
kamstrup

A global expert in smart metering solutions

Heat/Cooling
Global market leader

+10,000 customers
+90 nationalities

An industry-leading pioneer with
+30 years of
experience in digital meters, ULTRAFLOW® and remote reading

Water
Top 4 player in EMEA & US within communicating meters

Electricity
Top 3 player in Scandinavia and an established player in select European countries

+23 million meters sold globally

Heat networks has to meet future demands…

Green
Grow existing networks and build new

Integrate renewable heat sources and waste heat

Reliable
Keep highest level of security of supply under dynamic conditions

Optimize utilization of existing infrastructure

Efficient
Reduce temperatures, increase energy efficiency

Improve buildings and heat installations

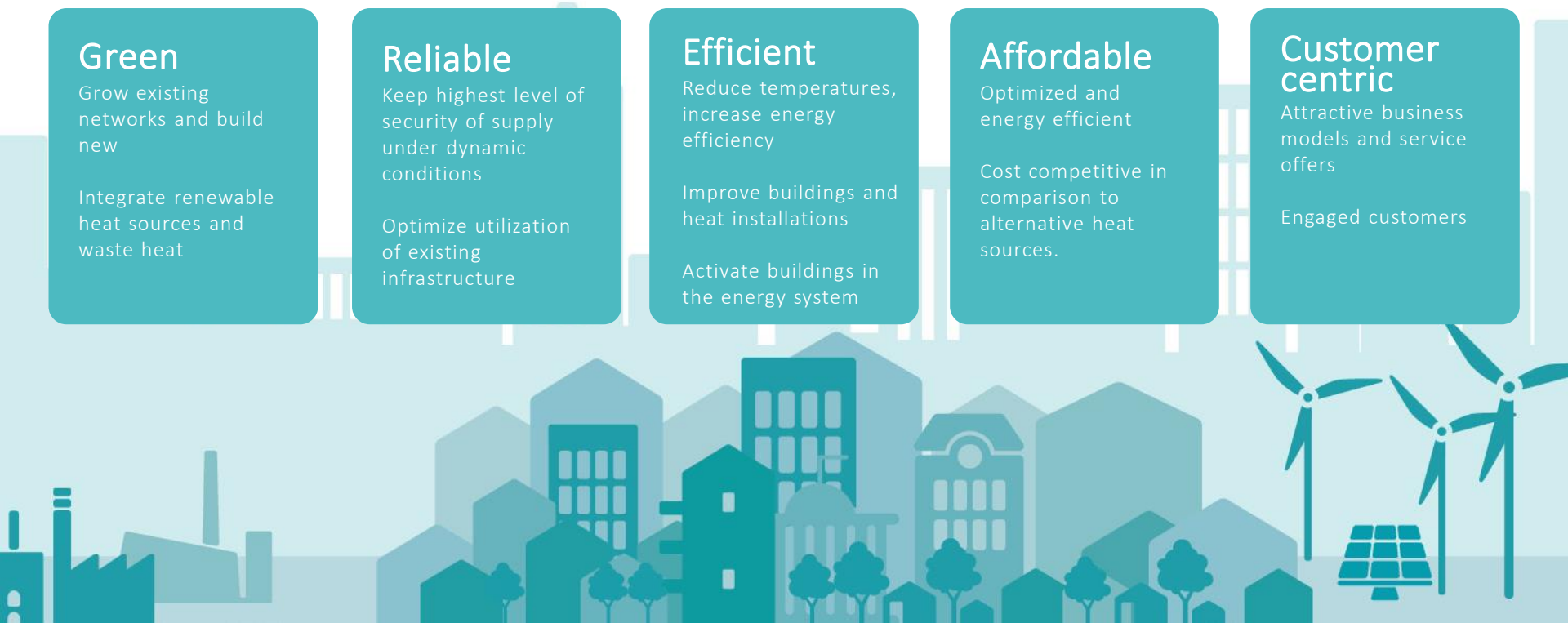
Activate buildings in the energy system

Affordable
Optimized and energy efficient

Cost competitive in comparison to alternative heat sources.

