

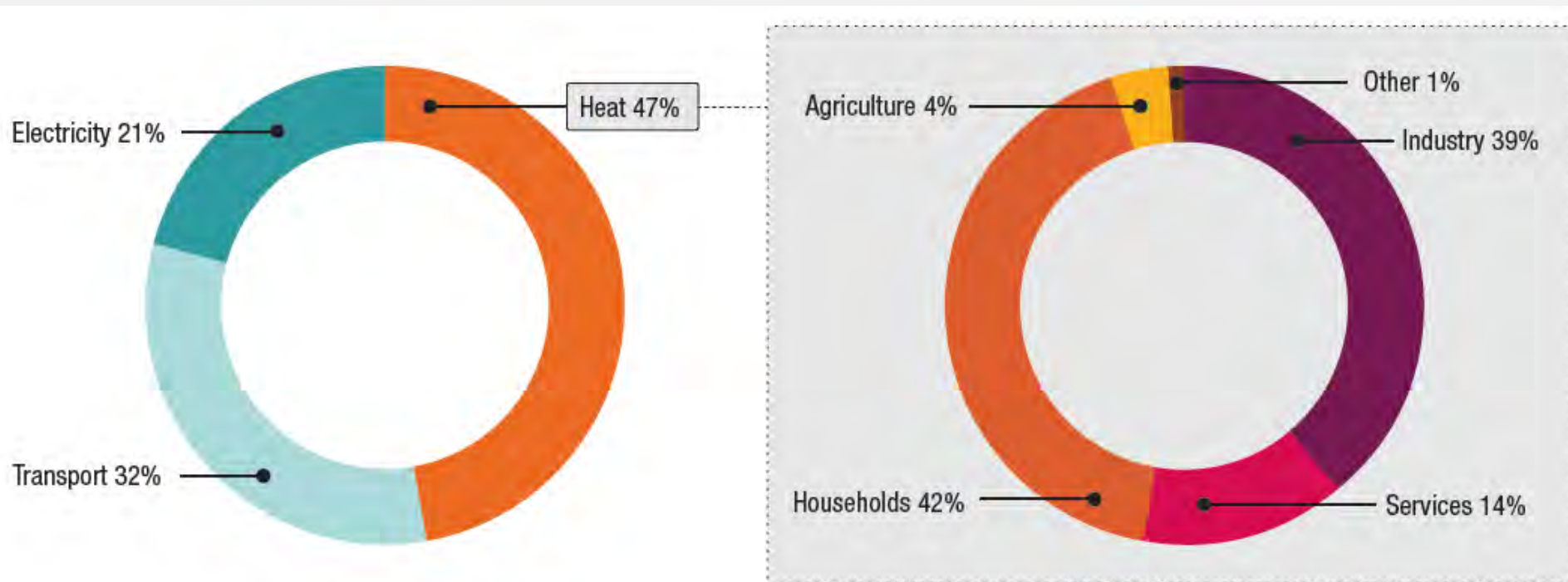
'Heat sector decarbonization – view EGEC'

Philippe Dumas, Secretary General

HEAT DEMAND

Why is heating so important – and where is it required ?

For its Decarbonization: no simplification, no silver bullet solutions because of diverse heat demand profile: Buildings, Industry, Services... And many solutions: renewable heat sources, efficient systems (HP, DH...)!



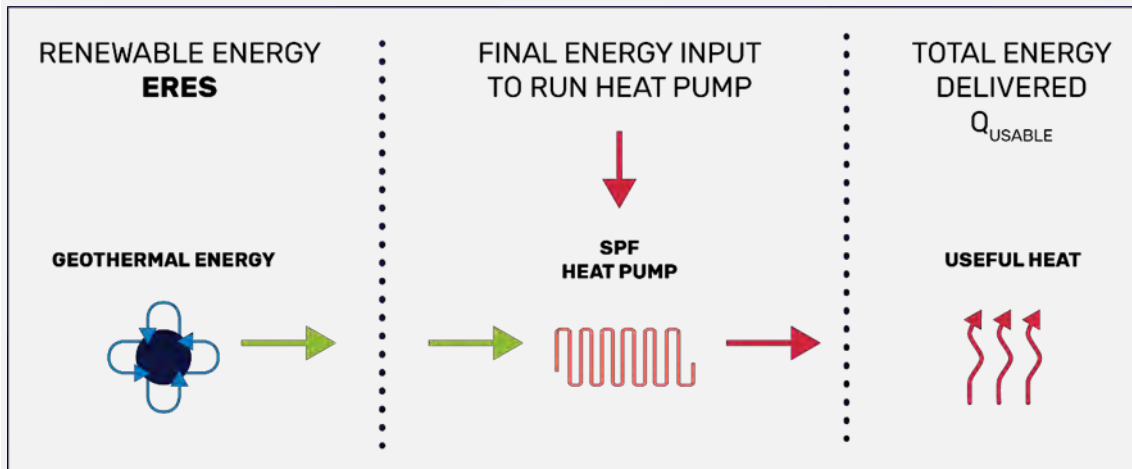
How to decarbonize ?

