District Energy in the City of Gothenburg

- An Overview

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Gothenburg

Sustainable city – open to the world
Gothenburg

• Founded in 1621
• 500 000 inhabitants
• 65 000 students
• District heating was initiated in 1950’s
• Planning ahead
  • By 2050 the city will have a sustainable and fair level of carbon dioxide emissions
  • Policy: a holistic view and to make the best of resources already available
A growing city

From large town — to green city where nothing’s far

- Vision Älvstaden
- Traffic Strategy
- Green Strategy
- Expansion Planning

Jointly indicate the direction in which Gothenburg will develop by 2035
VISION:
A sustainable Gothenburg
Sulphur emissions have fallen by 99 % and nitrogen oxide emissions by 89 % since 1985.
DH Development in Gothenburg
DH in Gothenburg Today
Gothenburg Emissions, Power Production
Todays DH and Electricity Cogeneration

District Heat

- Renewable Energy: 20%
- Fossil Energy: 8%
- Waste Heat: 72%

3558 GWh DH sales in total

Electricity

- [VALOR] GWh

735 GWh Electricity sales in total

- Windpower
- Bio CHP
- NG CHP
History of Energy in Gothenburg

- 1846 – The Gothenburg Gas Company is established in Rosenlund
- 1900 – Electric grid and production is established in Rosenlund
- 1952 – District Heat, and the first CHP plant is built at Rosenlund

_Private enterprises were taken over by the community in order to provide for the whole city_
Community ownership a key factor

- Equal service level in the community
- High credit worthiness
- Profitable business can provide financial support needed for new business segments (i.e. District Heat in the 50’s and 60’s)
- Can take on long term loans (in our case from EIB, European Investment Bank), and new financial instruments
- Can apply for state subsidies for environmentally progressive projects
Waves of change

- DH is a now a mature business in Sweden
- >90% market share in urban Gothenburg
- Energy efficiency measures active
- Competition increases from other technologies, i.e. heat pumps

Source: Swedish Energy Agency report ER2013:24
Energy 2020

• Communication from the Commission in November, 2011

• A strategy for competitive, sustainable and secure energy

• First priority: “energy-efficient Europe”
EU27 and Member State average district heating market shares of total national residential and service sector heat markets

There is enough waste heat produced in the EU to heat EU’s entire building stock
Thank you!

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