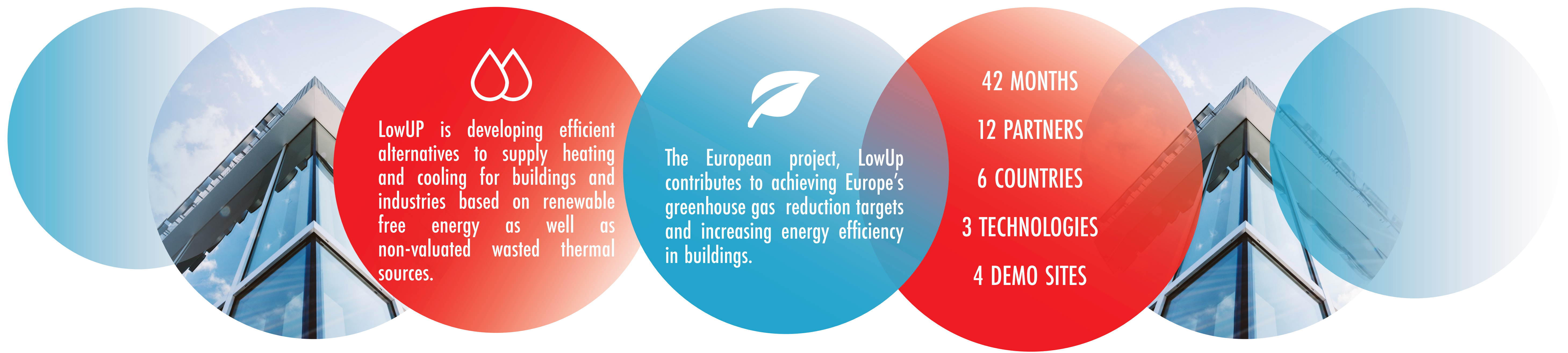




Low valued energy sources UPgrading for
buildings and industry uses



THREE TECHNOLOGIES, FOUR DEMO SITES

The LowUP partners are working together to **develop and demonstrate** one heating and one cooling system for office buildings, and one heat recovery system for industrial processes. The systems will be demonstrated at **four demo sites**: a water treatment plant (ACCIONA) in Madrid, a test office building (ACCIONA) in Sevilla, an industrial facility and a student hall.

HP-LOWUP

Waste heat recovery and upgrading via heat pump

Usage: Industry - all suitable cases involving low temperature processes

Challenge: To recover heat waste from an industrial process through innovative heat pumps and heat exchangers able to deliver heat up to 80°C

HEAT-LOWUP

Low exergy system directly fed by recovered heat from solar panels & sewage water

Usage: New or refurbished middle size tertiary buildings

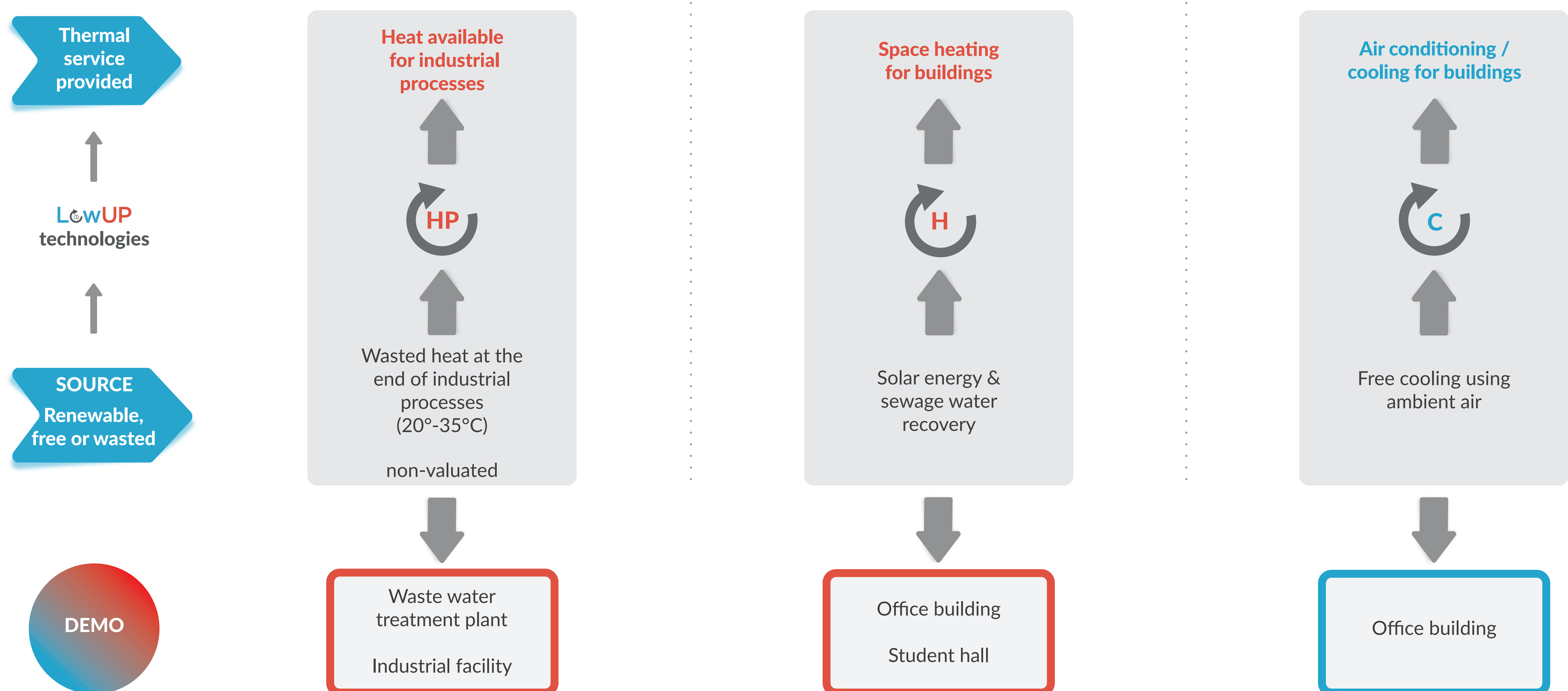
Challenge: To develop an integrated solution that produces, stores and distributes low temperature heating (30-35°C) using: PV module, sewage heat recovery, multi-temperature storage system and radiant floor heating system

COOL-LOWUP

Low exergy system directly fed by renewable and free energy sources

Usage: New or refurbished middle size tertiary buildings

Challenge: To develop an integrated cooling system (17-19°C) based on ambient air and tap water using: wet cooling tower, water to water heat exchanger, storage system and chilled beams



ABOUT HEATING & COOLING

Heating and cooling refers to the energy needed to warm and cool buildings, both residential and tertiary (i.e. office buildings, hospitals, etc.) and includes the heating needed in nearly all industrial processes to manufacture products that we use every day.

Heating and cooling accounts for 50% of the EU's annual energy consumption of which 85% comes from burning fossil fuels, mostly coal, oil and natural gas.

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