6th International Conference on Smart Energy Systems
6-7 October 2020
#SESAAU2020

Fernwärmeatlas

An Online Tool to Collect Information about District Heating Systems in Germany

presented by Johannes Pelda

HAWK Faculty of Resource Management Göttingen

DEKADE-F-WAERME

Supported by:
Federal Ministry for Economic Affairs and Energy
on the basis of a decision by the German Bundestag

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1. Introduction
2. Features of the FERNWÄRMEATLAS
3. Solarthermal potential and industrial waste heat potential
4. Outlook

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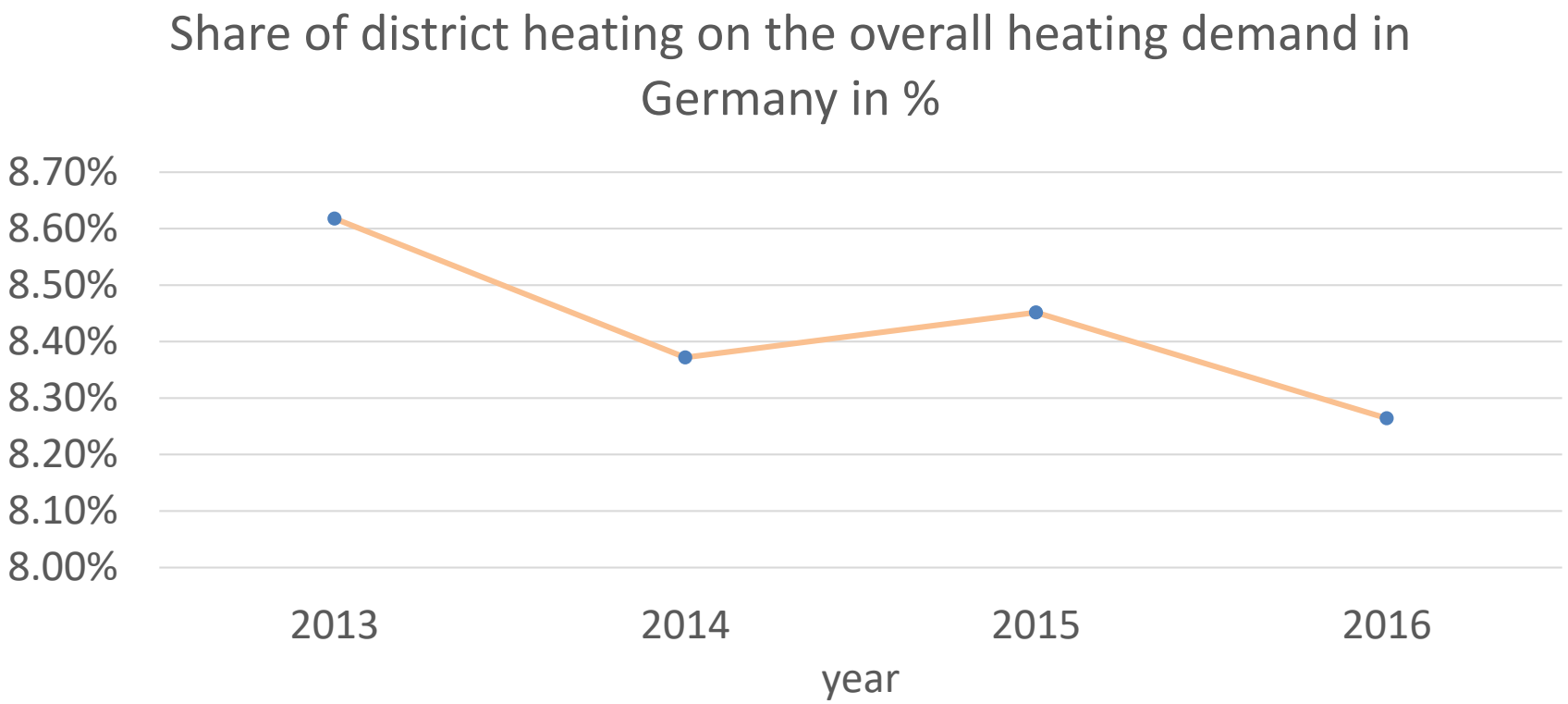
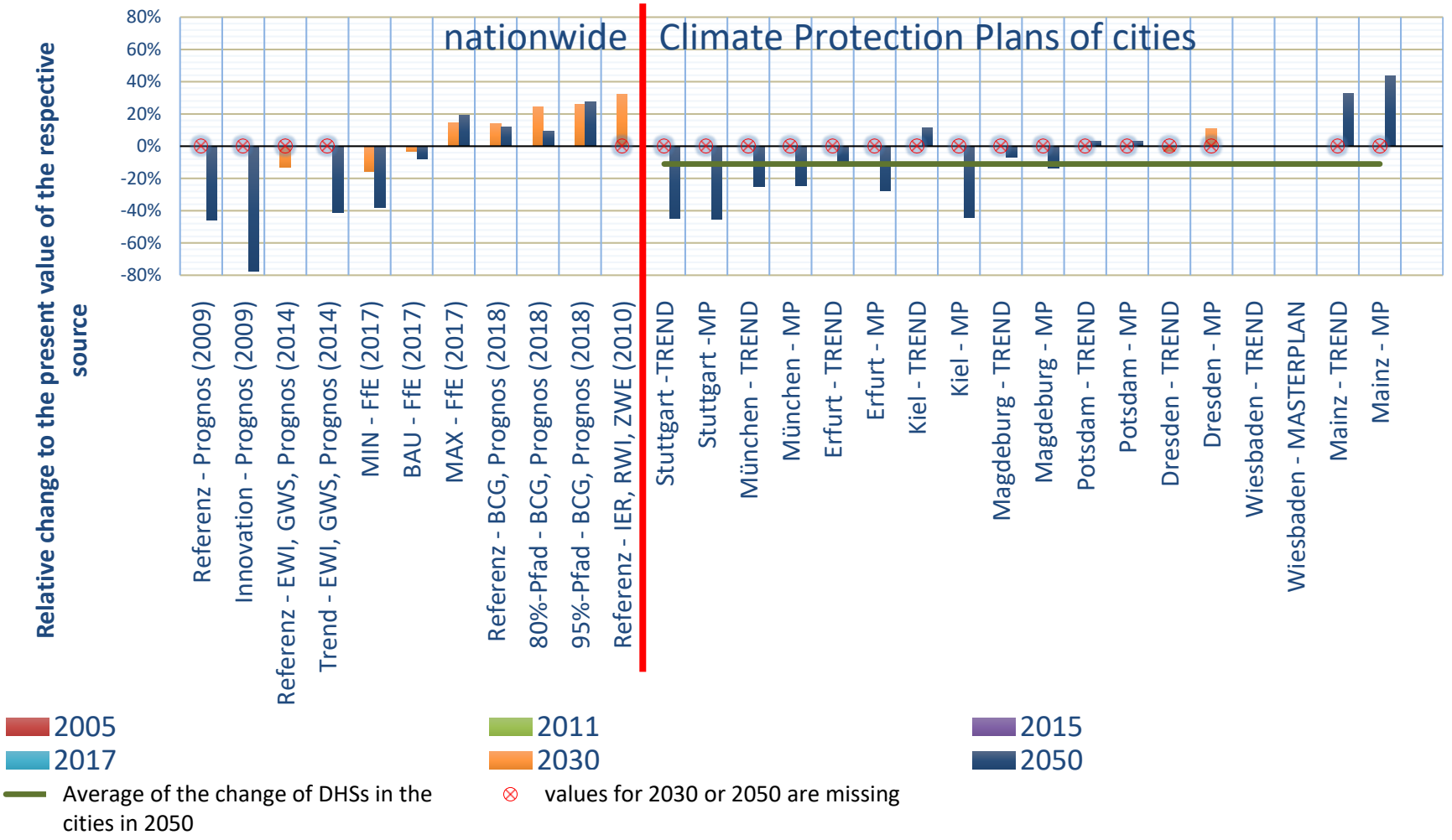


