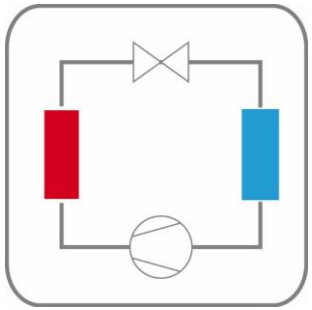
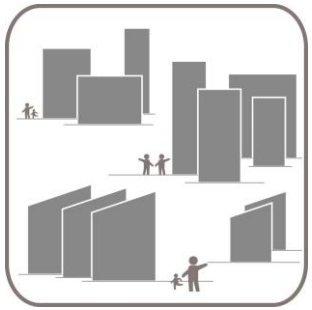




Energy concept of a district in Germany

(Quarree 100 - Heide)

Quarree100 – district in Heide

District (retrofitting energy supply)

- existing area of 20 ha with approx. 500 people
- current supply: natural gas, oil and electricity
- buildings for new grid
  - 125 connected buildings (connection rate of 56 %)
  - existing buildings: 47%

Quarree100 – district in Heide

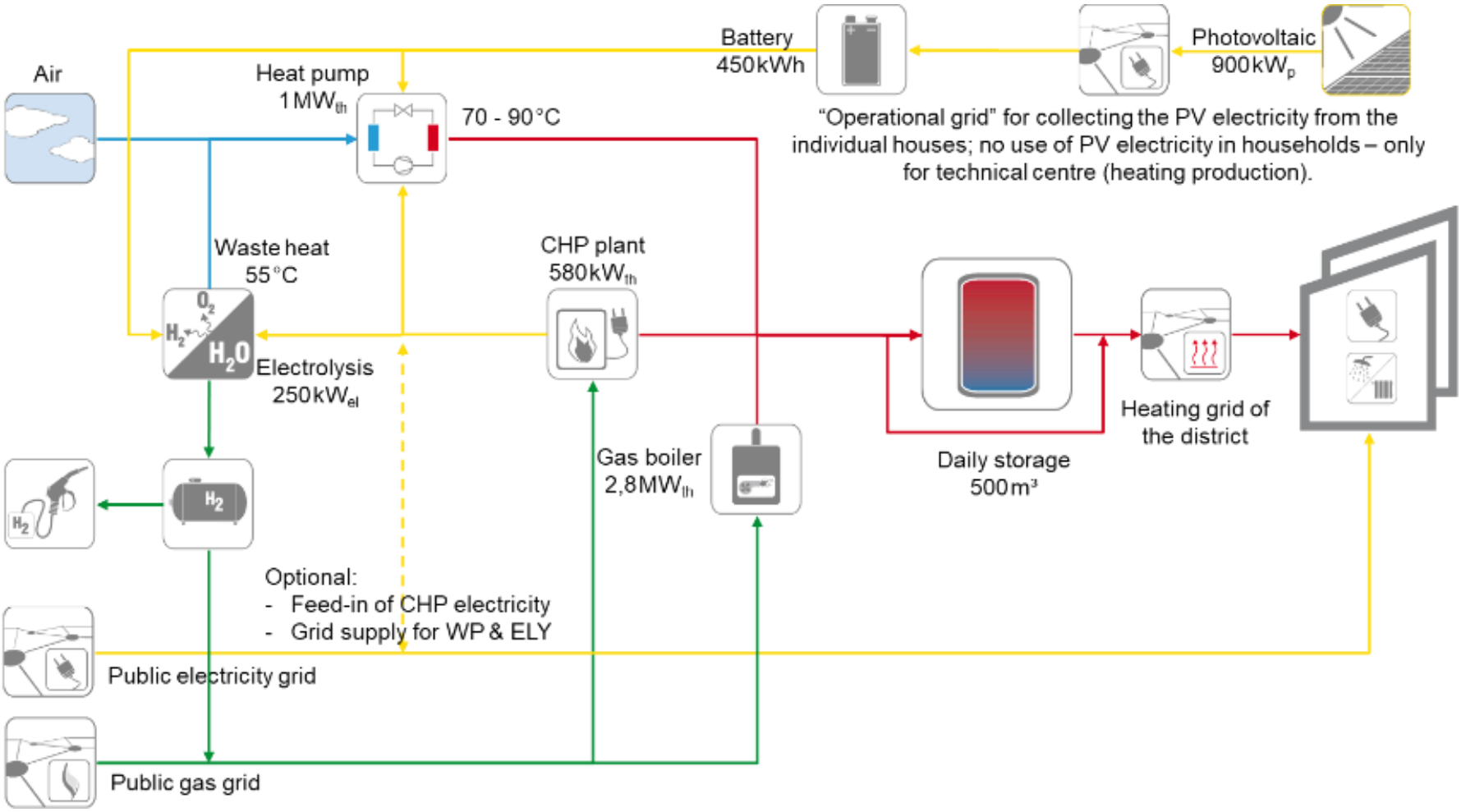
- diverse building structure (old and new): single- and multi-family-houses as well as non-residential buildings

