What can district heating do for the housing sector?

District heating as part of the solution for greenhouse gas mitigation.
Many contradictory challenges for the housing sector

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<td><strong>New construction</strong>: 6.5 EUR/m² rent for social housing&lt;br&gt;<strong>Stock</strong>: no rent increase due to the energy modernisation</td>
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<td>Age-appropriate housing</td>
<td>Required: 3 million dwellings in 2020</td>
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Reduction of energy consumption in energetical renovated buildings
(average “temperature-adjusted” energy consumption per heated m² of living space and year for heating and hot water)

GdW Bundesverband deutscher Wohnungs- und Immobilienunternehmen e.V.

Quelle: GdW-Jahresstatistik; n= 37% aller beheizten Flächen; eigene Berechnungen.
Konfidenzintervall der Mittelwerte bei +/- 3 kWh/m²a

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Energy district concepts
Example: Reduction of final energy for heating and hot water preparation with an existing district heating supply with $f_p = 0$

But: In future it will no longer be the primary energy factor that will be decisive, but the greenhouse gas emissions.

Goal:
Minimal emissions with a cost optimum from reducing consumption and energy supply

Source: wbg Nürnberg
Energy district concepts
Example district heating solution – Goal: CO₂-reduction and stabilisation of energy costs

Forecast:
Minus 30 % for heat demand
87 % less CO₂.

Example Gemeinnützige Baugesellschaft zu Hildesheim (gbg)
Large housing estate Drispenstedt
Summary

- Housing companies are caught between practical housing requirements and political goals
- Profitability and social compatibility as well as the occurrence of planned results is essential (monitoring!)
- Housing companies have already tapped considerable energy savings potentials, of which some have largely been exhausted
- Even more will not result in more – no further increases in energy standards (limited investment volume, arithmetical savings practically don't occur like that)
- District heating is part of the solution
- The housing sector requires
  a) a transparent overview of the GHG-emissions of district heating grids
  b) affordable district heating with the lowest possible greenhouse gas emissions
Concepts are sought for the housing stock, which offer a climate-friendly power and heat supply at predictable and acceptable costs and which maintain the security of energy supply.

Source: Vogler