“Obviously, system integration will not be a one-size-fits-all process: ...EU Member States have different starting points”.*

e.g. The complexity of electrification in the heating & cooling sector

Operating a geothermal heat pump system: for a capacity of 50 kWth in a new building, supplying heating at $T = 35^{\circ}\text{C}$ during 2200 h per year and cooling at $T = 7^{\circ}\text{C}$ during 1200 h, in western Europe climate conditions, use a $\text{SPF}_{\text{heating}}$ of 4

= 44.6 MWh/year electric



Accounting of energy from geothermal heat pumps

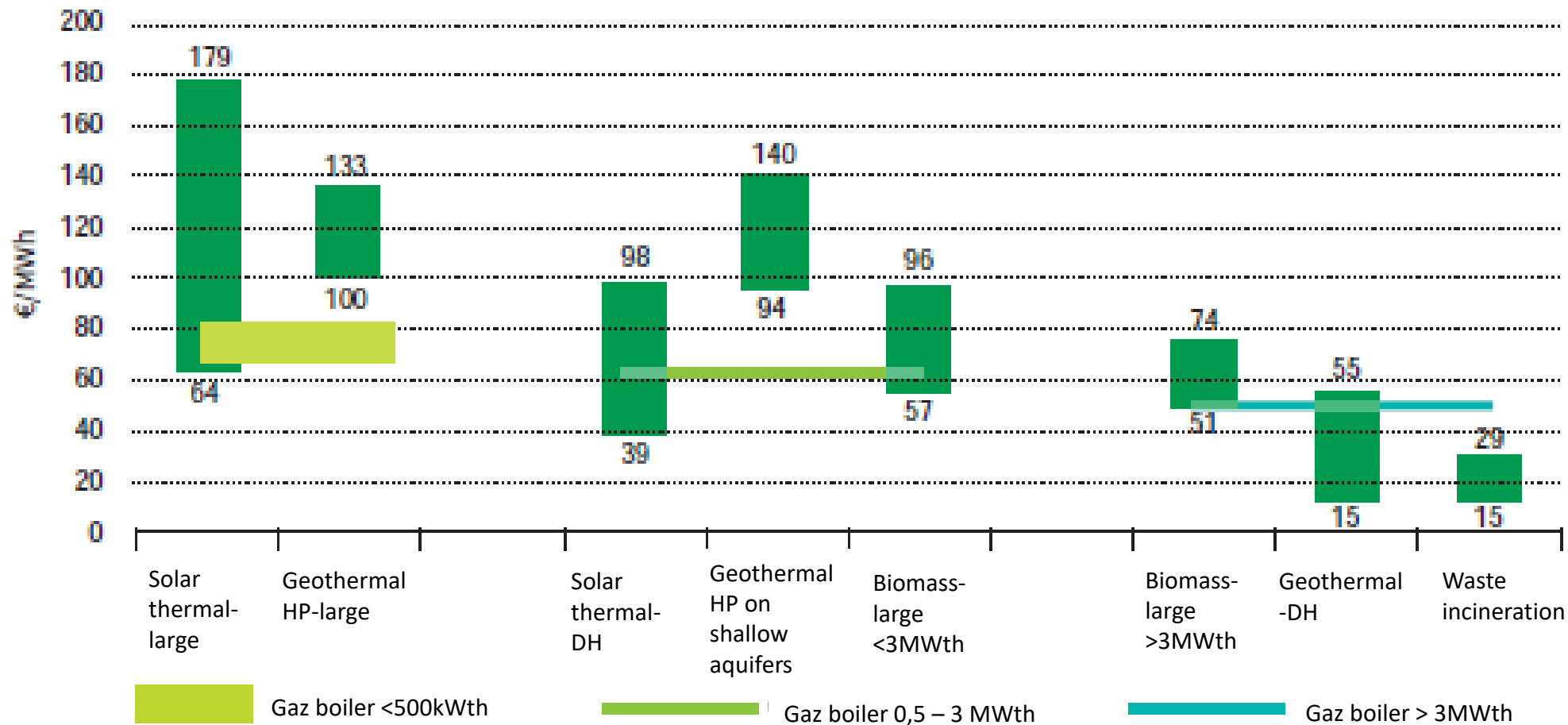
According to efficiency (never accounted in modelling), increase of the electricity demand is between 50% to 100% ! (1500 to 2500 TWh)



