

Heating and Cooling Solutions for Metropolitan Areas

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*towards a global
Energiewende*



Global Status of Heating and Cooling Markets



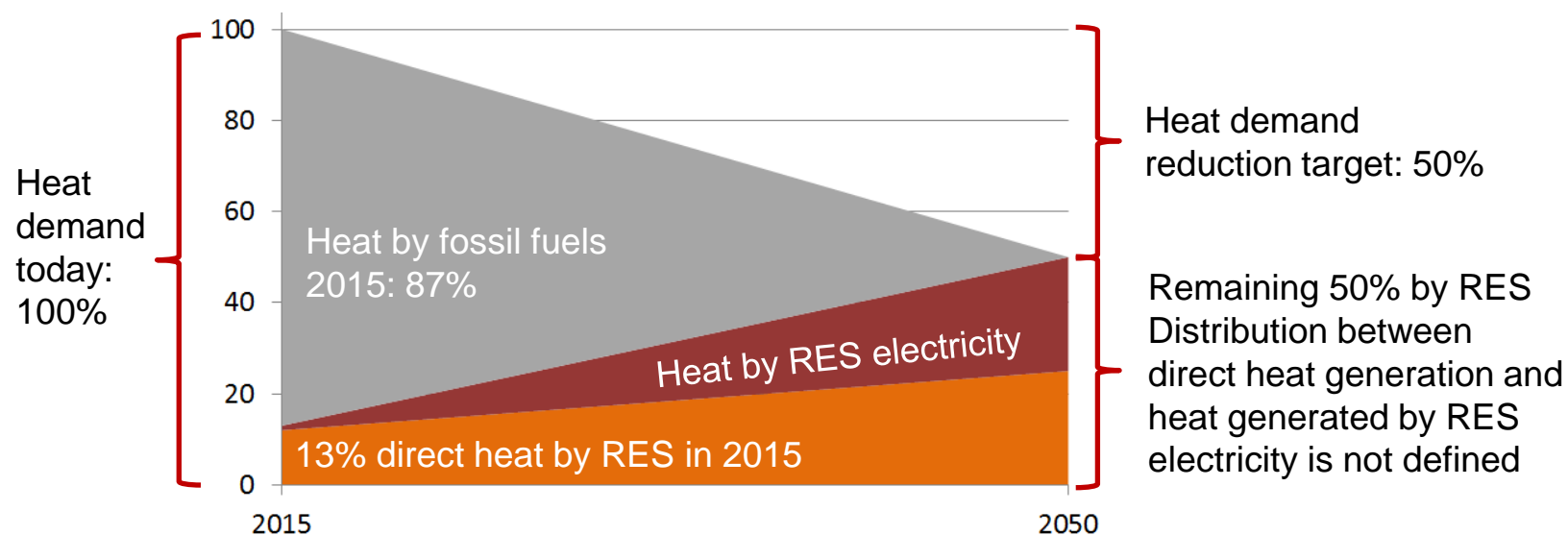
IEA World Energy Outlook 2016

- World's energy consumption for heating: **>50%**
- Share of heat production on energy related CO₂ emissions: **39%**
- Heat remains widely under-served by renewable sources of energy (RES).
Forecast 2021: RES for heating: 8% ⇔ RES for electricity generation: **28%**.
- Share of heat on energy demand in buildings: almost **80%**
- Share of RES on heat demand in buildings: **9%**
- Modern **bioenergy** is mostly used RES in buildings.
Challenges to further deployment: local pollution and high upfront costs
- **Solar water heating (SWH)**: highest demand growth in coming decades expected.
SWH growth rate since 2000: **17%** a year,
SWH share on hot water production in buildings: only **6%** (2014)
- Targets are important, but their implementation depend on **effective policies**.
- Global landscape for **renewable heat policy measures** is significantly less extensive than for electricity. The joint IEA/IRENA renewable policy database lists 582 policy instruments in force for renewable electricity, yet only 158 for heating and cooling across 75 countries.

