



Future District FRANKLIN, Mannheim

MVV Smart Cities
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Wir begeistern
mit Energie.

Benjamin Franklin Village Mannheim is ideally suited as a smart district.



144 ha
total area

10.000
residents

4.000
living units

26.00 MWh
district heating

12.600 MWh
electricity

422.000 m³
water

In the FRANKLIN district, a smart cell has been created that combines several goals.

1 Cellularity



- Local balancing of generation and demand
- If not possible, then exchange with neighboring cells

2 Networking



- Platform for networking all infrastructure components
- Optimized sector coupling through energy management
- Connection to markets for trading local flexibility

3

Development of Value-added services



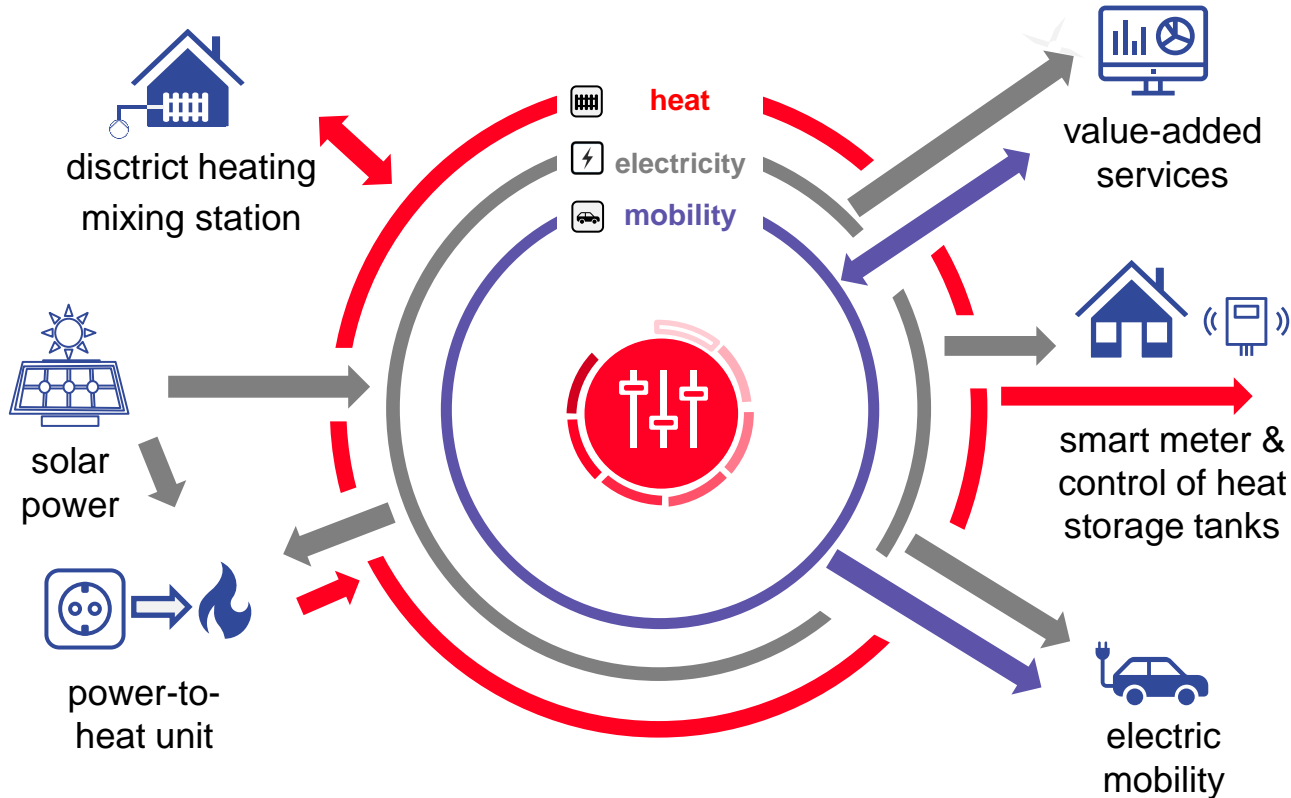
- High-resolution data enables monitoring of energy flows in the district
- Based on this data, residents can be offered new services

The Smart Infrastructure Platform is the brain of a smart district.

