

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

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# Wärmeplan Schleswig-Holstein



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# Agenda

Energy System Transition



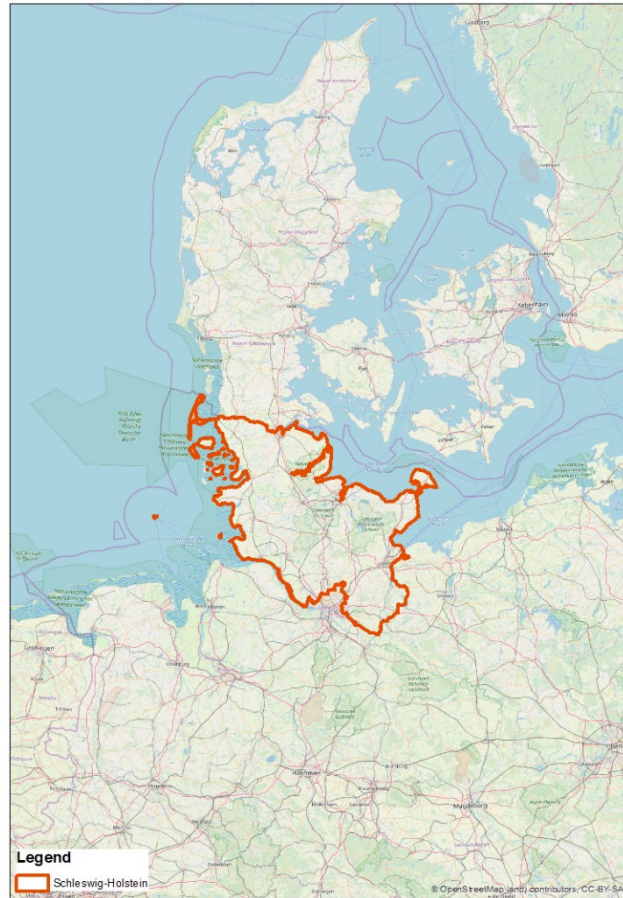
Renewable  
Energies

Utilisation of  
excess heat

Sector  
coupling

- Heat sector status quo
  - Heat mapping and District Heating
  - Conclusions

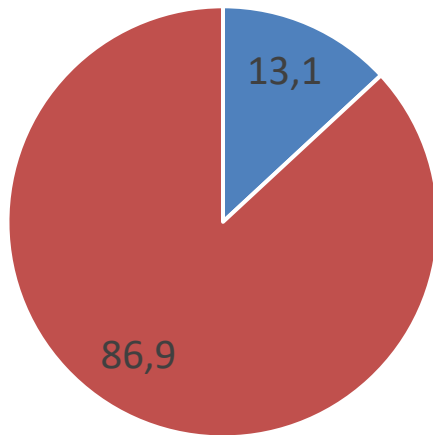
# Schleswig-Holstein (SH)



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

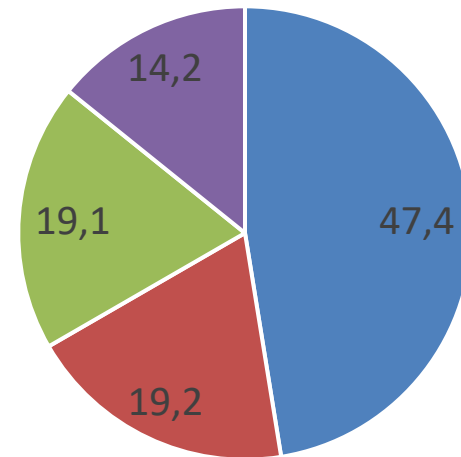
# Status quo 2016

Heat Supply  
in Schleswig-Holstein [%]



