DHC Perspectives in Tallinn

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Utilitas

Leader in Estonian district heating sector

- Estonian holding company investing in Estonian utilities sector
- Networks in 8 cities across Estonia
  - Tallinn, Maardu
  - Keila, Haapsalu, Rapla, Valga, Jõgeva, Kärdla
- 500 km of district heating networks managed
- 4 400 buildings heated
- 39 boilerhouses with total installed capacity of 1.1 GW
- Biomass-fired CHP with 25MW electric and 67MW thermal installed capacity

▶ 1.8 TWh of heat and 170 GWh of electricity sold annually
▶ Market share in Estonia approximately 1/3
Largest component in national energy balance

- 38% of total energy consumption
- 58% of households’ energy consumption
  - Of which district heating above 50% in total and ca 70% in urban areas
  - Largest utility bill, ca 6.6% of household expenditures (electricity 3.5%)

▶ Best suited for implementing European and national policies on energy efficiency, energy independence and promoting renewable energy sources

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**Total energy consumption in Estonia, 2013**
- Heat: 43%
- Electricity: 34%
- Transport: 20%
- Other: 3%

**Energy consumption in households, 2013**
- Households: 39%
- District heating: 34%
- Transport: 26%
- Electricity: 16%
- Gas and solid fuels: 5%
- Wood and peat: 19%

Source: Statistics Estonia
District heating in Tallinn

Talinna Küte supplying heat to 2/3 of Tallinn

- 3640 buildings heated by Tallinna Küte
- 130 thousand - 70% of all Tallinn households – using district heating
- All sales subject to price regulation by Estonian Competition Authority
Networks and key production facilities

426 km of district heating networks across the city

Historically 3 network areas, interconnected in 2011 to transfer base load

60% of heat sold supplied from 3 CHPs in Eastern Tallinn

25 MW Maardu

282 MW

220 MW

181 MW

KRISTIINE KM

60% of heat sold supplied from 3 CHPs in Eastern Tallinn

426 km of district heating networks across the city
Reversing fuel mix in production

Reducing share of fossil fuels to just 20%

- Replacing natural gas with local biomass and waste incineration
  - 165 million m³ imported natural gas replaced by local fuels
  - EUR 50 million decrease in annual fuel imports to Estonia
  - Reducing annual CO₂ emissions by more than 200 thousand tons

80% produced from non-fossil fuels by 2018
Utilizing benefits of cogeneration

Generating enough electricity to supply all households using DH, as well as all public transport needs.

Electricity generated in CHPs supplying Tallinn DH network

- Heat to 130,000 households
- Electricity via Heat to 130,000 households
- Green electricity to public transport

60-70% supplied from CHPs by 2018
Future challenges

Efficiency, reliability and competitiveness

• Coping with decreasing volumes resulting from energy efficiency measures
  • 1.5% annual volume decrease in existing customer base, somewhat compensated by new connections
• Increasing system efficiency
  • Remote metering for all clients in 2015-16
  • Renovation of networks with largest diameter networks fully renovated in 2015
  • Potential introduction of capacity fee
  • Optimising flow temperatures
  • Replacement of substations in co-operation with customers
  • Exploiting cogeneration potential
• Tapping district cooling potential

Environmental

• Maximising use of local biomass in energy production
• Modernising existing production facilities to keep up with environmental standards and emission targets
• Contributing to fulfilling national and European targets in environmental protection and climate policies

City of Tallinn applying for 2018 European Green Capital award

Estonia to hold presidency of the Council of the EU in January-June 2018
Utilitas stands for usefulness and functionality. The group’s mission is to provide solutions suitable both to our customers and environment, producing and distributing energy with highest possible efficiency and utilising to the largest extent possible renewable and local sources of energy.