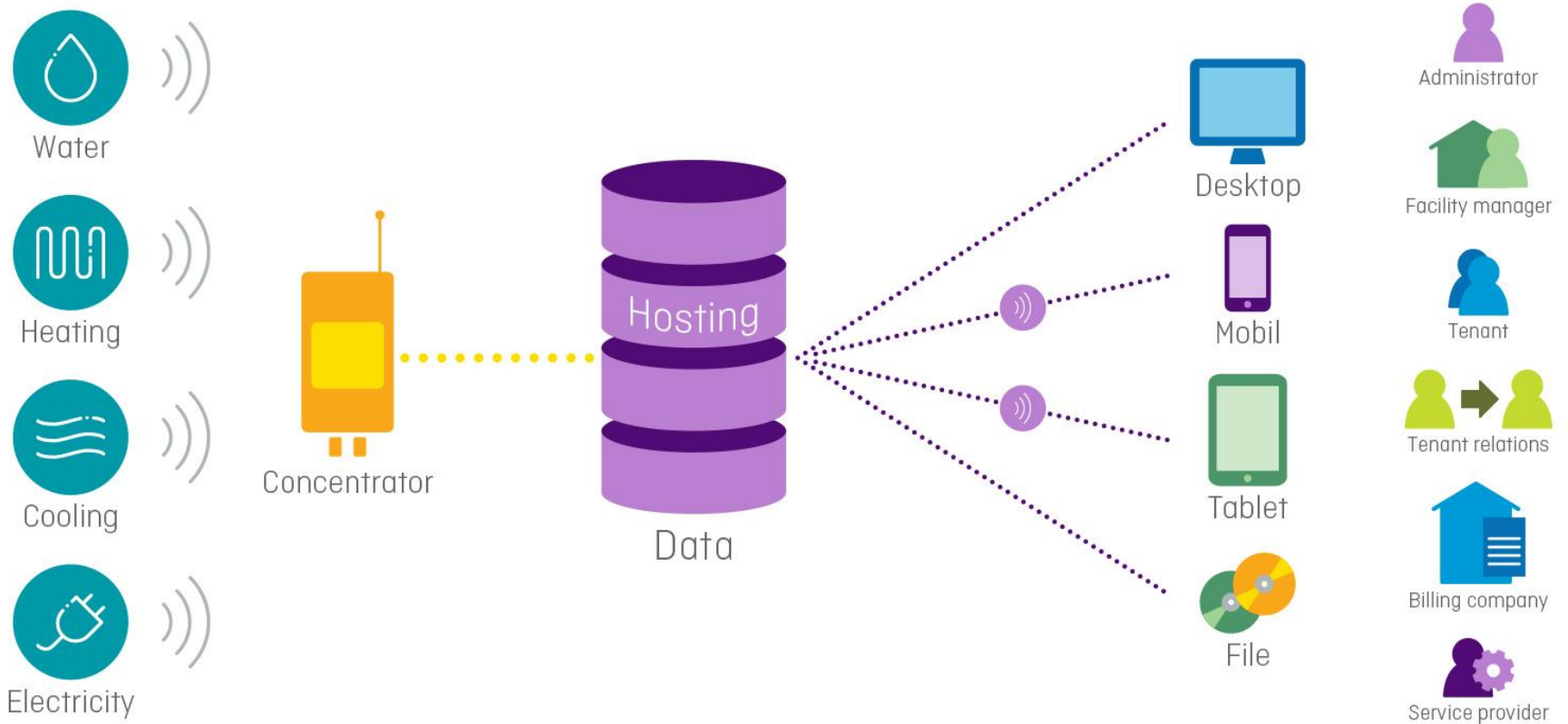
Why individual metering?

- Overview and insight into consumption of heat, water and electricity
- Accurate cost allocation - fair billing to tenants
- Access to data when needed
- Transparency – easier handling of complaints, easier trouble shooting etc
- No access to apartments necessary
- Actively steer consumption and behaviour
- Hands-on data for tenants
- Positions you as energy conscious and modern



The solution

kamstrup



Largest system in the World

kamstrup

- 53,500 heat meters, high power AMR

Value of order: € 30,000,000

Installation time: 2011 - 2016

24 installers

System hosting



About AffaldVarme Aarhus (AVA)

kamstrup

Politically controlled

Non-profit company

Annual turnover approx. € 400 Mio.