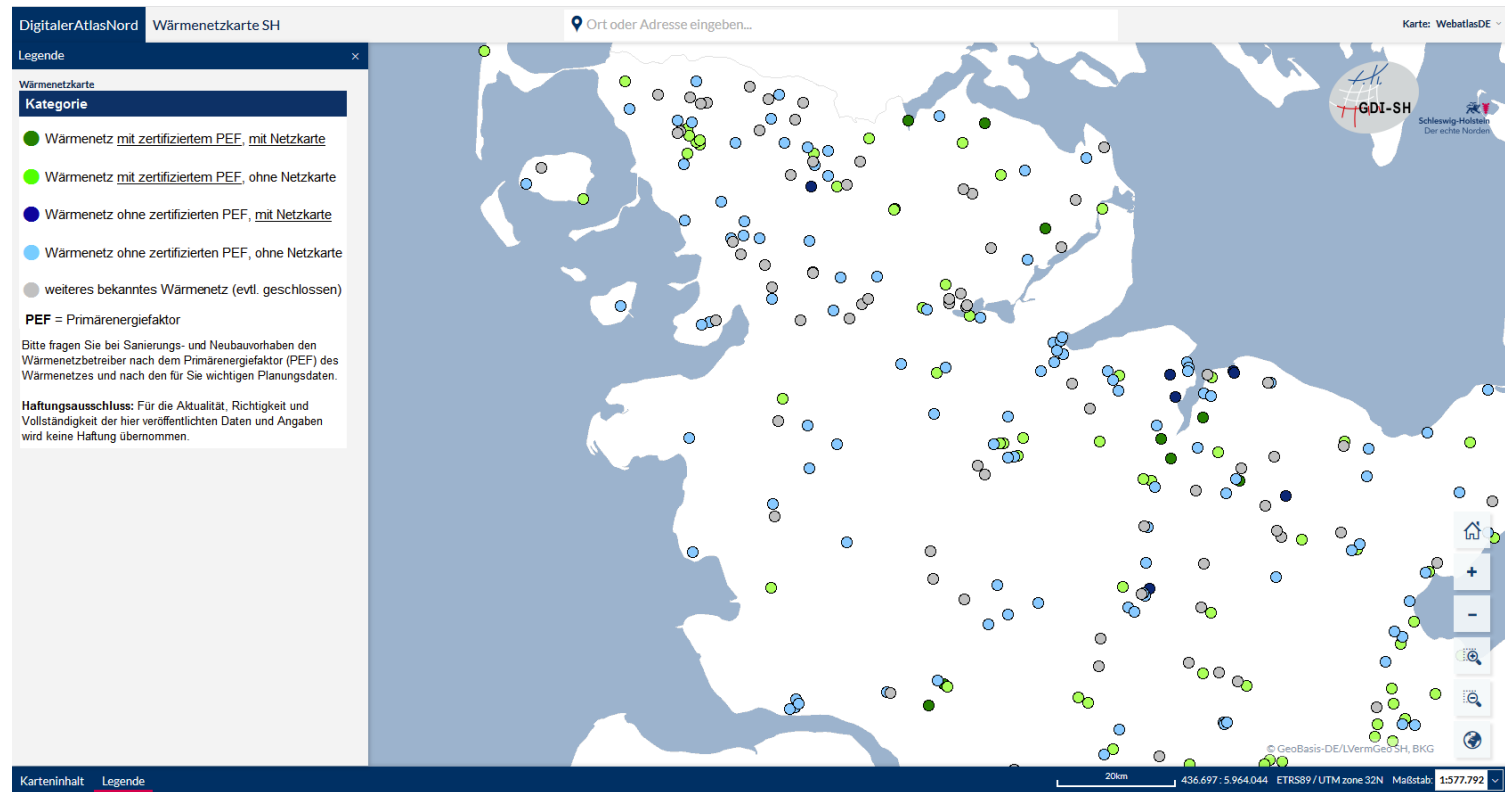
■ District Heating ■ Individual Heating

DH production shares  
in Schleswig-Holstein [%]



■ coal, mineral oil and others  
■ natural gas  
■ biogas and biomass  
■ waste (biogenic and not biogenic)