Source: „Anwendungsbilanzen für die Energiesektoren in Deutschland in den Jahren 2013 bis 2016" AGEB, AG Energiebilanzen; im Auftrag vom Bundesministerium für Wirtschaft und Energie, Berlin Nov 2017

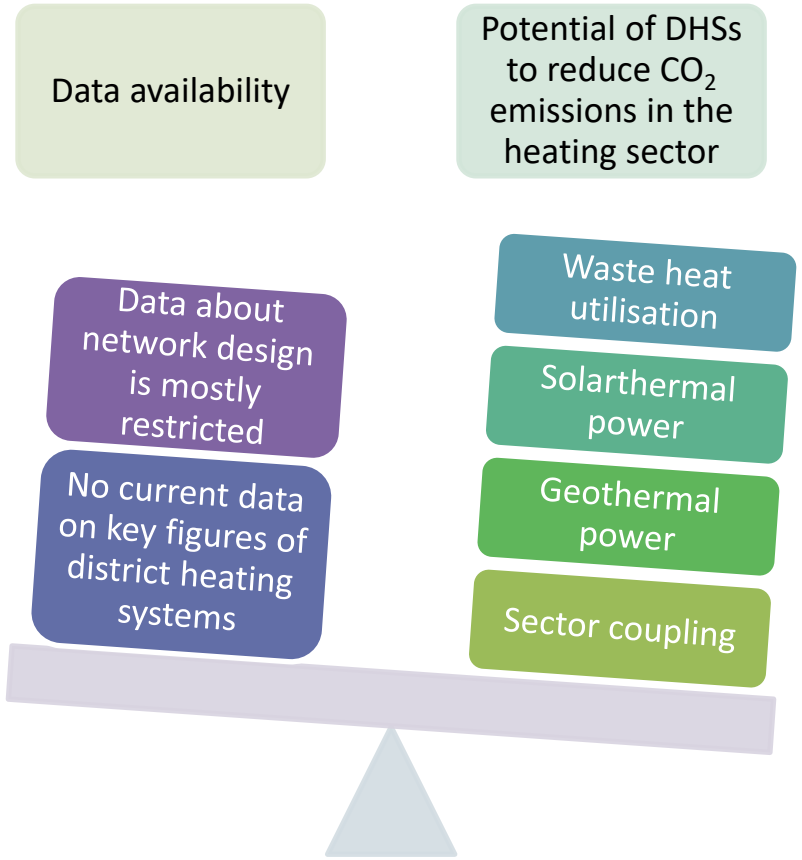
Szenarios about the development of district heating in specific cities



How to provide a public available and active data collection about DHSs?

How to obtain information necessary to elaborate transformation paths into the 4th generation of DHSs?

How can this database help to strengthen and work out the advantages of DHSs more easily?



Menu

- Analysis were conducted for cities with more than 100,000 inhabitants, existing DHS or connected to an integrated district heating grid
- Other cities available on demand
- Participation on the Fernwärmeatlas through free registration
- www.fernwaerme.atlas.hawk.de (preliminary version)