- heating demand: 6,500 MWh/a

- planned air/water heat pump should produce and provide:
  - ➢ temperature of at least 80°C
  - ➢ thermal output of 1 to 2 MW_{th}

- Only heating grid to cover the heat demand. No power supply.

Quarree100 – district in Heide



energy supply concept

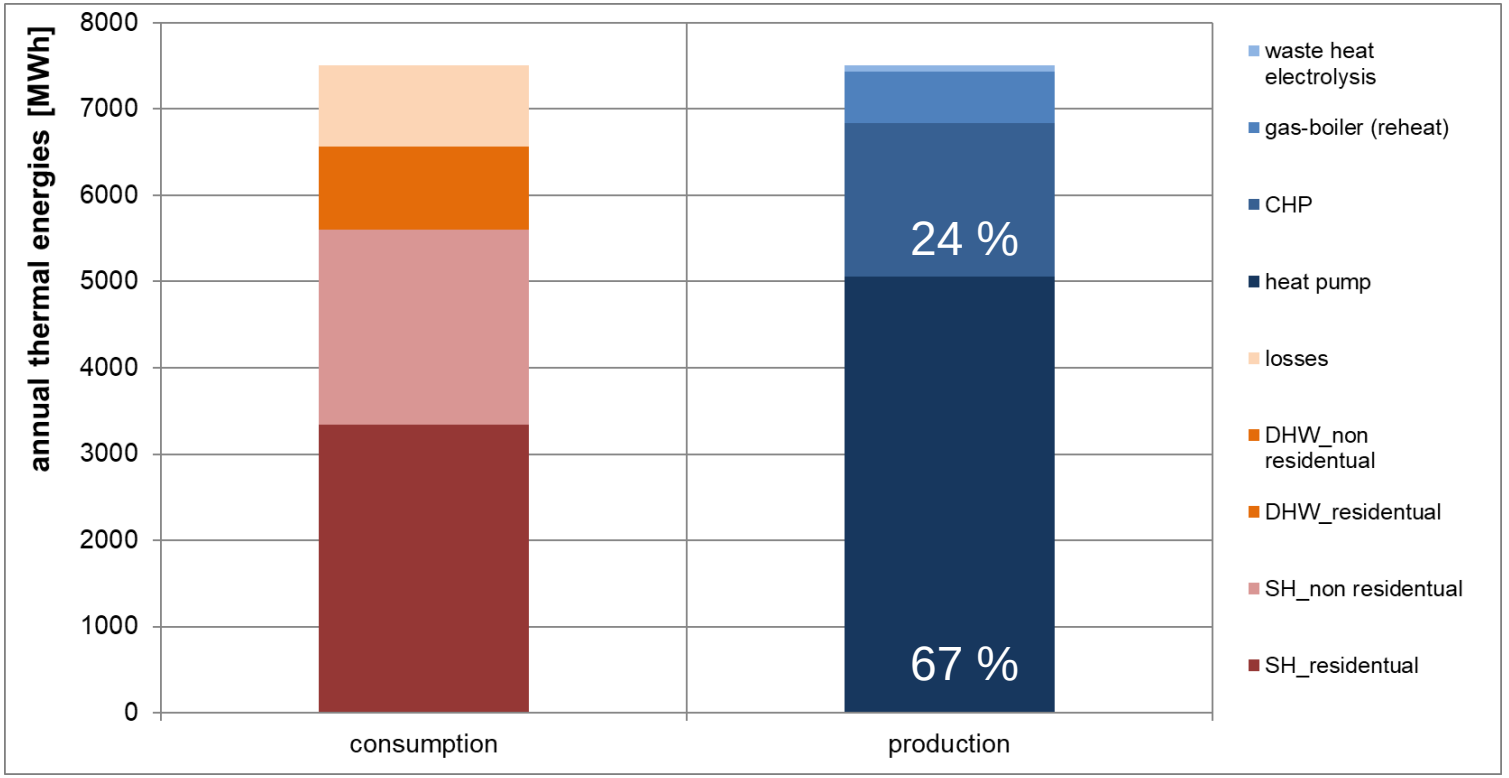
project aim: to design and implement a multimodal and sustainable energy supply system