315 employees



The district heating system;

95% of the 325,000 citizens of Aarhus are supplied with district heating

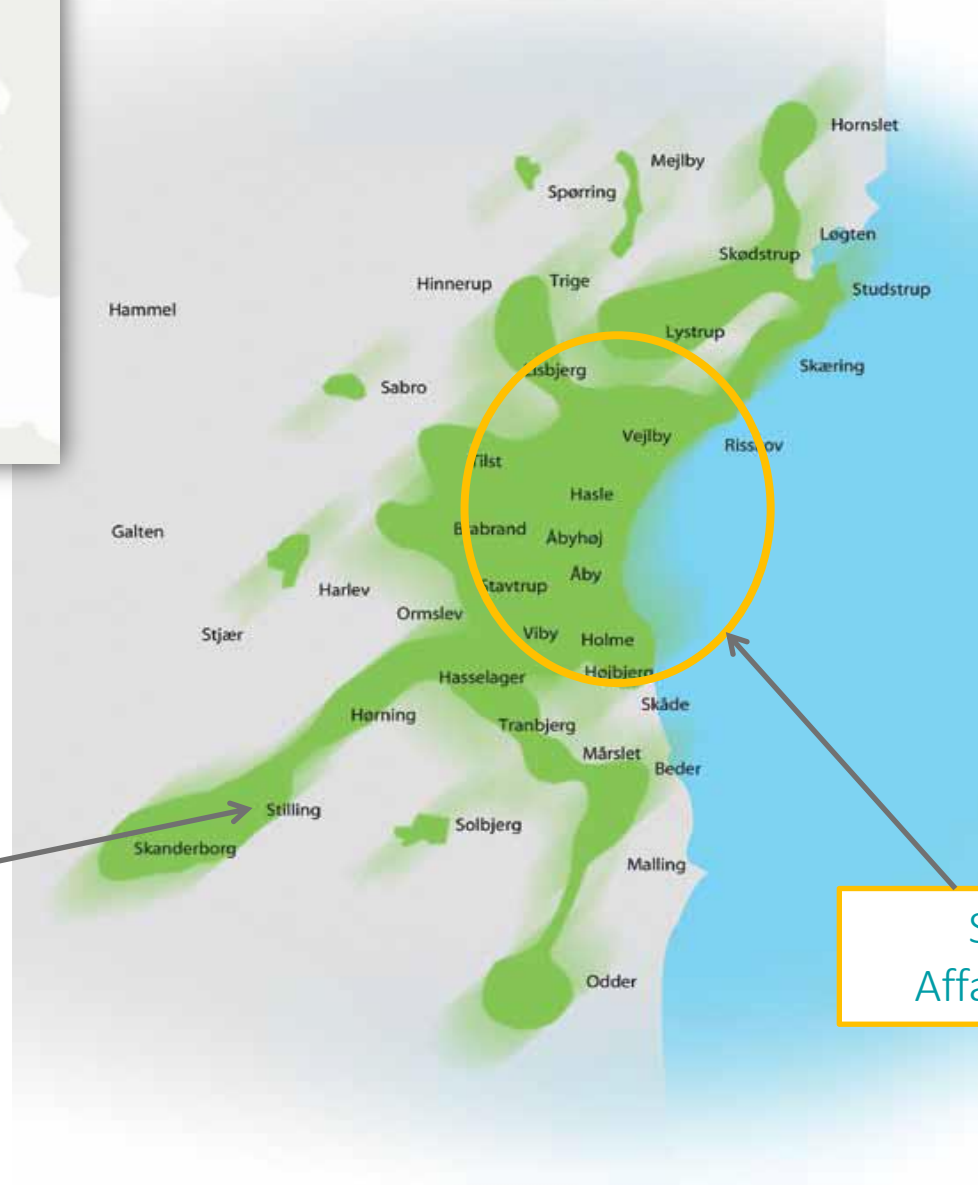
130 km twin transmission pipe 130°C/ 266°F