Customer centric
Attractive business models and service offers

Engaged customers



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No heat transition without a digital transition

The sweet spot
Where digital amplifies
the heat transition

Kamstrup Smart Heating Solutions

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Delivering value to our customers

Creating insights through ANALYTICS

- Meter data visualization **Discovery**
- Advanced analysis **Heat Intelligence**

Creating value through SERVICES

- Delivering connectivity & data availability — **Metering as a Service**
- Enabling low-temperature district heating — **Return Temperature Optimizer**
- Ensuring continuous meter compliance — **PDO (DK) // Superviseur (FR)**
- Optimizing pipeline renovation and asset efficiency — **Pipe Management** (ongoing co-creation)
- Increasing capacity & reducing production requirements — **Demand Side Management**
- Next challenge... — **Next Service...**

Common data platform to ensure smooth customer experience across analytics and service offerings (with standardized data integrations from 3rd party sources)

Open and interoperable, but better together

Building a data foundation

Meter Data Management

2-way communication technologies

Kamstrup partner in the UK is SAV

Metering Solutions

kamstrup

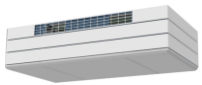
Hydronic Solutions

Danfoss

Communal and
District Heat Pumps

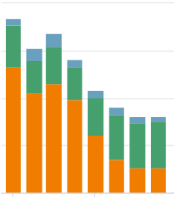
THERMO NOVA
VARMEPUMPER

FENAGY



Mechanical ventilation
and heat recovery

AIRMASTER®



Energy Monitoring
and Management

EnergiRaven

Electric Boilers

VÄRMEBARONEN

Hydronic Solutions

FloCon
Watchman

Heat network
billing solutions

KURVE
TECHNOLOGIES

Combined Heat & Power

HYBRID
ENERGI

District Energy in the Barking and Dagenham area

B&DENERGY

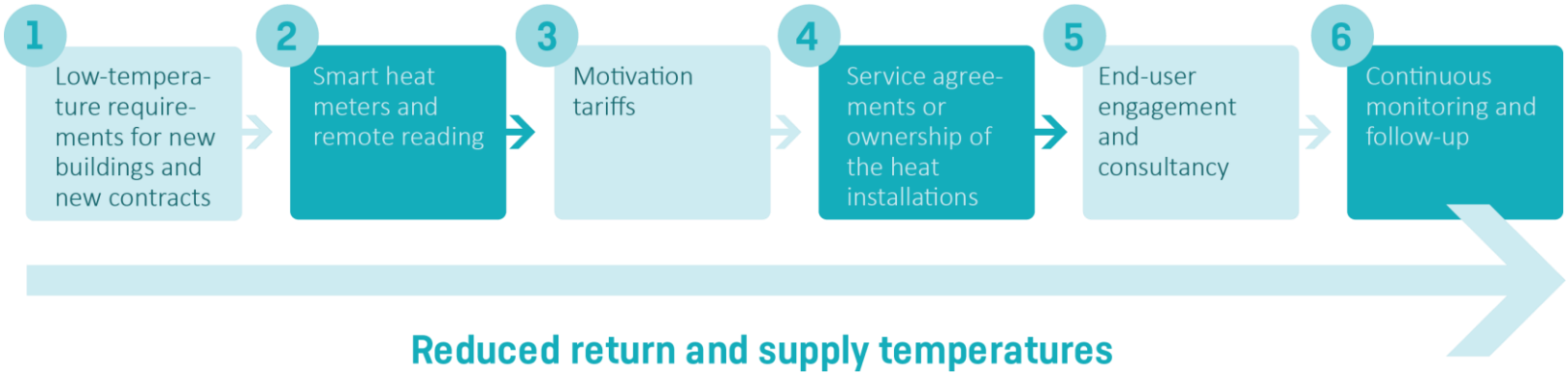
- 9000 units in total, 2000 already delivered & 7000 units to go over the next 6 years.
- Kamstrup MC 403 energy meters with M-bus disconnect module for credit control in dwellings.
- Kamstrup MC 603 energy meters in distribution and energy centre.
- Using Kamstrup READy (wired) and RavenResidential (EMS).