Quarree100 – district in Heide

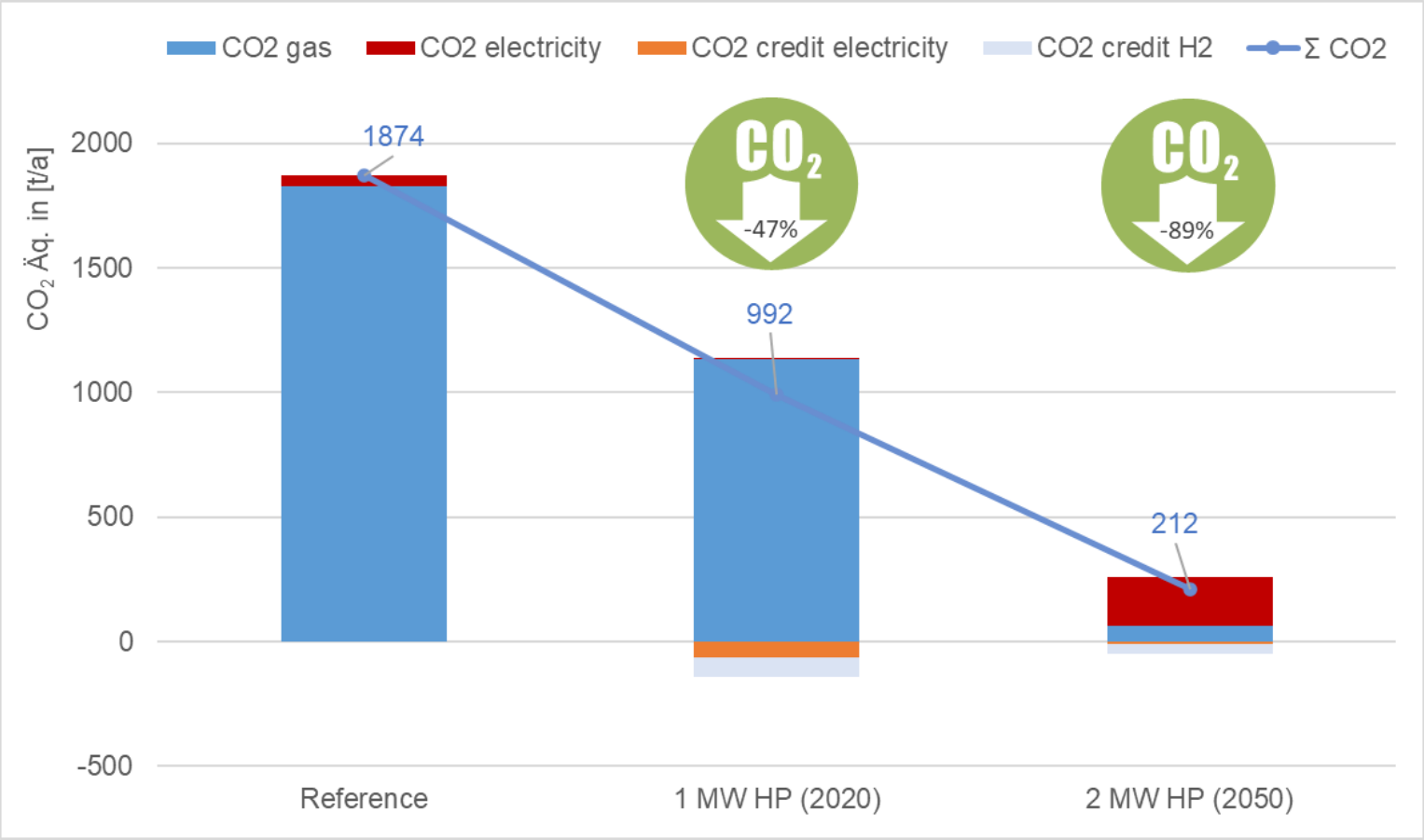
No PED available because
- too little PV area.
- economic aspect (money, investment costs, economic calculation)

BUT
- 67% renewable thermal energy via heat pump

Heat consumption (space heating and domestic hot water) and heat production – annual design values



Quarree100 – district in Heide



- annual CO_2 saving potential of 47 and 89% respectively compared to the current supply concept with gas boilers
- annual CO_2 reduction of around 882 to 1,662 tCO_2