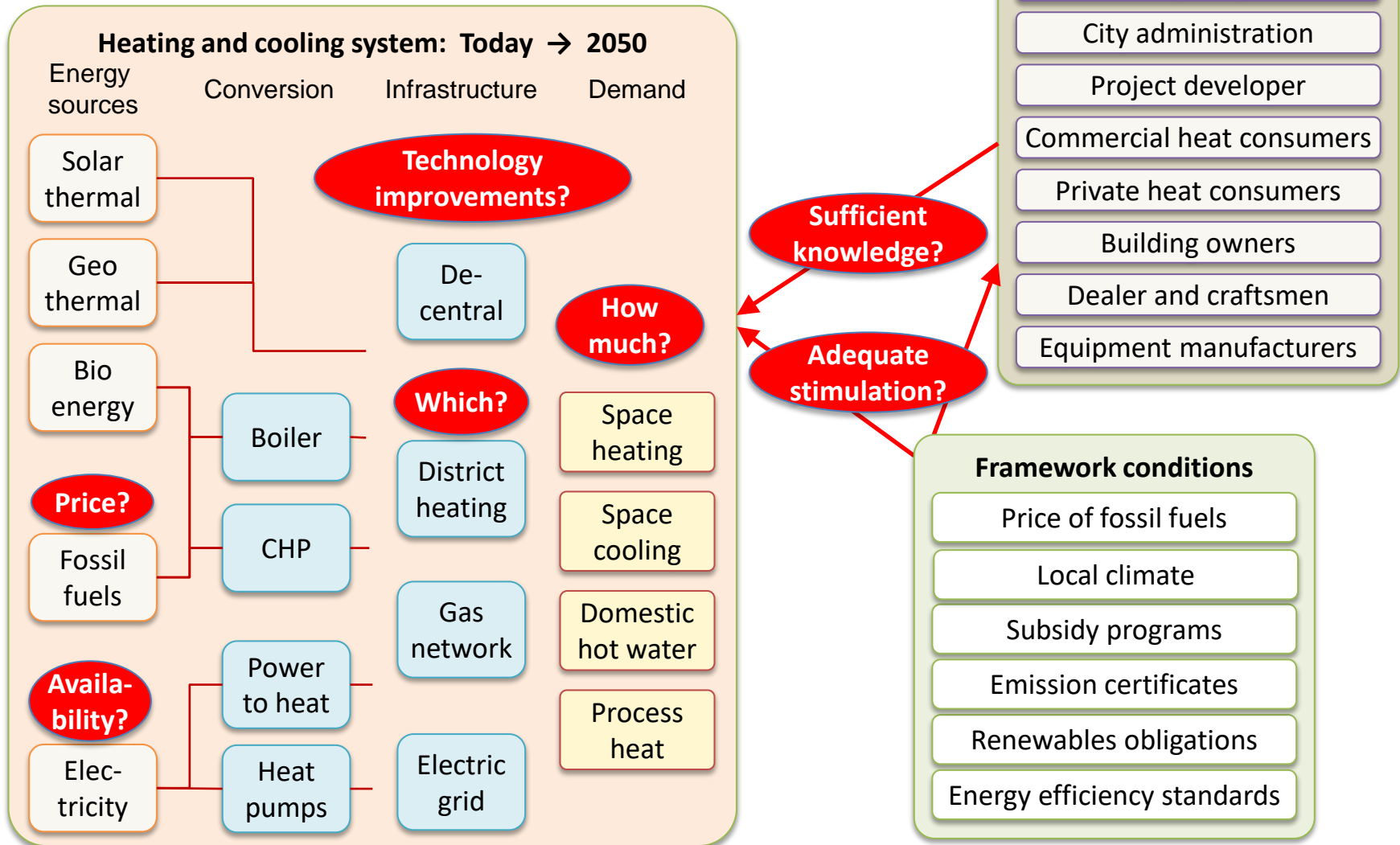
Strategy to Decarbonize the Heating Sector