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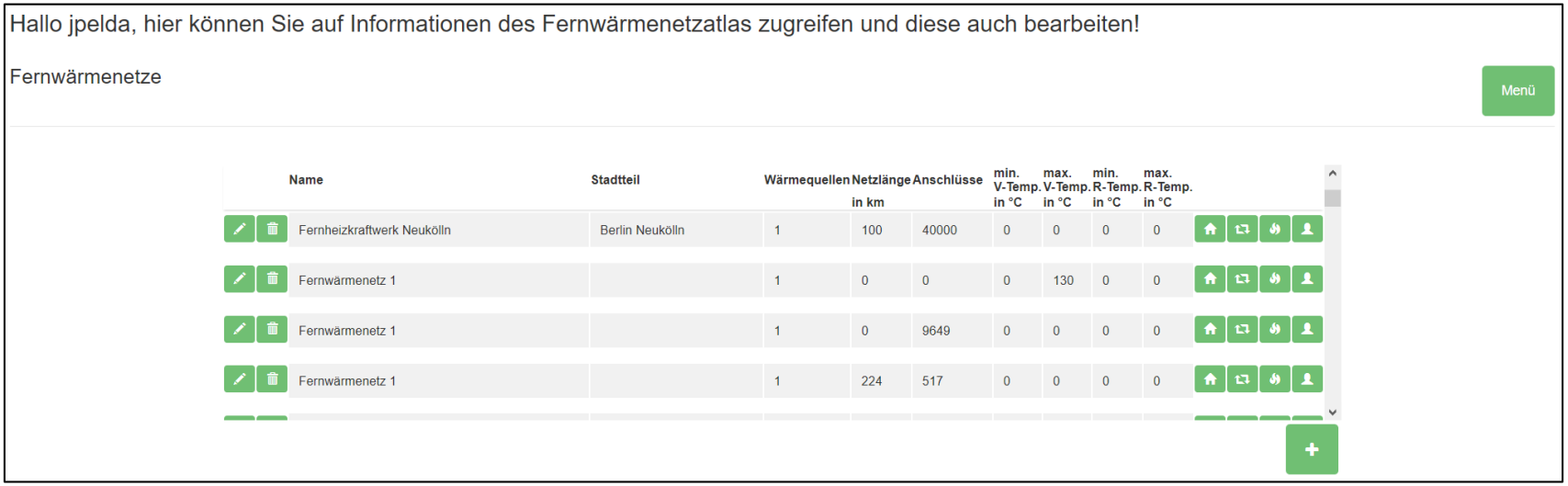
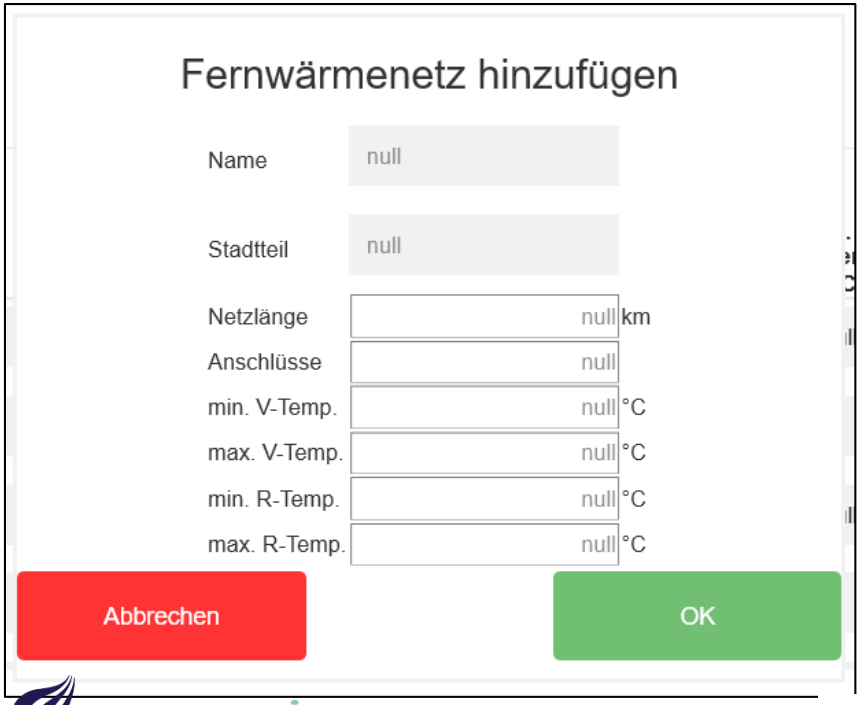
District heating systems

