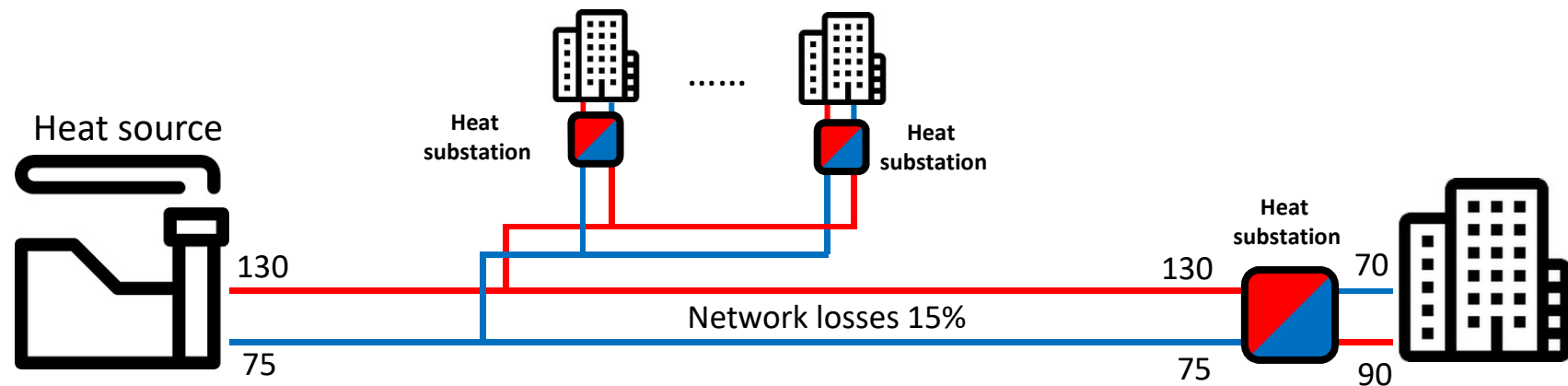


Decarbonising the heating system



Traditional heating system



- Relatively high network losses
- Coal heat source – problems with emissions

- buildings non thermomodernized
- oversized system
- parameters 90/70°C

EU regulations -> trends

Reduction of
emissions (all types)

Reduction of human
impact on
environment

Energy efficiency

Decentralization of
heat sources

Air quality

No solid fuels

Emissions control
regulations (IED, MCP)

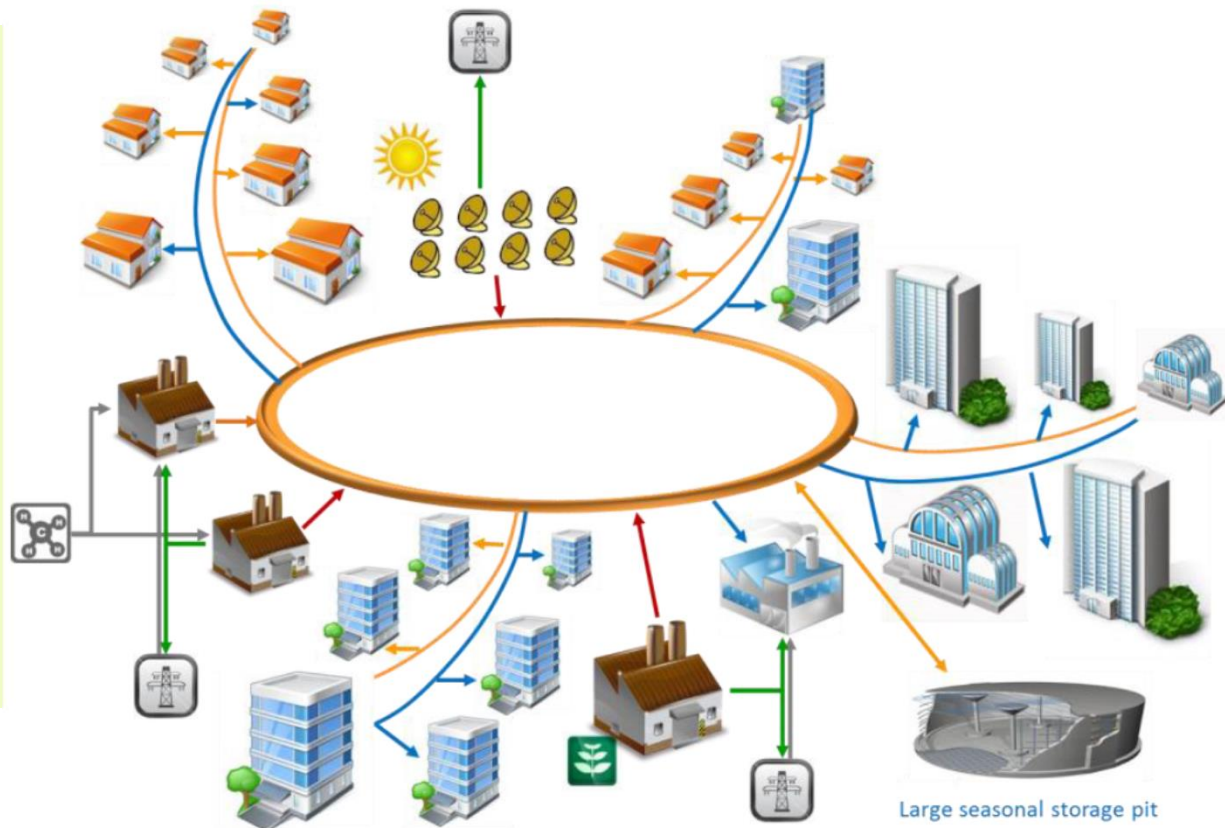
EU solutions FLEXYNETS (1/2)