Data of all kinds is received and processed there, then appropriate controls are triggered.

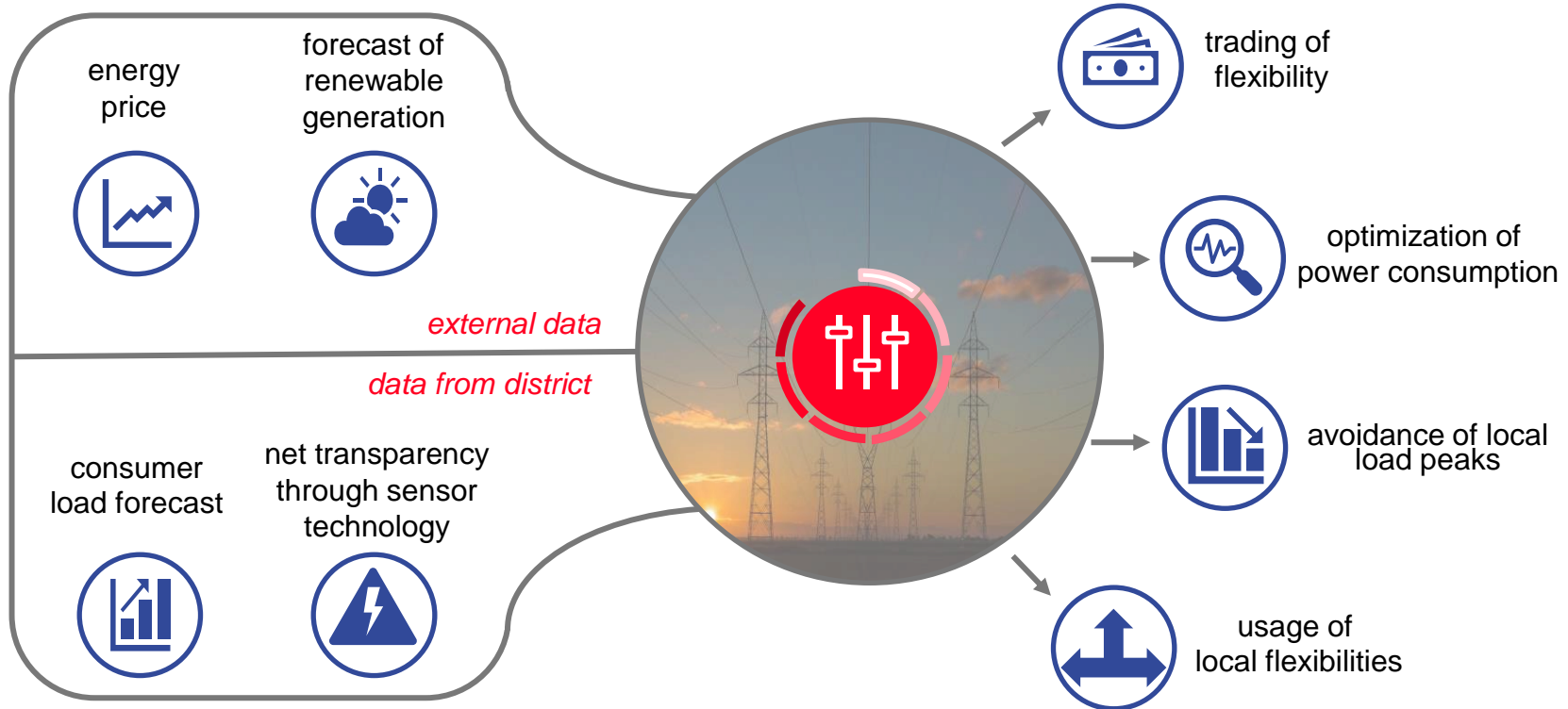


The Smart Infrastructure Plattform FRANKLIN combines the sectors electricity, heat supply and mobility...