* EU Strategy for Energy System Integration (2020)

The competitiveness in the heat sector— Large buildings

LCoE of heating in large buildings, comparison with gaz boilers (France, 2019)

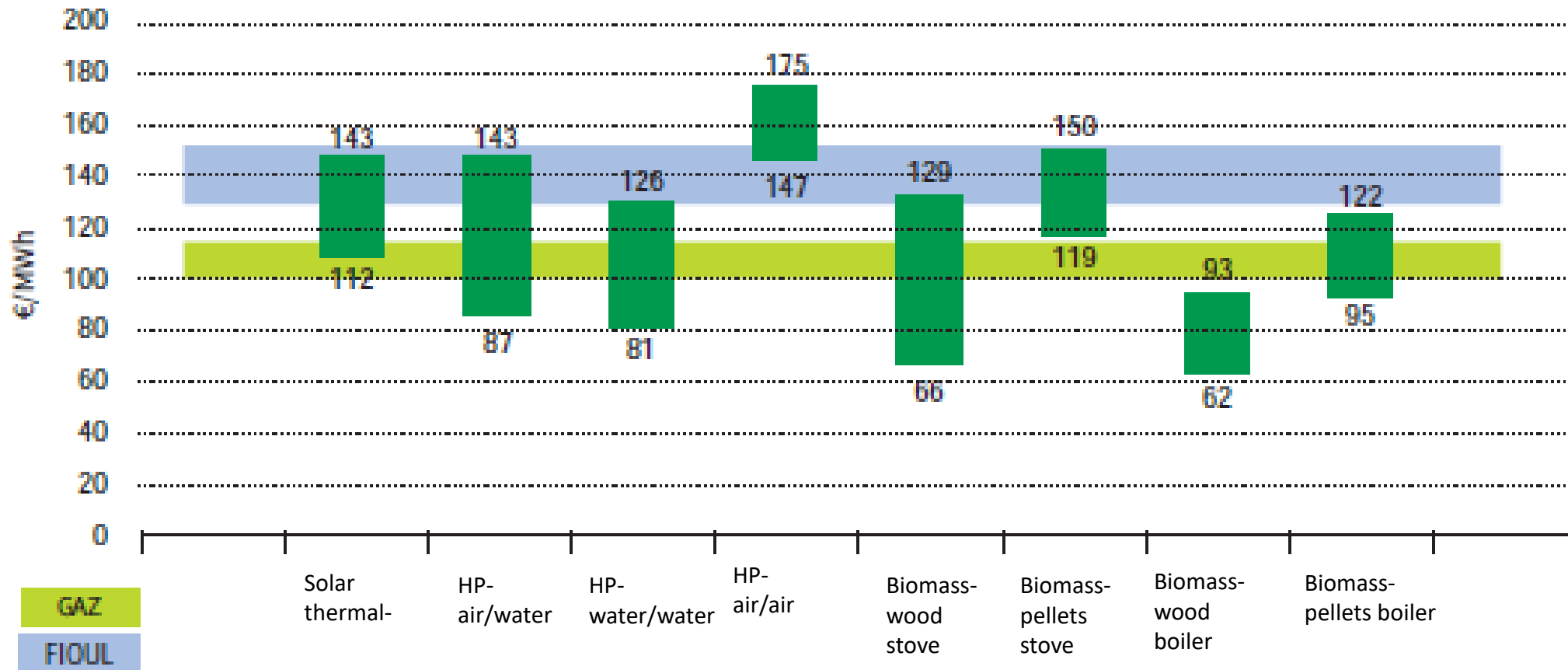


Source:
ADEME

EGEC
GEOTHERMAL

The competitiveness in the heat sector— Individual buildings

LCoE comparison for individual heat systems (France, 2019)



Source:
ADEME

The market conditions in the heating sector

- Beyond an internal market for electricity and gas
 - Towards an heat market for a level playing field
 - Heat Infrastructures need
- Carbon pricing & competition rules:
 - From a restrictive (state aid guidelines) & conservative (market share for fossil fuels) approach on competition to a positive one !
- The need of Institutions for decarbonisation of Heating & Cooling:
 - > Heat Forum, ENTSO-Heat...