2,000 km distribution pipes 80°C / 176 °F

AVA alone 53,500 meters
The complete system 86,000 meters



Location of
the world's leading
supplier of
intelligent water,
heat and energy
metering solutions



Supply area of
AffaldVarme Aarhus

Heat production

kamstrup



Production:
3,500 GWh

Based on :
Wood chips
Straw/biomass
Waste
Biogas/solar

National energy agreement

- No heat production from fossil fuels in 2030
- All electricity and heat based on renewable energy in 2035
- The entire energy supply in DK based on renewable energy in 2050

Aarhus City Council made a declaration of intent:

- Aarhus as a CO₂-neutral city in 2030

AffaldVarme Aarhus ClimateHeatplan :

- CO₂ neutral heat production
- More heat producers
- Renewable energy



European tender 2011

kamstrup

- **Requirement :**

Hundred per cent correct data from 13,500 MP
Optionally 10,000 MP

- June 2011 - First tender for 13,500 MP
- April 2012 - Contract signed
- June 2012 - First meter installed
- November 2013 - Next step for 10,000 MP
- May 2014 - Second tender for 30,000 MP
- October 2014 - Second contract signed

KONTRAKT

mellem

Aarhus Kommune
AffaldVarme Aarhus
Bautavej 1
8210 Århus V

(i det følgende kaldet kunden)

og

Kamstrup A/S
Industrivej 28, Stilling
8660 Skanderborg
CVR-nr. 21 24 81 18

(i det følgende kaldet leverandøren)

Sted: *Aarhus*
Dato: *30/4-2012*
For kunden:

Sted: *Aarhus*
Dato: *30/4-2012*
For leverandøren:

[Signature]
Elsebeth Andersen
Aarhus Kommune
Bautavej 1, 8210 Aarhus V
Afdelings chef

[Signature]
Kamstrup
Kamstrup A/S
Industrivej 28, Stilling
DK-8660 Skanderborg
Tel: 89 93 16 00
Lars Bo Kristensen
Divisions Direktør

[Signature]
Per Trøjbo
Salgschef

[Signature]
Søren Hebsgaard Knudsen
Salgsingeniør

Inspire - Lead - Deliver

kamstrup

Leak detection

Meter self-control

Visualising data from meter
towards end-user

Hourly data log used to
optimise DH system

Installation

System support



Leak detection:

Total water loss per year 91,000 m³

Annual reduction of water loss per year
18,000 m³

Annual savings of € 86,000



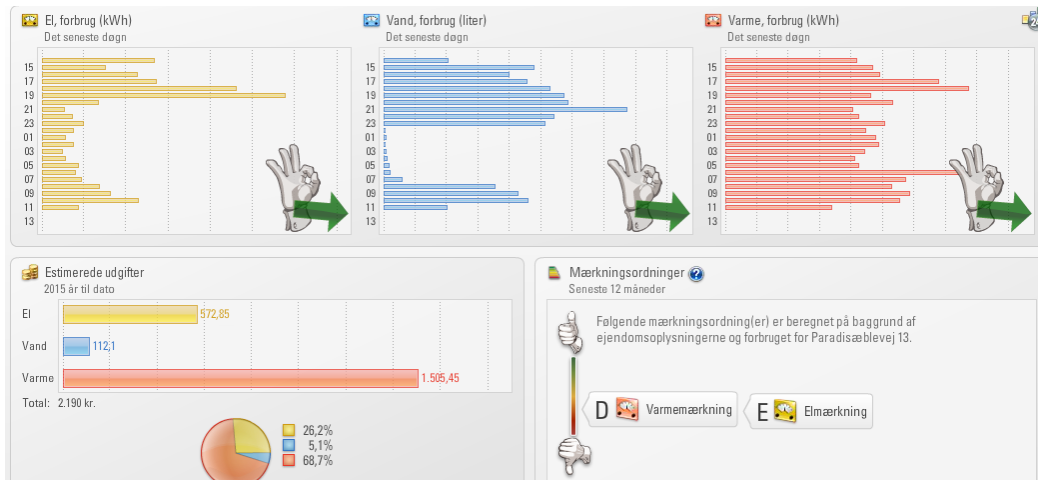
Automatic meter control

Meter health check 4 times per year
No manual meter test



The intelligent control system

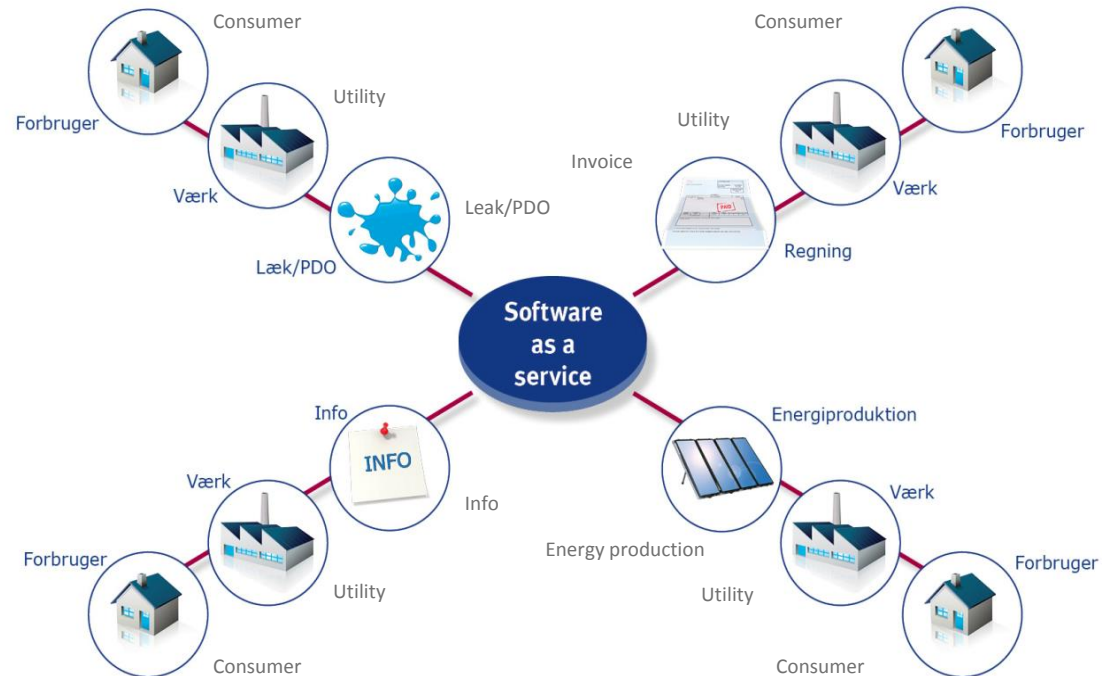
Visualising meter data



Knowing your habits makes changes possible
Full use of energy - reducing temperature
Ongoing demand for new features

The service contract

- Supply of correct data
- Hosting
- Network monitoring
- Alarms
- Meter control
- Person at customer's location once a week



- App for managing the installation job
- Where to go - address on map
- Photo before and after installation
- Several questions about the individual installation
- Bar code scanning
- Printed receipt for customer with relevant data
- Booking portal



Value for customer:

- More installations per day
- Reduction of errors
- Fewer "nobody home" visits



ALBOA Housing association Denmark

- 660 Multical 21® water meters
- 730 Multical 401® heat/cooling meters
- Energy savings, remote reading and changing consumption behaviour

“One of our divisions with 156 rental units has saved more than 50% on their water consumption after having installed individual meters. Savings of approx 6000 m3 of water – or approx €40.000”.

Niels Munthe, Energy Manager



SSHN Student Housing Nijmegen, Netherlands

- 1200 MULTICAL® 601/602 heat meters
- 1150 Kamstrup 162 electricity meters
- 1150 water meters
- Reliable and accurate data, energy savings and remote reading

“Kamstrup’s solution provide us with reliable data and based on these we can now take care of the billing ourselves. For our tenants this means reduced energy costs and therefore more attractive housing costs”.

Kees Stunnenberg – Real estate
Manager



Think forward

Kristian Kjeldgaard
Vice President, Sales

Mobile: +45 4071 9740

kkj@kamstrup.com