Example: Return Temperature Optimizer

Bringing new value adding solution to the market together with our clients

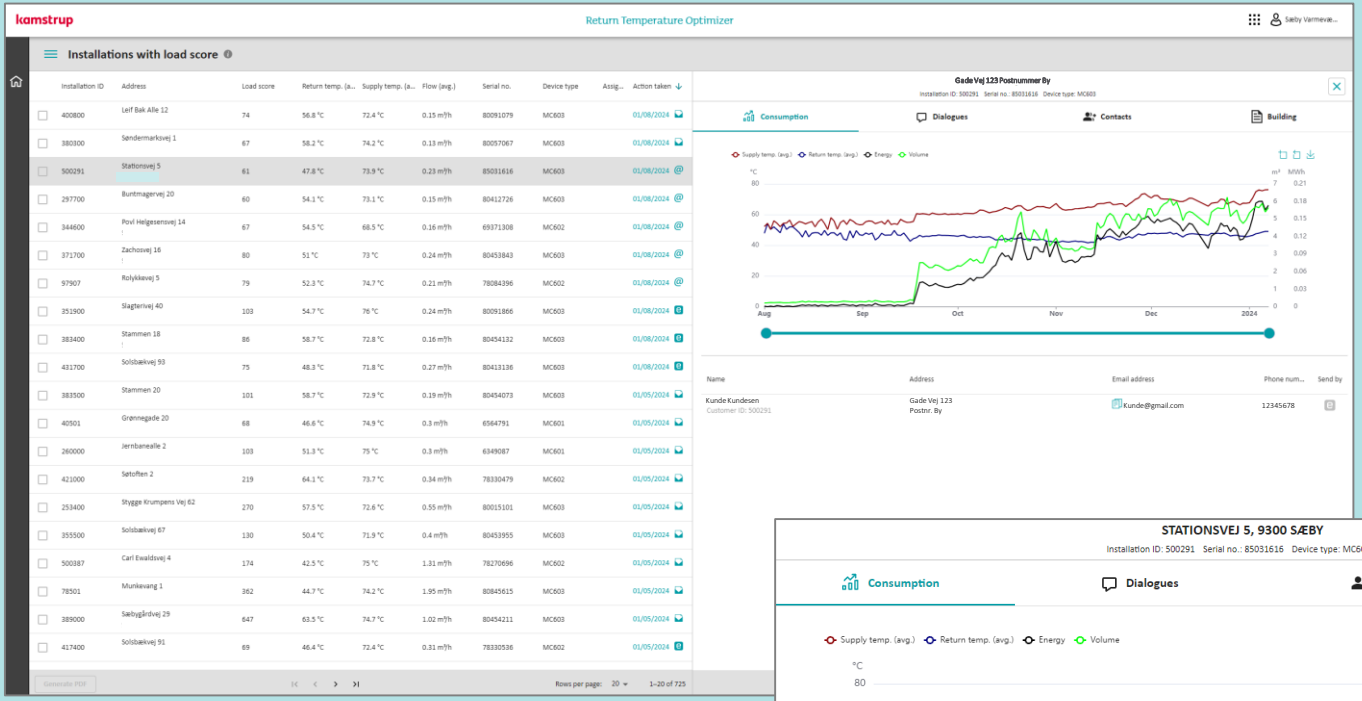
A step-wise approach to low-temperature operation