2020

The

#GeothermalDecade
begins...

Geothermal heating and cooling technologies



Heat pumps



Industrial uses:
e.g. in agro-
industry

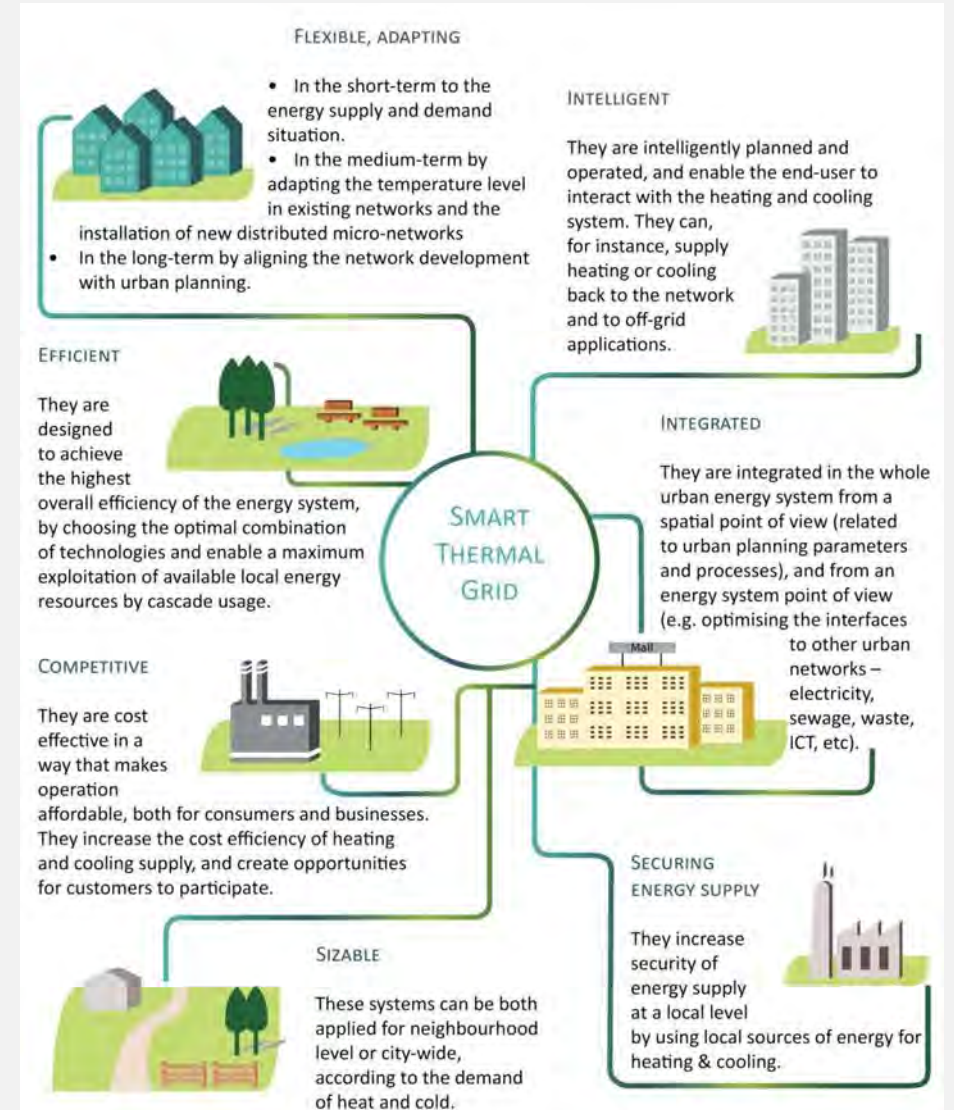
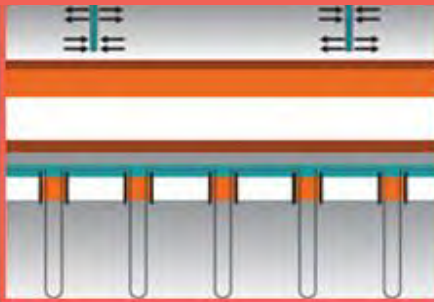


