Perspectives toward a smart DH-system

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Shortly about Aalborg Forsyning, Energi

- Aalborg Varme A/S – with around 45,000 district heat customers/meters – covers 98.8% of all potential buildings and supplies 6,683 TJ heat
- Aalborg Bygas A/S – town-gas utility company
- Aalborg Fjernkøl A/S – district cooling company, starts 2020
- Aalborg Vand A/S – town water utility
- Nordjyllandsværket A/S – powerplant, that produces electricity and heat fueled by coal. The plant has a maximum output of 383 MW electricity and a maximum heat output of 420 MJ/s
- Green Hub Denmark A/S – a public/private partnership that works with green innovation, sustainable business models, big scale tests and demonstration to handle climate changes and challenges.
Visions and goals

- Aalborg as a national **Green Testcentre and business development**
- **Developing Nefovej** for a united utility site for Aalborg
- Partnerships for **demonstration sites and startups** on Nefovej
- New business opportunities, e.g. sun and wind
- **Green transition and new heat production** before 2029
- Complete **strategical projects** in the energydivision
Green energy – or what?
Green energy – renewable energy
2020

Coal

Surplus heat

Waste

Heat pumps

2028

Geothermal energy

Surplus heat

Boiler

Wind

Sun

Waste

Biomass

Biogas

Seasonal heat storage
Aims and goals

- Green transition – decentralized production, prosumers etc.
- Reducing grid temperature
- Reducing netloss
- Reducing heat consumption at our consumers by 30%
Perspective in a short summary

- Use the district heating system as a ‘battery’
  - In popular - produce heat when the wind blows
- Making consumers VIP consumers
  - Integrating consumers, distribution, transmission and production
- Make it possible to displace the energy consumption
  - Use energy when prices are low – and save when prices are high
- Differentiated prices
Analysing meter data project
- Using data from remote read meters, building information, energy labels, weather data, consumer information
Adressing consumers with deviant consumption
Customer lookup dashboards screenshots
Watts for the overview

Download Watts gratis til iPhone og Android

Tilføj din måler med dit kundenummer og din adgangskode. Dit kundenummer finder du på din regning. Din adgangskode har du enten allerede oprettet på 'Min Side', ellers kan du oprette en ny på 'Min Side' ved at logge på med NemID. Du ændrer adgangskode under 'Rediger kontaktinfo'.

Har du glemt din adgangskode til Min Side, så nulstil din kode her.

[Images of App Store and Google Play Store logos]
Detecting probable causes for inefficient cooling

- Too small heating surface or not using all radiators
- Defect valve in heat exchanger
- Defect in heat exchanger
“Dear Jonathan,

We have detected, what seems to be a defect in your heat exchanger. The defect occurred on February 3rd and is currently costing you around 18 DKK per day. We estimate the yearly cost of not fixing the defect to be around 5,000 DKK.

You can get a new heat exchanger by …”
Detecting leaks in service pipes

We can detect leakages in service pipes by looking at the supply temperature observed from service pipes in nearby buildings. If the heat loss per meter is significantly greater for the service pipe than for service pipes close by in the network then there is a leakage.

Supply temp: 65,3 °C
Supply temp: 63,1 °C
Supply temp: 65,5 °C

Possible leakage in service pipe