District Heating – an Important part of a Sustainable Future

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DBDH
Promote District Energy for a Sustainable City Transformation

• 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
Future Targets

• National
  – 70% CO2 2030 reduction vs 1990
  – 2035 Carbon Neutral Heat
  – 2035 Carbon Neutral Electricity
  – 2050 Transport ??

• Copenhagen and many other cities
  – 2025 Carbon Neutral
70% CO2 REDUCTION IN 2030
GAS vs DH

- New developments: Competition is not gas—Gas is an obsolete technology
- Conversions: Gas prices are the competition
The Future

– A central part of Smart Energy Systems & 2050 targets
– Integrate surplus wind and solar electricity
Connectability

• Technical (e.g. pressure, temperature)
• Fuel sources – any available
• Customers – any available
Technically DH is NOT Complicated

Constant technical developments and energy efficiency!

- DH is fuel agnostic!
  - Like your own boiler – a lot bigger and a lot smarter!!
  - Moving “free” heat to a useful place
  - Extremely well proven technology/system/idea!!
Flexibility is the key

• Fuel, sources, storage, consumption

• Decades, Seasonal, Weekly, Daily, Hourly

• Investment and Operation
Future Sustainable Heating

- Lower Temperature – towards 4G
- Improved technology in all parts of the value chain
- FUEL:
  - Storage
  - Power to Heat - Industrial Heat - Heat Pumps - Geothermal
  - Bio Mass – great now, and then ???
- Consumer interaction
- DH is the integrator!
- Optimisation – metering, soft ware, systems
- Consolidation – companies and grids
From 0% wind to 65-90% wind
Advocate benefits of DH

• Get your model right
  – Who’s to benefit (fuel poverty, carbon, jobs)
  – Connectability
  – Discuss risk and divide it
  – Advantages of Scale
  – Long term perspective

• Technically it works, even better and better
Get started!

• Learn from others

• Organize

• Be innovative
Thank you

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Connectability

• Economy
  – Agreed principle
  – Who benefits

• Legal and ownership
  – Flexible today
  – Flexible in the future
  – Merger, management, sell off, production...
Low hanging fruits

We want all the apples!

Picking apples is a complicated and complex STRATEGIC job😊
Conclusion

• Make your choice
• Avoid silos – inclusion is key
• Make sure future development is possible
• Find a way to include all over time
• Understand effects of high IRR and short payback time
• Go for it 😊