FLEXYNETS = **F**ifth generation, **L**ow temperature, high **EX**ergy **Y** district heating and cooling **NET**works

Main goals:

- ❑ Lower DHN heat losses,
- ❑ Usage of decentralized heat sources working on a shared DHN,
- ❑ DHN as heat accumulator,
- ❑ Automation & control of many individual sources - challenge

<http://www.flexynets.eu/en/>

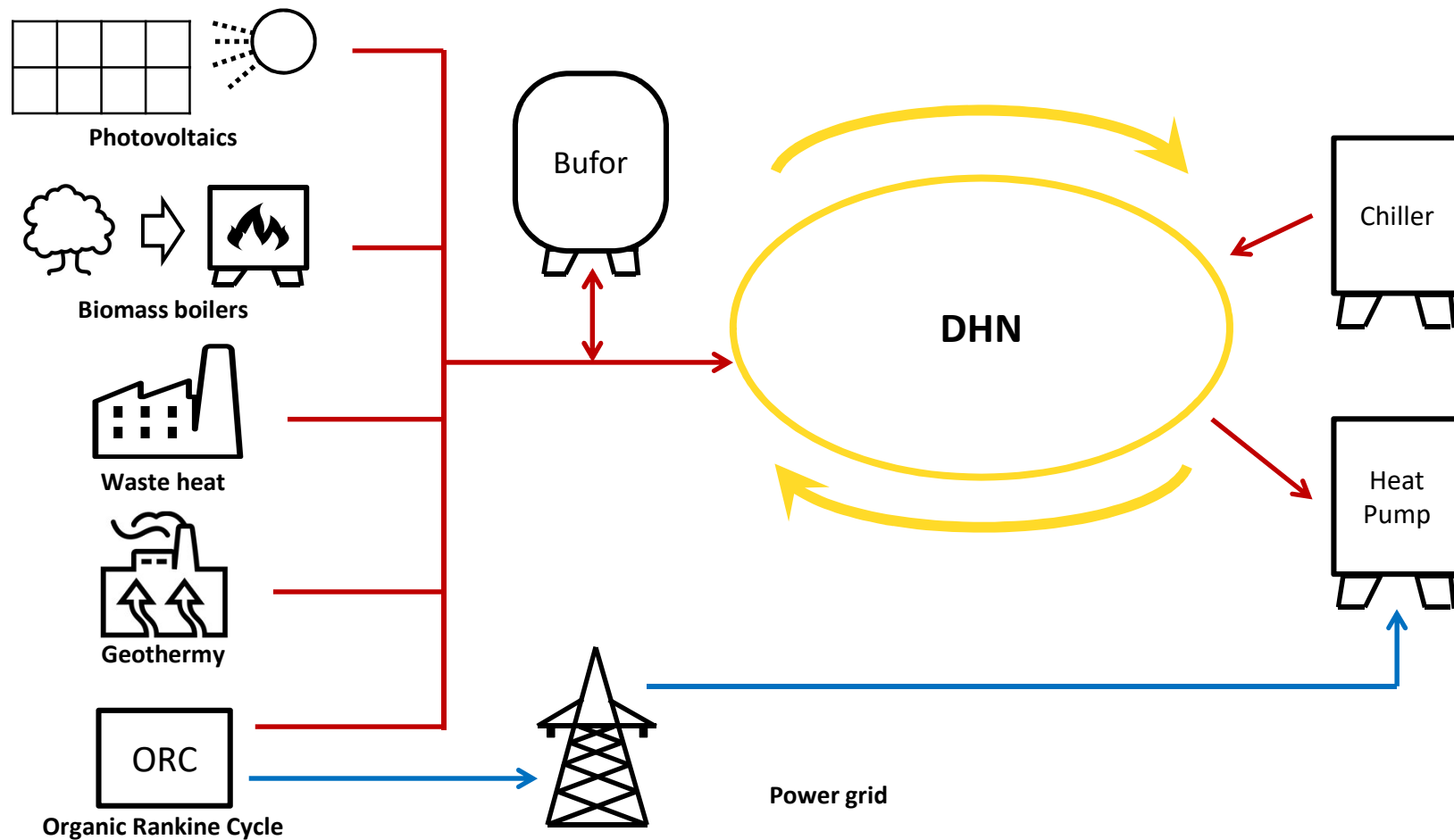


* Exergy - maximum work that a thermodynamically open system can perform in a given environment, going into a state of equilibrium with the environment.