Smart flexibility of electricity through district energy management





Smart electrical flexibility in FRANKLIN enables optimized power consumption and flexibility trading



data collection of local grid stations



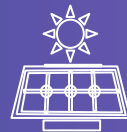
grid transparency in the district



data collection of public charging points



evaluation of potential for local flexibility



generated electricity is consumed locally



surpluses are marketed and provide flexibility to the system



P2H units are operated in a grid-supporting way

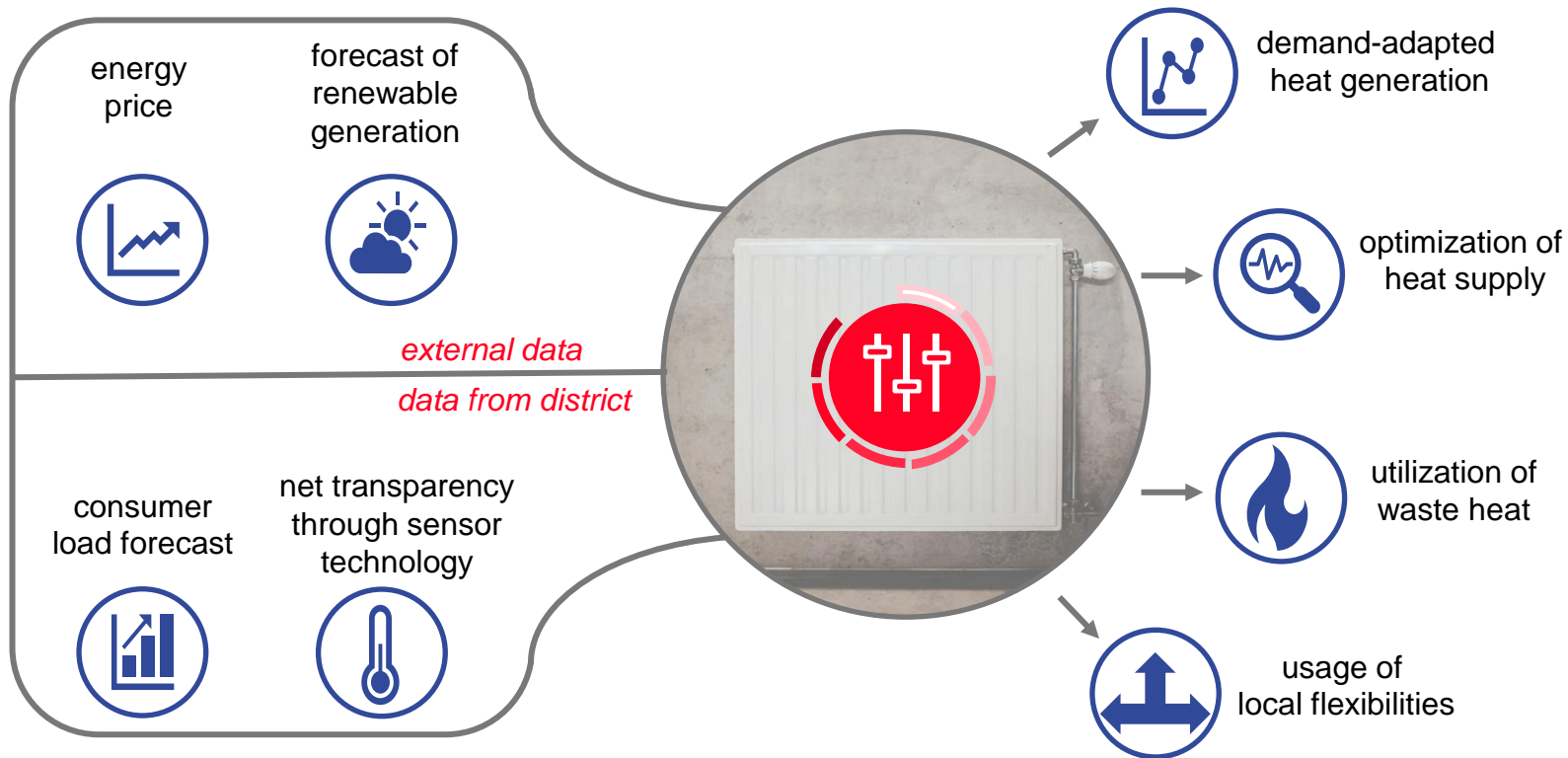


electrical flexibility is automatically traded during plant standstill





Smart heat flexibility through energy management in the district





Smart heat flexibility in FRANKLIN enables control and targeted integration of green heat in the local heating supply