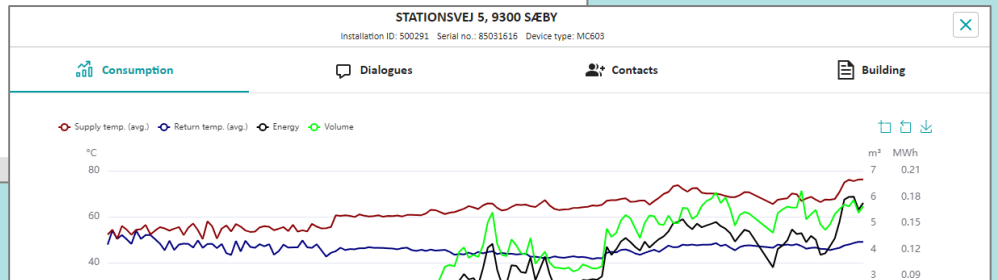
It all starts with the buildings! A lower return temperature allow you to reduce the supply temperature



Source: IEA DHC, Stepwise transition strategy and impact assessment for future district heating systems, 2019

Return Temperature Optimizer





- Continious monitoring of all heat installations. Priotazation based on load score
- Access to smart meter data and relevant building information for all installations
- Customized letters and multiple communication options: letter, email, e-Boks
- Manage customer dialouges and customer contact information
- Track results on individual building and system level

Example RTO letter

Kunde Kundesen
Gade Vej 123
1234 By

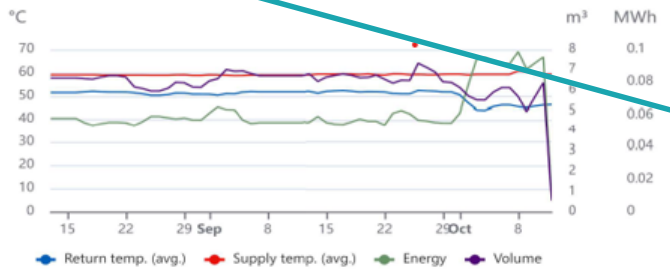
Den 13. oktober 202
Install.nr.
Målernr.:
Kunde nr
Kontakt:
Energirådgivningscenter
Tlf.:

Din returtemperatur er for høj, og du kan forvente en merudgift på din fjernvarmeregning

Når din fjernvarmeinstallation udnytter varmen bedst muligt, kan vi levere en billigere og grønnere fjernvarme med væsentlig reduktion af CO2. Returtemperaturen er den temperatur, fjernvarmevandet har, når det løber ud af bygningen (retur). Jo lavere returtemperaturen er, jo bedre udnytter fjernvarmeinstallationen varmen i fjernvarmevandet.

Vi har fjernaflæst din fjernvarmemåler på adressen: **Gade Vej 123** Her kan vi se, at returtemperaturen på fjernvarmen i perioden 06-10-2023 til 13-10-2023 i gennemsnit har ligget på 45.8 °C (følg den blå linje i grafen nedenfor). Da denne returtemperatur er højere end forventet kan du blive pålagt en merudgift på din fjernvarmeregning.

Ud fra den aflæste returtemperatur på 45.8 °C og dit fjernvarmeforbrug på 15.28 MWh svarer det til en årlig merudgift på omkring 6,703 kr.



Det kan du gøre som ejer.

Du er som ejer selv ansvarlig for din fjernvarmeinstallation. Vi anbefaler derfor, at du tager kontakt til din foretrukne VVS'er for at få ham/hende til at servicere din installation. Så undgår du formentlig en merudgift fremadrettet, og måske du endda kan opnå rabat.
Benyt evt. hjemmesiden www.fjernvarmensserviceordning.dk til at finde en VVS'er i dit område.

Det kan du gøre som lejer.

Er du lejer, anbefaler vi, at du tager kontakt til din udlejer eller din vicevært.

HUSK: Dine varmevaner påvirker også din returtemperatur. Læs vores gåde råd på bagsiden.