# 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

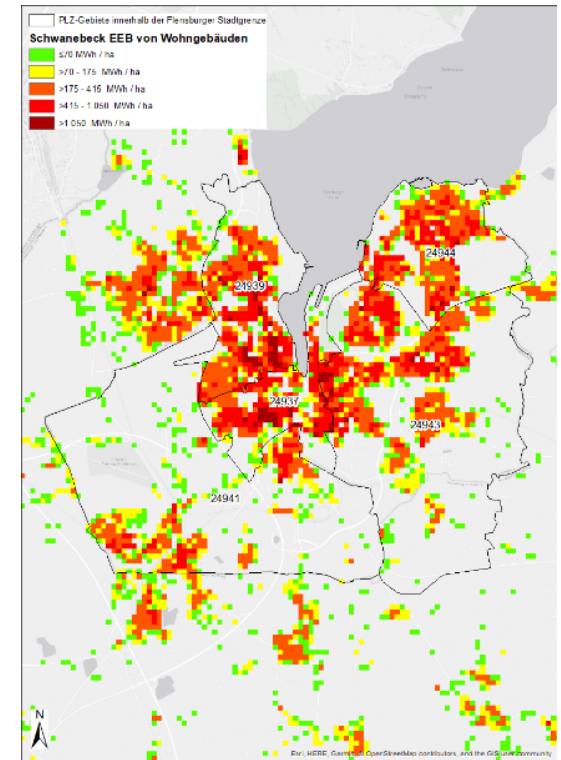
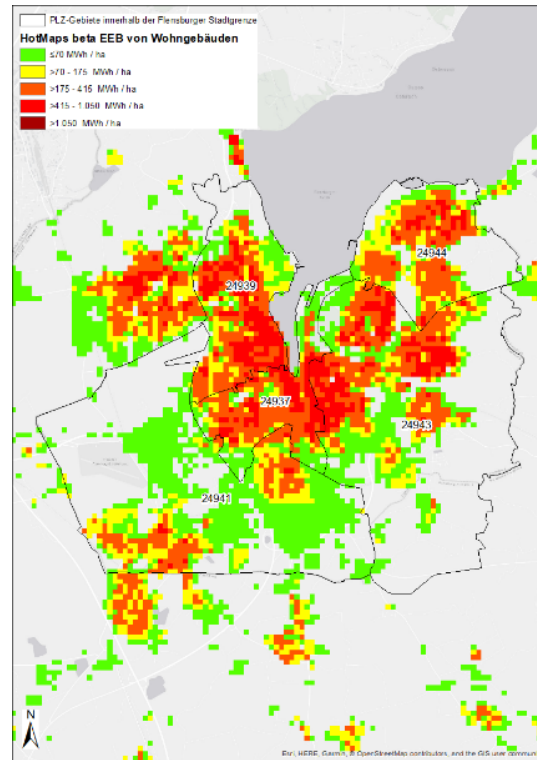
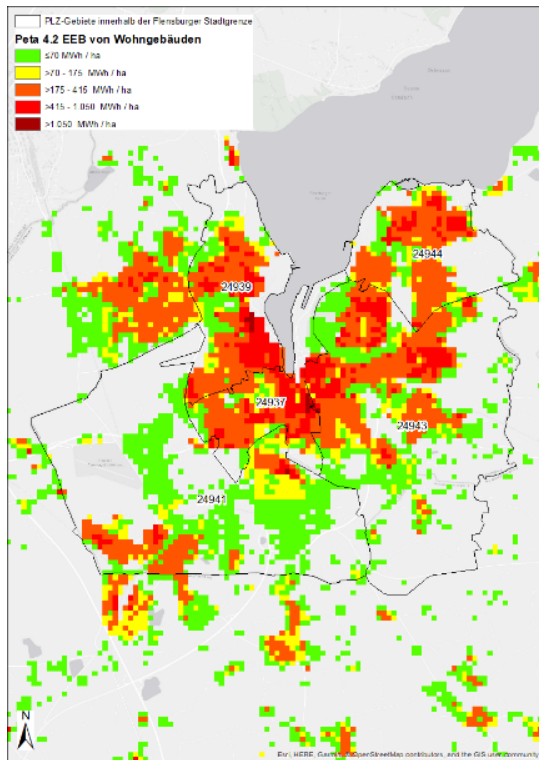


Unpublished heat demand maps:

- for SH by Malte Schwanebeck
- for Kiel by Stadtwerke Kiel



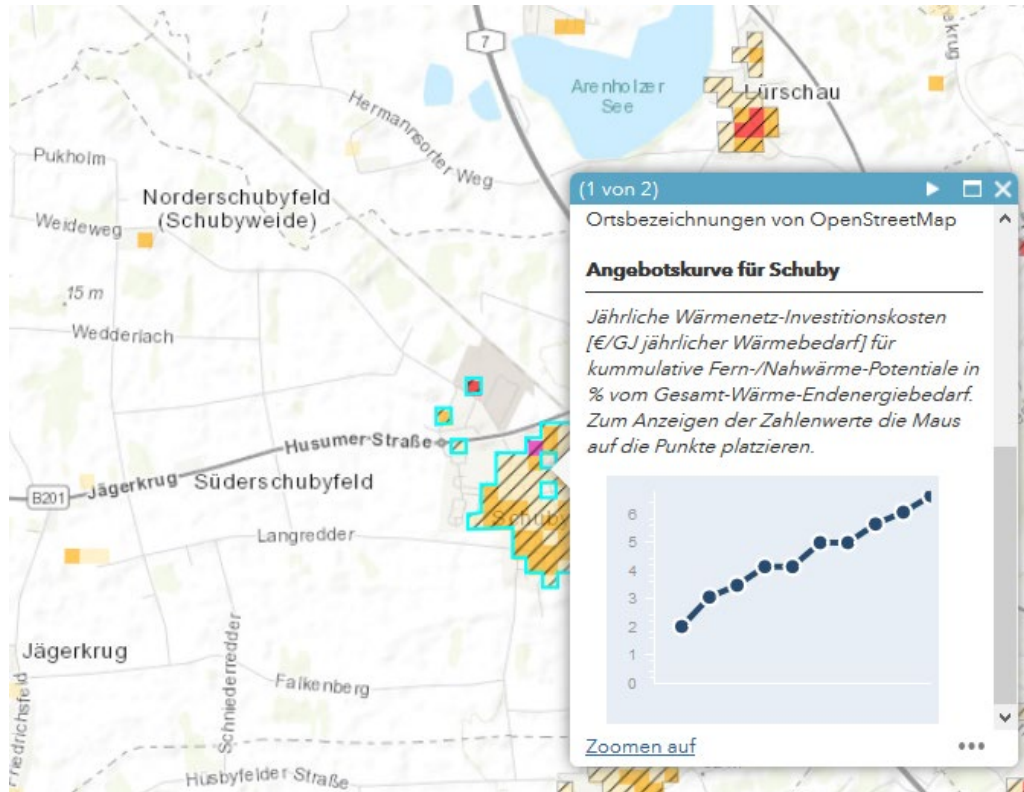
# Comparisons



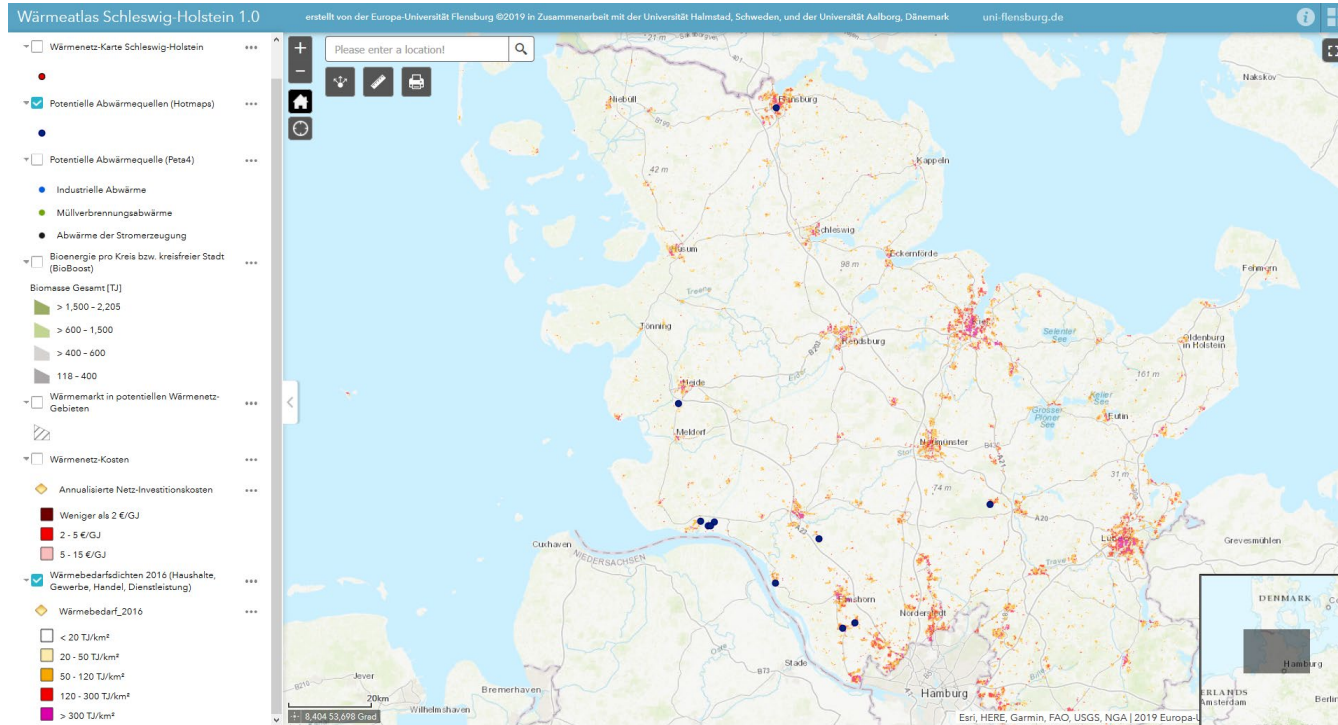
Example: Heat consumption (final energy) of households in Flensburg.

Source: Own figures based on Peta 4.2, Pezzutto et al. (2019) und Schwanebeck

# An online heat atlas for SH with cost curves



# 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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