low-temperature
district heating



connection of new
heat sources
possible



data collection of district
heating measuring points



transparency of
the heat supply in
the district



control of local
heat storage tanks



optimized heat
distribution in the heat
supply system



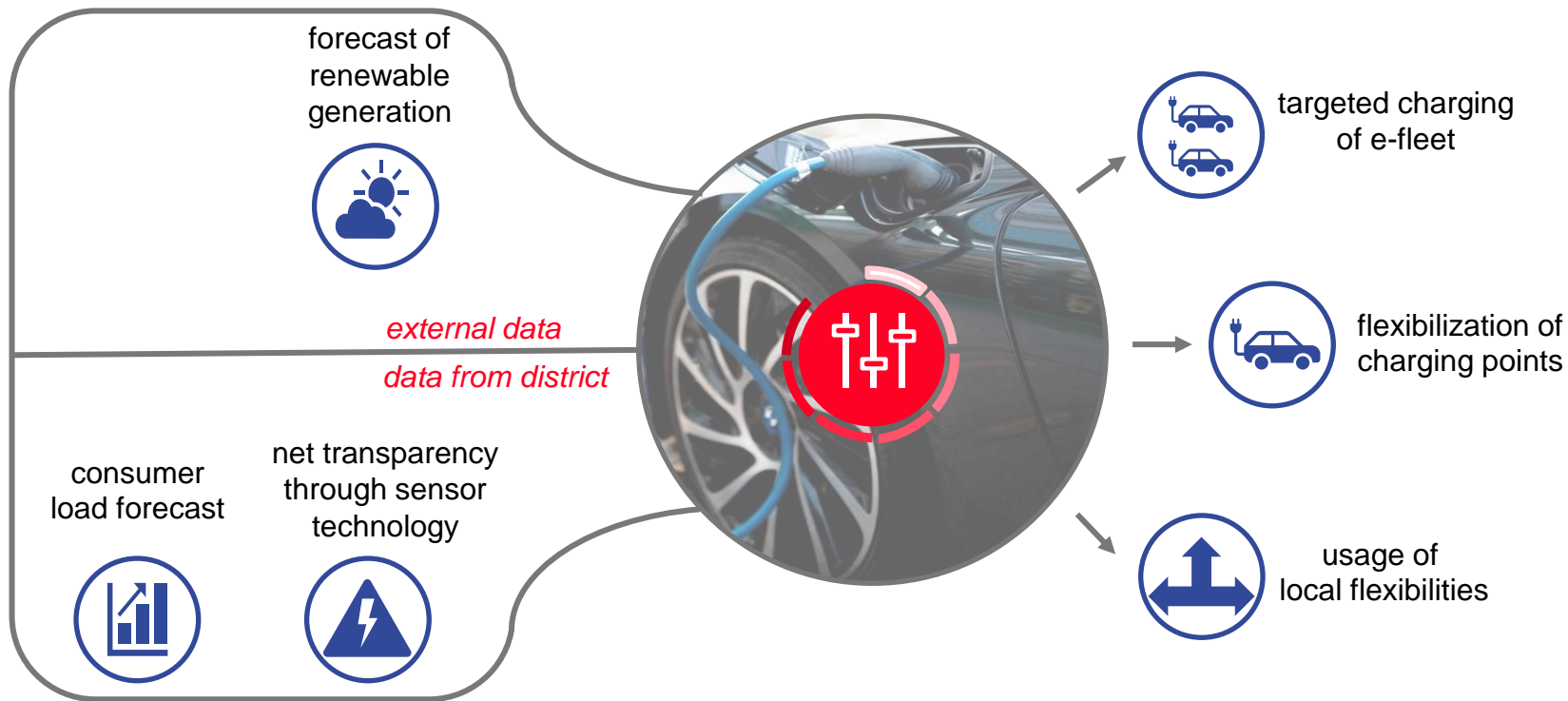
P2H units are operated
with local solar power



green heat and
optimization of heat
supply (booster)