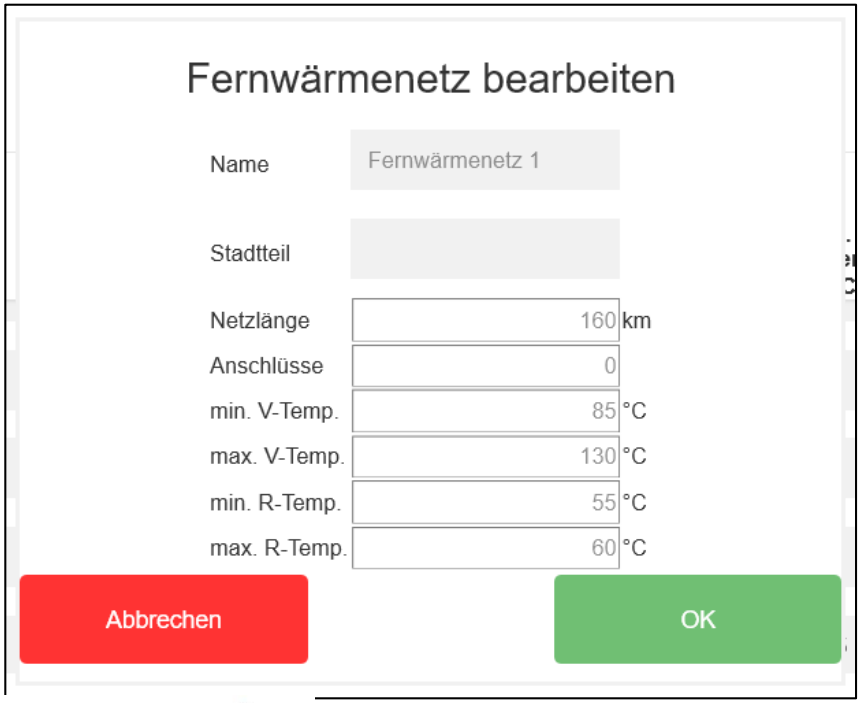


Name	Stadtteil	Wärmequellen	Netzlänge in km	Anschlüsse	min. V-Temp. in °C	max. V-Temp. in °C	min. R-Temp. in °C	max. R-Temp. in °C
Fernheizkraftwerk Neukölln	Berlin Neukölln	1	100	40000	0	0	0	0
Fernwärmenetz 1		1	0	0	0	130	0	0
Fernwärmenetz 1		1	0	9649	0	0	0	0
Fernwärmenetz 1		1	224	517	0	0	0	0