District heating
and cooling

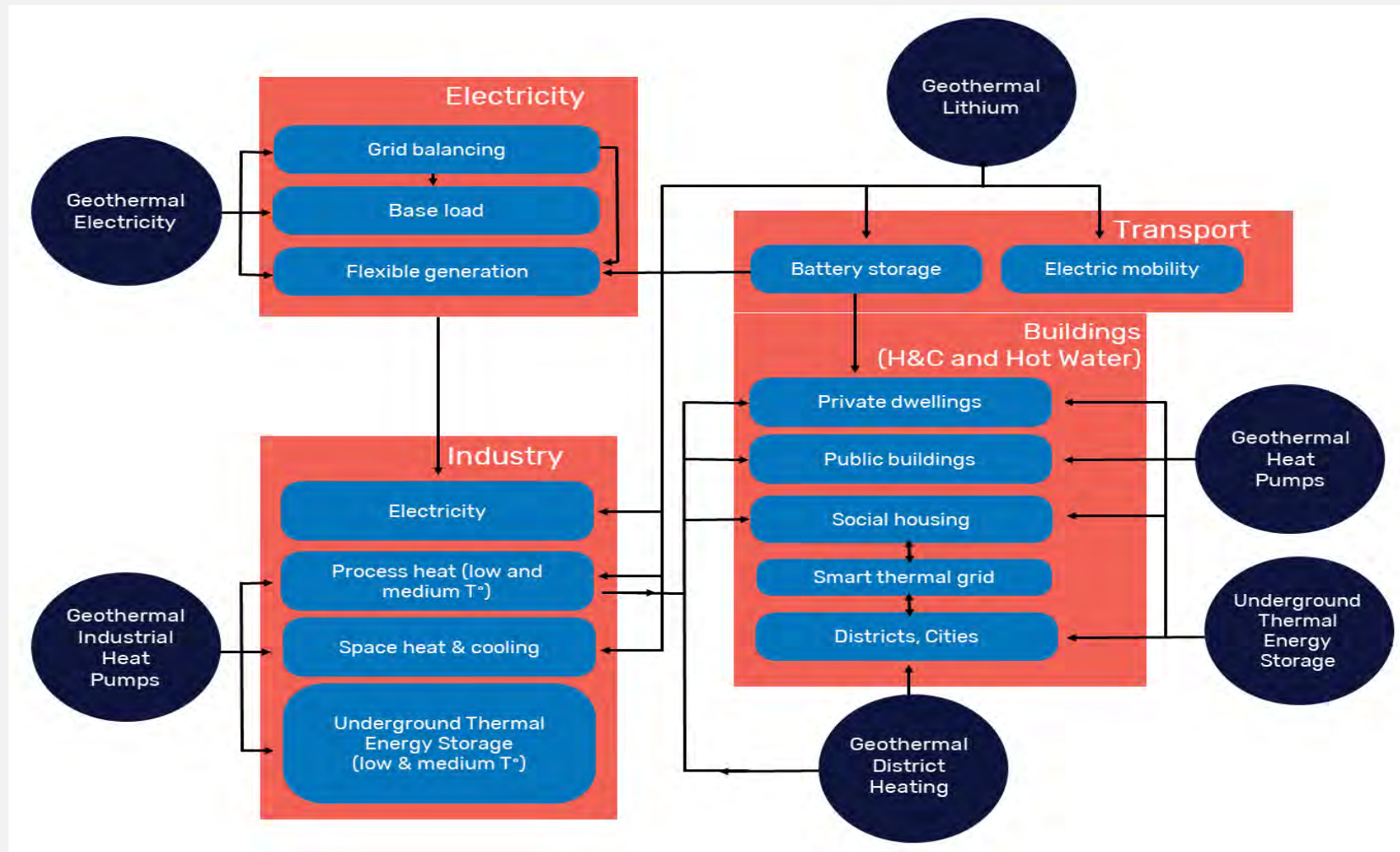
EGS and
cogeneration



Underground
thermal storage



Visualising smart sectoral integration for geothermal energy



More than 25% of the EU population lives in areas directly suitable for geothermal district heating

Map of areas suitable for geoDH networks and actual geoDH installed capacity according to available geological data

Source: ETIP-DG, adapted from GEODH and EGEN market report