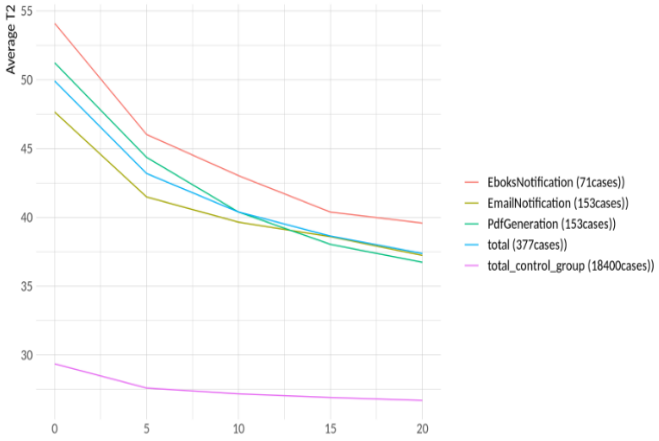
- 7 days volume weigthed average return temperature = **45,8 °C**
- Estimated extra yearly cost based on motivation tariff = **6.703 DKK (900 Eur)**

Results: Sæby Varmeværk

Return Temperature Optimizer results

9th of October 2023 – 28th of February 2024

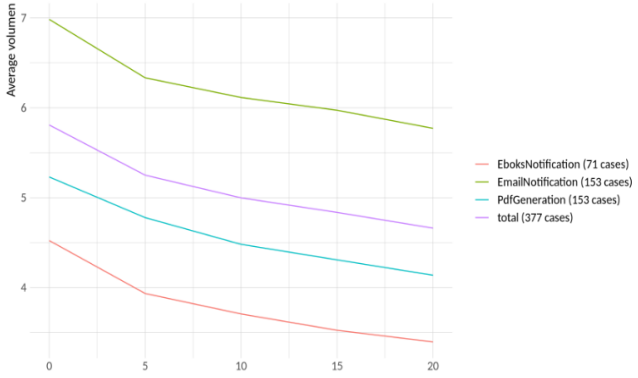
- 47% of notified end-users took action
- **Average 11.1 °C drop** in the return temperature of the notified end-users
- The achieved effect can be seen across different building categories (BBR)
- 20.8% decrease in delivered volume at the notified end-users
- 19.3% of the total volume has been affected by the decrease of 11.1 °C
- **3.3 °C drop** in the volume-weighted return temperature throughout the network



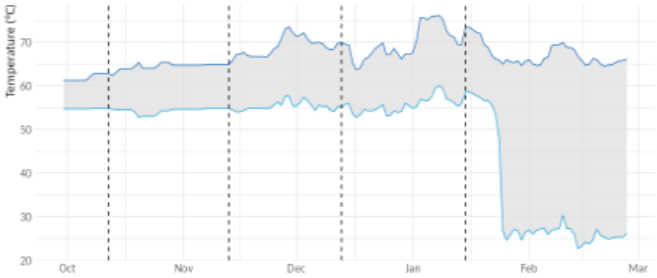
Impact measurement adjusted for control group