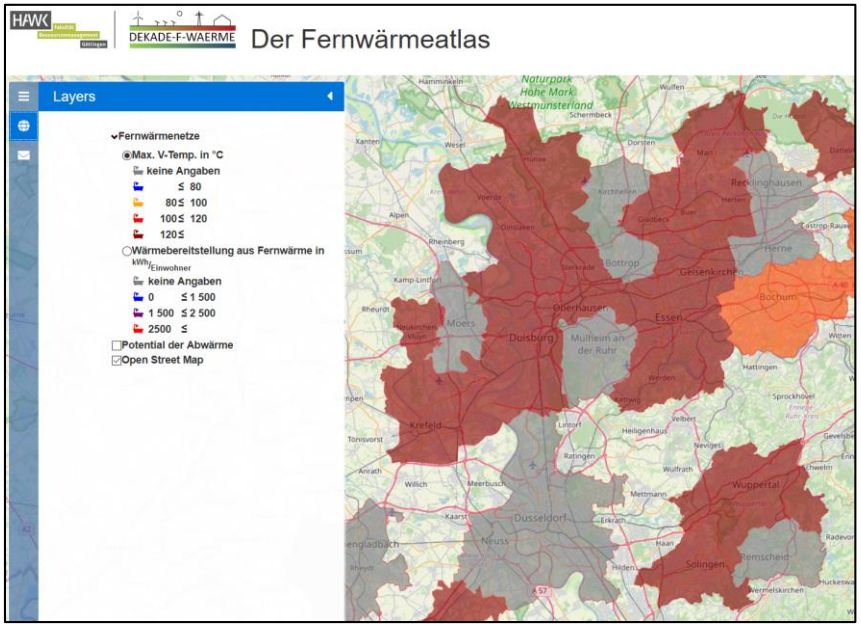
Add a new DHS



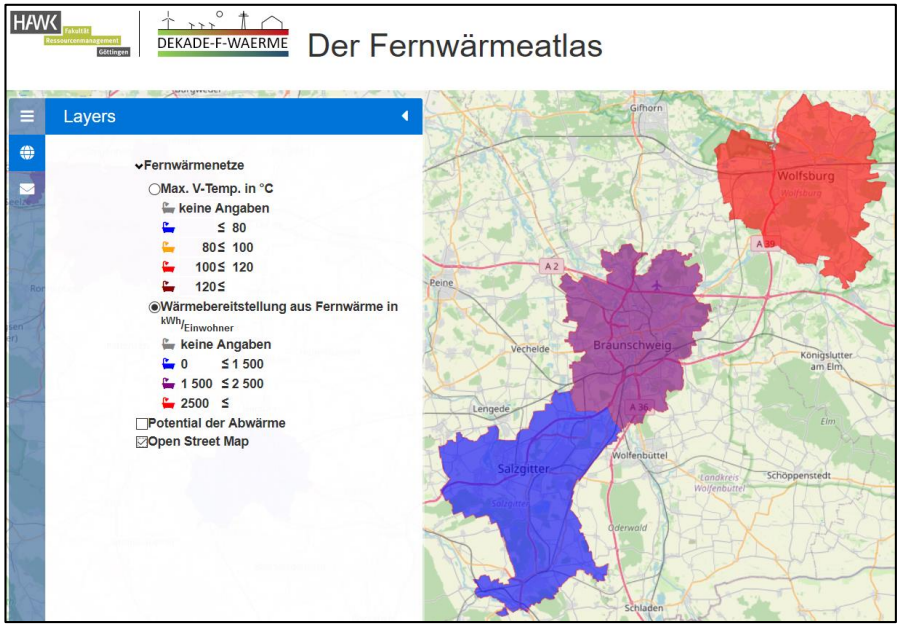
Edit an existing DHS



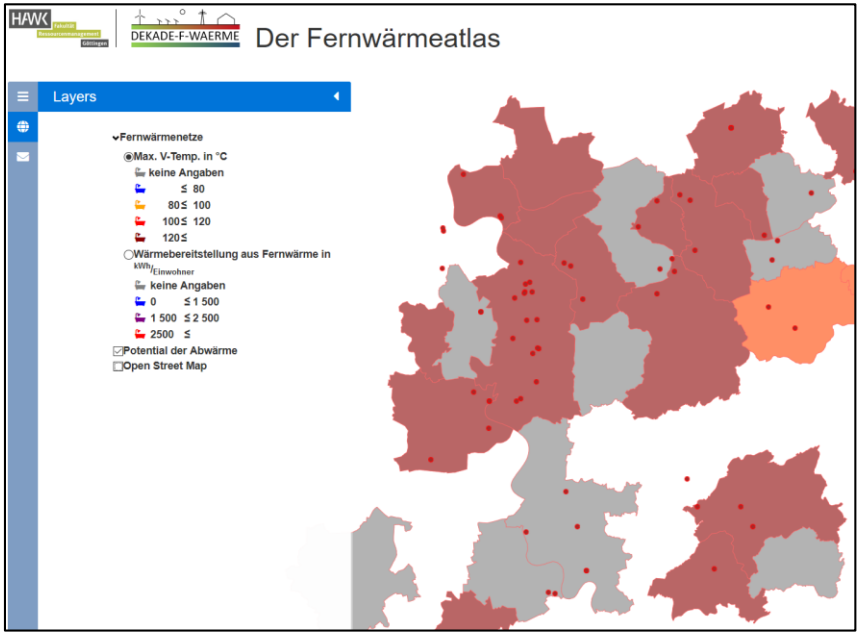
Temperature levels of specific district heating systems