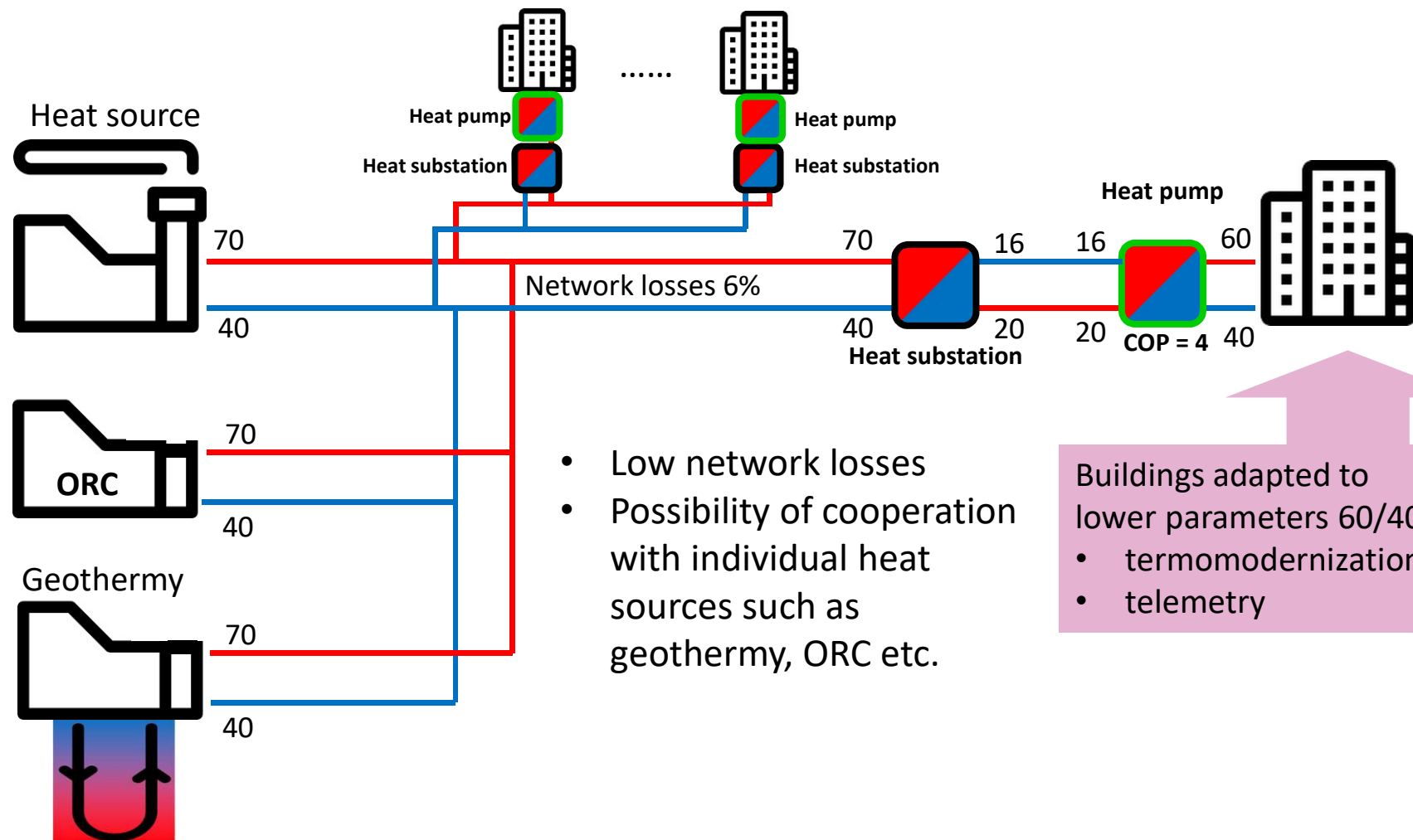
EU solutions FLEXYNETS (2/2)

Low temperature sources

Low temperature DHN



Improving the efficiency of the heating system – lowering the temperature and connecting renewables source



- Low network losses
- Possibility of cooperation with individual heat sources such as geothermy, ORC etc.

Buildings adapted to lower parameters 60/40°C

- termomodernization
- telemetry

Improving the efficiency of the heating system – hybrid system