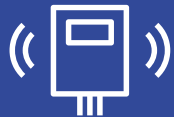


Flexible e-mobility in the district





Flexible e-mobility in the district FRANKLIN



data collection of
local net stations



net transparency
in the district



data collection of public
charging points



evaluation of
potential for local
flexibility



e-fleet charging of „MVV
Nachbarschaftsoase“



optimized charging
with solar power



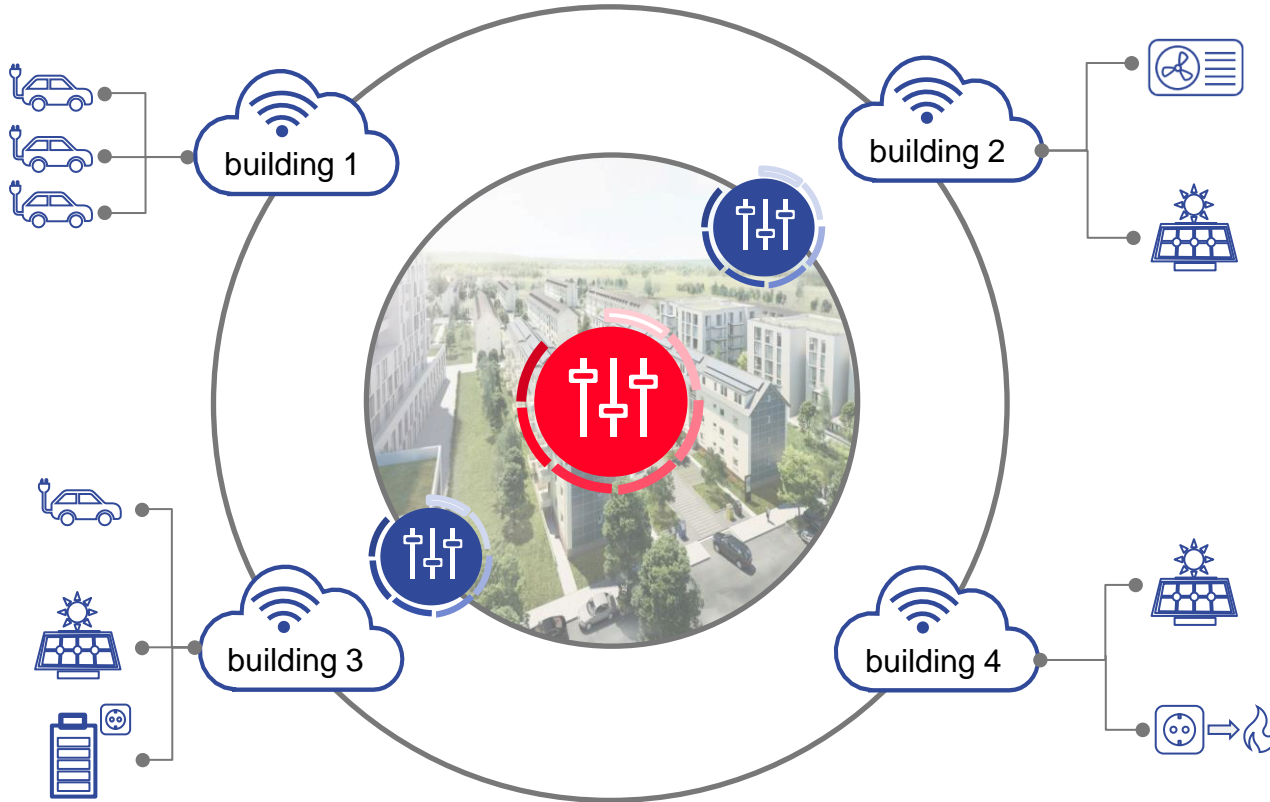
power reduction of
other consumers



compensation of
charging peaks
possible



Building flexibility in the district



- Larger buildings often have their own EMS
- The district EMS combines all SUB-EMS and individual assets
- Local flexibilities are coordinated and energy consumption in the district is optimized
- SUB-EMS and individual assets get access to energy markets

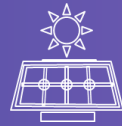
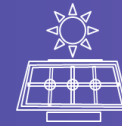