Combination of energy efficiency and use of renewable energy sources

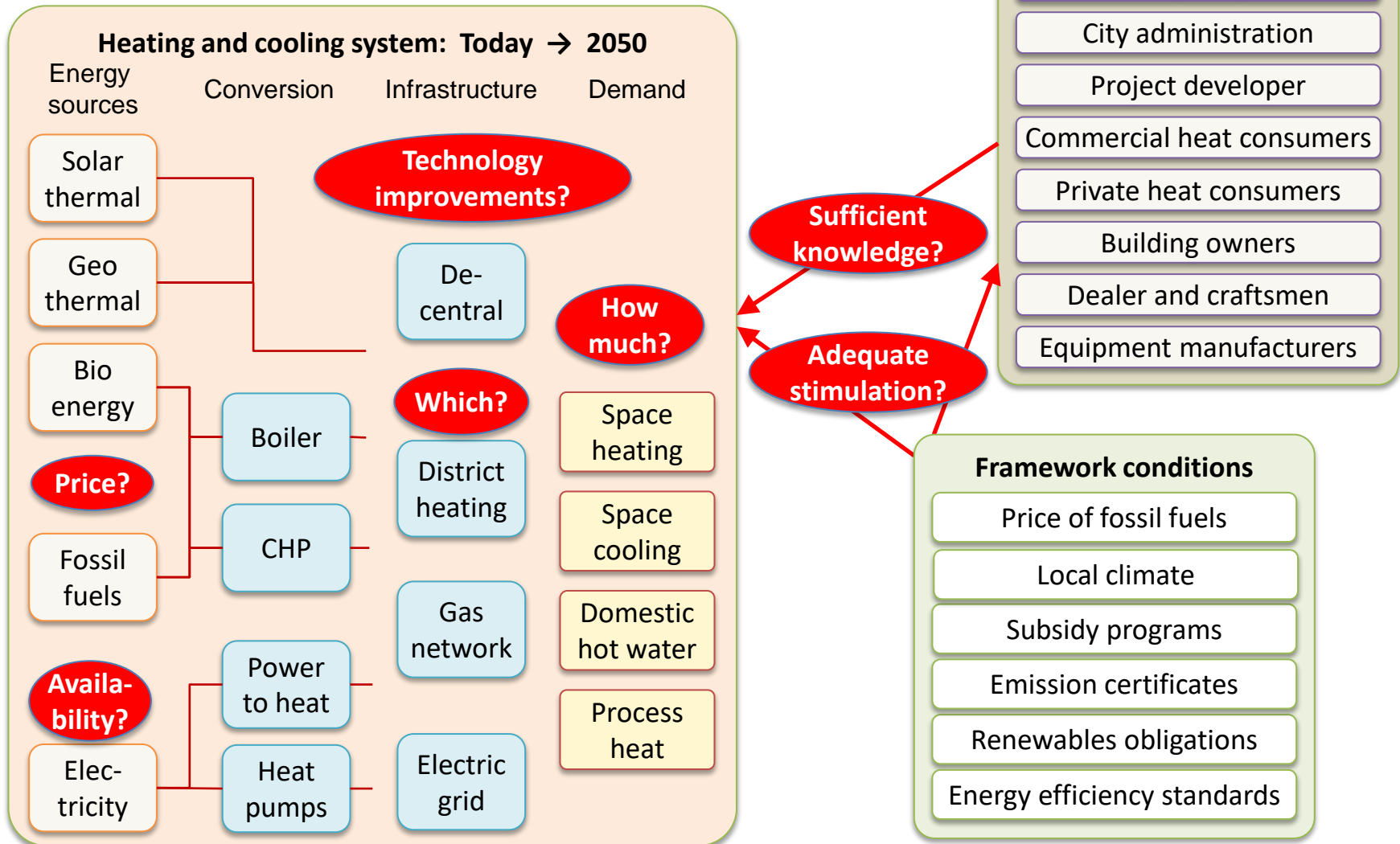
General concept of the German government:



Complexity and Challenges of the Heating (and Cooling) Market



Why is Heating and Cooling not higher on the Agenda? How to accelerate transformation?



Thank you for your attention

