A new basis for heat sector planning in Schleswig-Holstein: development of a regional heat atlas

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In cooperation with:

Supported by:
Energy System Transition

- Renewable Energies
- Utilisation of excess heat
- Sector coupling

Agenda

- Heat sector status quo
- Heat mapping and District Heating
- Conclusions
Schleswig-Holstein (SH)

- A couple of larger cities like Kiel, Lübeck and Flensburg
- High population density around Hamburg
- Some smaller cities
- Rural areas
Status quo 2016

Heat Supply in Schleswig-Holstein [%]
- District Heating: 86.9%
- Individual Heating: 13.1%

DH production shares in Schleswig-Holstein [%]
- coal, mineral oil and others: 47.4%
- natural gas: 19.1%
- biogas and biomass: 19.2%
- waste (biogenic and not biogenic): 14.2%

Source: Schleswig-Holsteinischer Landtag, Drucksache 19/818, 2018
Map of district heating systems in SH

https://danord.gdi-sh.de/viewer/resources/apps/WNK

➢ Where does district heating system expansion make sense?
Challenges for DH systems in SH

• Low heat prices of individual solutions
• Individual decisions and fear of dependency
  ➢ Low connection rates and consumer acceptance
• Lack of transparency, knowledge and local heat planning as well as common decision making
Existing heat demand maps

Unpublished heat demand maps:
• for SH by Malte Schwanebeck
• for Kiel by Stadtwerke Kiel
Comparisons

Example: Heat consumption (final energy) of households in Flensburg.

Source: Own figures based on Peta 4.2, Pezzutto et al. (2019) and Schwanebeck
An online heat atlas for SH with cost curves

https://tinyurl.com/WPSH-EUF
An online heat atlas for SH: Outlook

https://tinyurl.com/WPSH-EUF
Applications for a heat atlas

• Shed light on an otherwise obscure sector
• Work as a reference point for the development of a heating sector
• Disseminate information to various levels of stakeholders: citizens, public administration, developers
• Create a platform for exchange of knowledge related to the heating sector
• A first step towards a public heat plan.
Thank you for your attention.

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