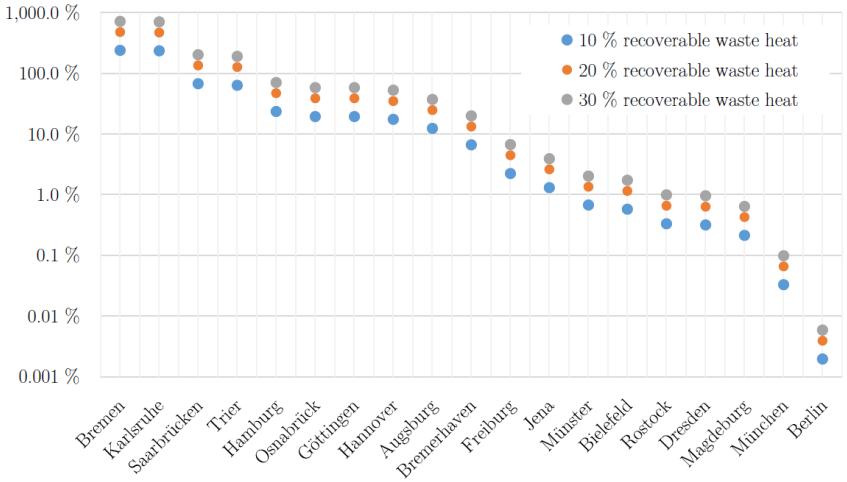
Share of district heating on the overall heat demand in the cities of Salzgitter, Braunschweig and Wolfsburg



Locations of waste heat deduced from CO_2 emissions



Percentage of district heating supply that can be potentially covered by waste heat from industry



Source: "Potential of integrating industrial waste heat and solar thermal energy into district heating networks in Germany" (Pelda J., Stelter F., Holler S.; 2020; https://doi.org/10.1016/j.energy.2020.117812)

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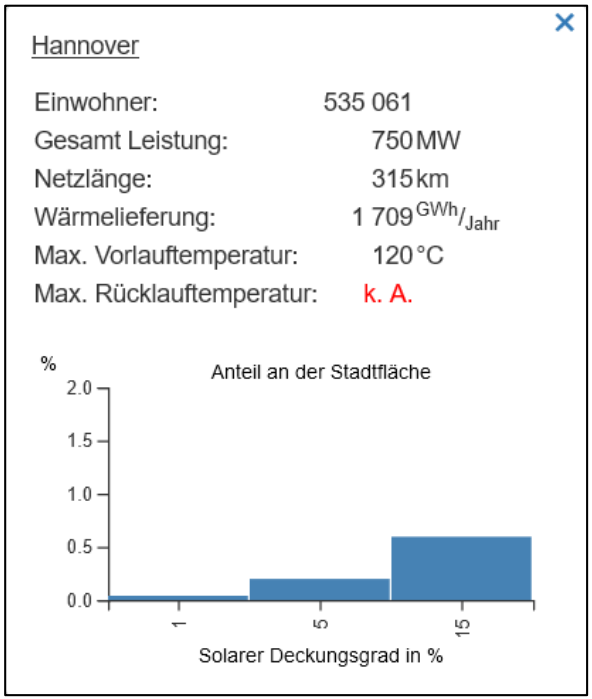
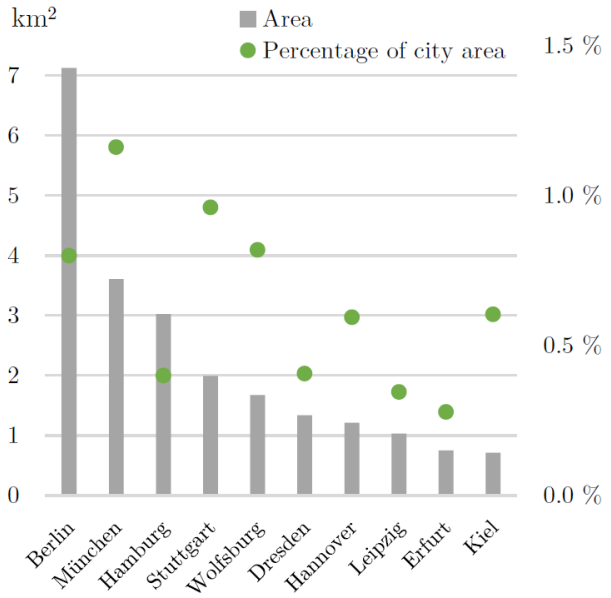
Max. 0,7 % of Hannover‘s city area is needed to gain a solar coverage ratio of 15% on the district heating demand