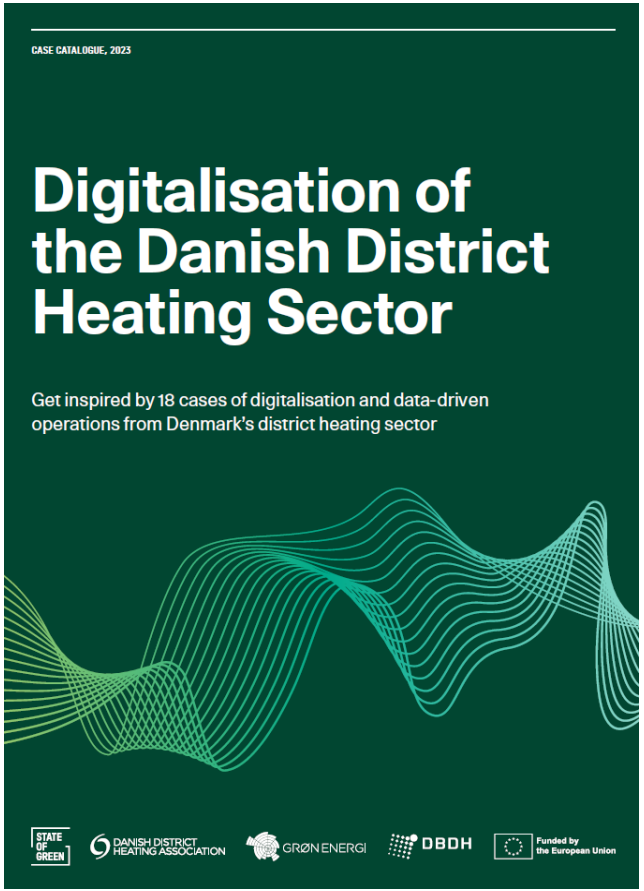
Sæby Varmeværk 2023-10-09 - 2024-02-27

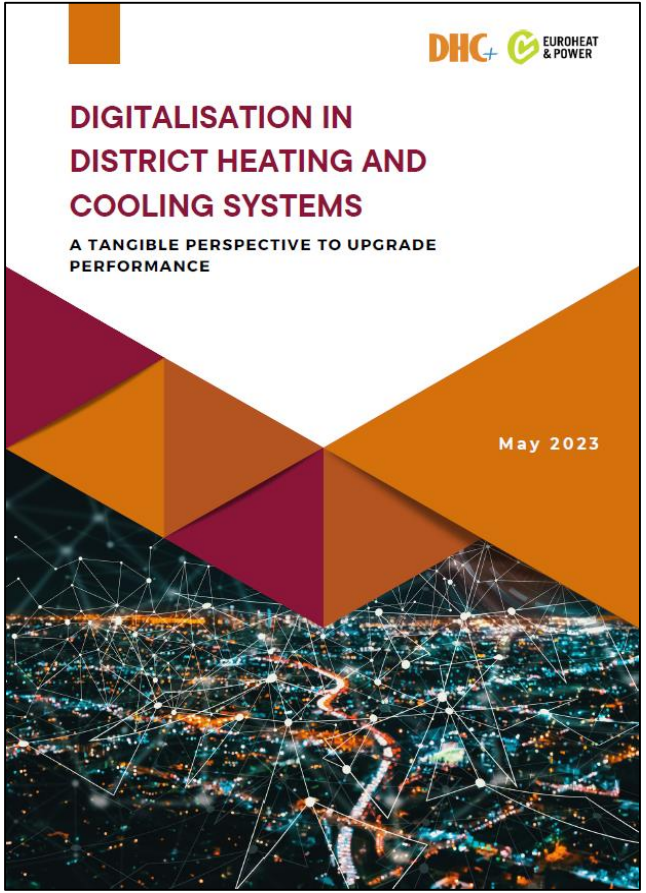
Type	N	Impact
PdfGeneration	153	12.57
EboksNotification	71	14.25
EmailNotification	153	9.07
Total	377	11.11



EXAMPLE of a specific address in Sæby




CASE CATALOGUE, 2023
Digitalisation of the Danish District Heating Sector
Get inspired by 18 cases of digitalisation and data-driven operations from Denmark's district heating sector
STATE OF GREEN
DANISH DISTRICT HEATING ASSOCIATION
GRØN ENERGI
DBDH
Funded by the European Union


DHC+
EUROHEAT & POWER
DIGITALISATION IN DISTRICT HEATING AND COOLING SYSTEMS
A TANGIBLE PERSPECTIVE TO UPGRADE PERFORMANCE
May 2023

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Thank you for your attention

The pressure on utilities is increasing…

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Balance demand and supply in a smarter and more efficient way

Deliver on growth targets and transformation plans

Deal with increasing complexity when going green – towards decentral production and sector coupling

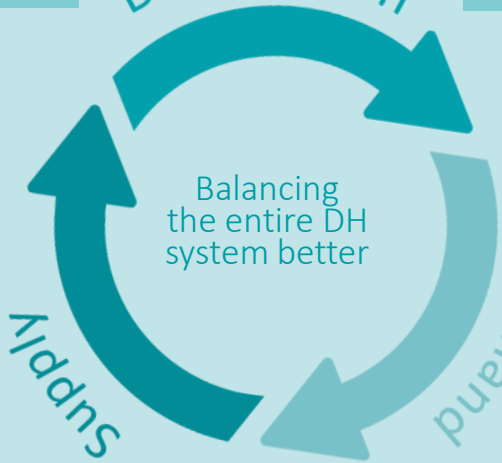
Build a digital infrastructure to meet future challenges and needs

