



#### **Heat networks in Europe**



- Business Development Manager
- DBDH







# Promote District Energy for a Sustainable City Transformation

- Go-to platform
- Established in 1978
- 75+ members
  - Leading actors in Denmark
  - 2/3 Manufacturers, Consulting Engineers
  - 1/3 Utilities
- Magazine HOT | COOL
- Seminars, training, exchanges of know-how in DK and abroad
- www.dbdh.dk







## Remarks

- Danish district heating is a complex structure developed over 100+ years
- "The Danish Model"
  - Works well ....
  - Can inspire others
  - Delivers carbon -results







#### DH and Carbon in Denmark





# District Heating in Denmark

- Half of heat demand (50%+)
- 2/3 of all households (1.736.668 / 64%)
- All homes in mayor cities (e.g Copenhagen 98%)
- Prices: Competitive, even declining slightly
- 64+% renewable heat
  - Growing step by step
  - Biomass is big and will go away again
- Soon no coal





#### **Residential heating**

Energy consumption for heating houses





## Carbon

- DK general carbon agenda: 70% reduction by 2030
- Heating: 0,00% (same for electricity)

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• 500.000 more homes connected to DH of some kind





#### DH or what?

Competition to gas

- In new developments: Competition is *something else* (not gas!)
- Conversion from gas: Gas is the competition price
- Gas is an obsolete technology



## DH Developments today

- Smart Energy systems
  - Hydrogen future technology
  - Electricity (heat pumps)
- More storage mega size
- Industrial surplus heat
- All sustainable solutions
- Efficiency in all areas
- Digitalisation
  - End user involvement





# DH is resilient

- Manage to adapt to new green requirements
  - Oil to coal and gas
  - Gas and coal to green
  - Green to sustainable (geothermal, solar, surplus, electricity)
- A proven technology that continues to develop
- The cheapest option in cities according to e.g. Heat Roadmap Europe



### DH in Germany and Netherlands





## Baden Württemberg

- Obligatory heat planning for 103 largest municipalities (of app 1.100)
- Testing *how to* in 3 pilot areas

- Strong support from regional government (goal setting)
- Struggling to determine the best delivery model



# Hamburg

- Sold DH system to Vattenfall years back
- Voted to buy back
- Agreement to buy back to the city last year
- Price app EUR 950 mio (GBP 833 mio)
- But why?

- Hamburg wants to be in charge of and control their critical
- infrastructure



## Netherlands

- A lot of gas (nearly 90%)
- Ban on gas from own production with in few years
- Focus on DH and hydrogen
  - Would like to use the gas infrastructure
  - Focus on hydrogen (expensive and an immature technology)
- Heat law under development

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• Struggling to determine the best delivery model



## Conclusion

- Heat is needed also in the future
- Define your goals and opportunities
- Think long term this is long term investments
- Think city-wide

- Think smart systems
- There is no *one-technology-fixes-everything*.... Not even DH 😳



# Thank you

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