Required area for a solar coverage ratio of 15% on the district heating supply



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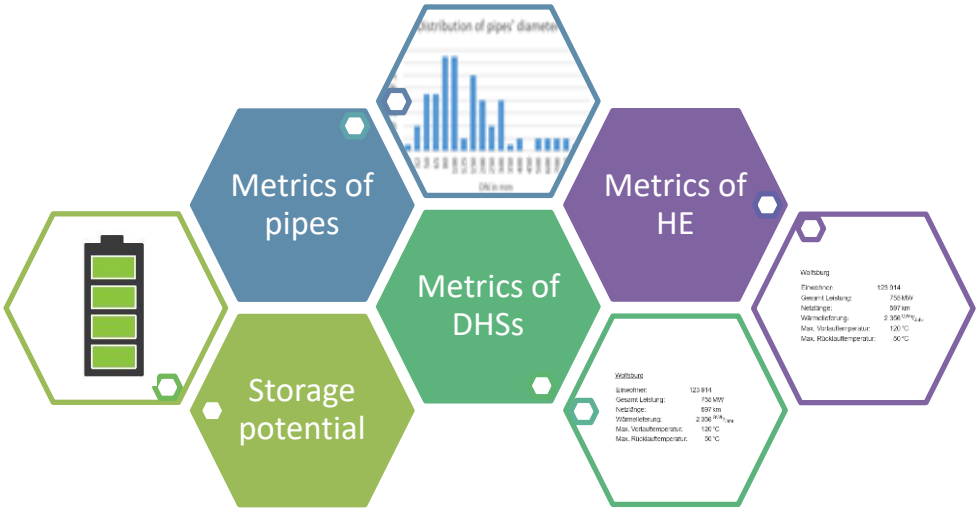
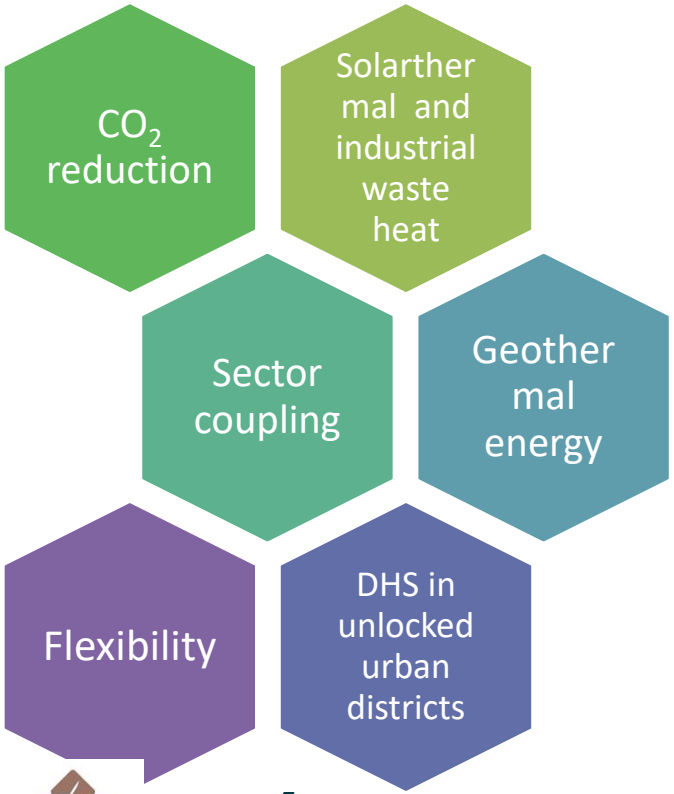
Needed metrics of DHS for applied research



Applied reasearch in the following fields



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Please feel free to ask any question!

Johannes Pelda
Johannes.pelda@hawk.de

HAWK Faculty of Resource Management Göttingen

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