Lower temperatures to efficiently integrate renewable heat sources and waste heat

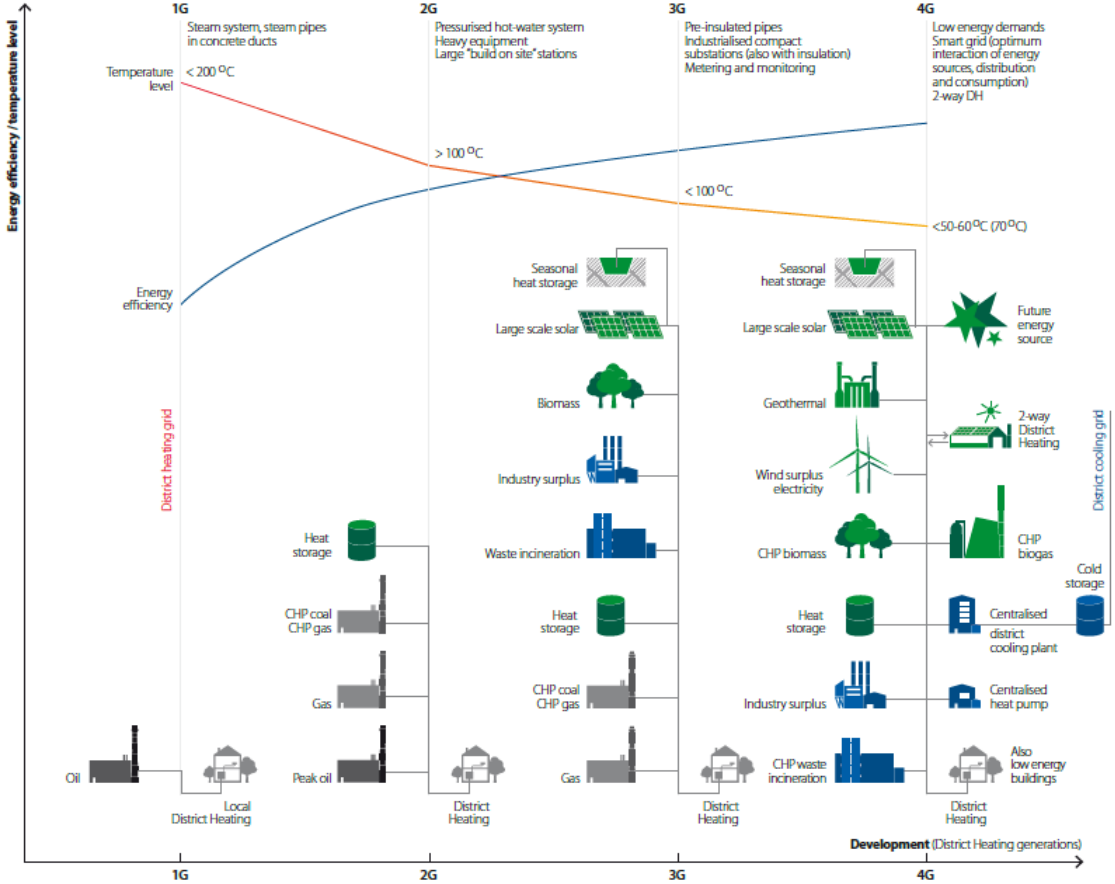
Increase customer-orientation and succeed with new attractive business models

Bridge competence gap and develop the right skills to meet future demands

Utilize existing capacity best possible to stay competitive



Eliminate inefficiencies across the entire value chain



Complexity in district energy is increasing towards 4G district heating

Source: 4dh.dk

Motivation tariff example, Viborg Fjernvarme, DK