Building flexibility with the example of Square in FRANKLIN

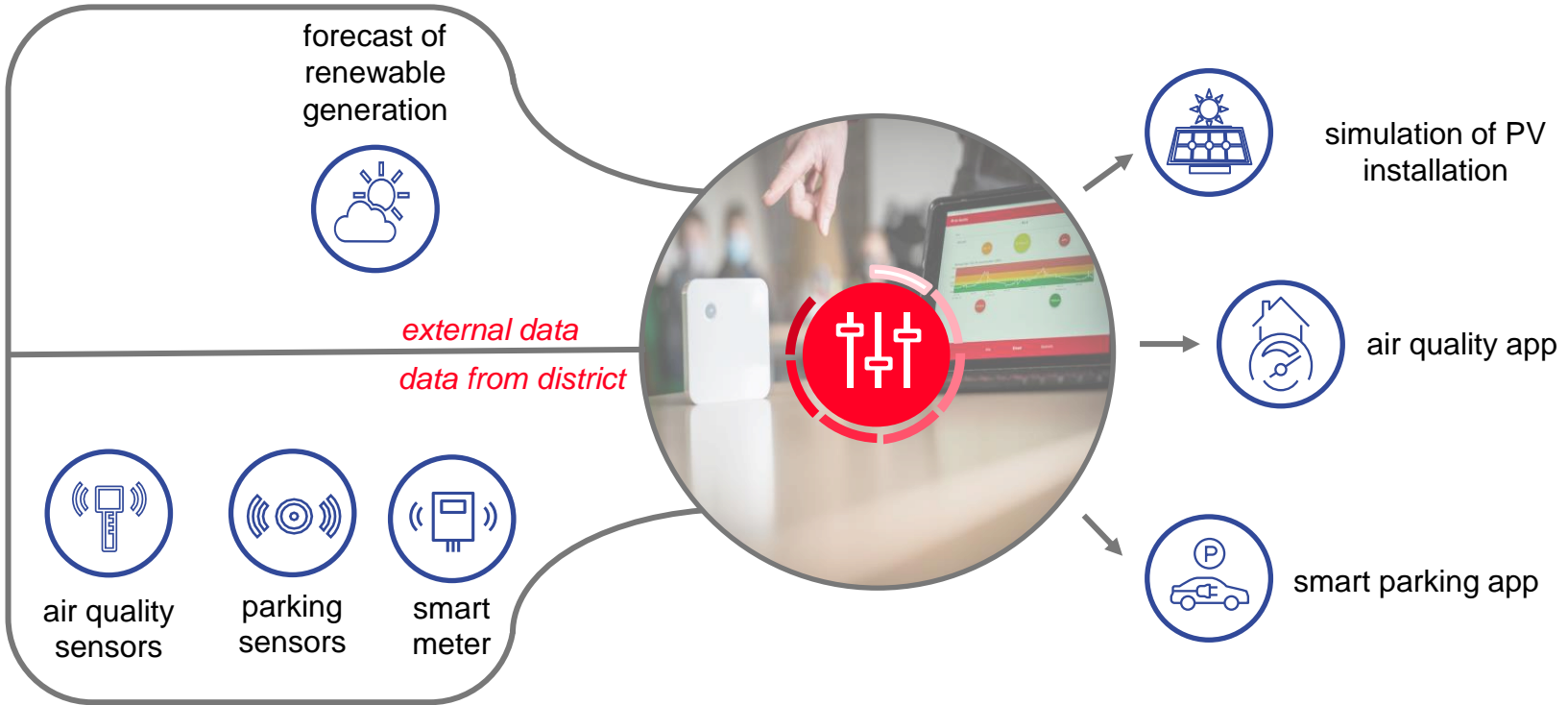


energy efficient redevelopment of existing buildings
according to two different standards (EnEV und EnerPHit)





Value-added services in the district



A smart infrastructure platform enables transparent and sustainable management in the district

1 Transparency

- Supply security and contribution to grid stability

2 Efficiency

- Energy generation in line with demand
- Targeted usage of renewable energies
- Optimization of primary energy usage in the district

3 Value-added services

- Reduction of costs for grid expansion and grid charges
- Additional revenues through flexibility trading
- Offering of district value-added services

Ein Unternehmen in der
Metropolregion Rhein-Neckar

