Case Studies
https://heatpumpingtechnologies.org/annex57/

ANNEX 57 — Flexibility by implementation of heat pumps in multi-vector energy systems and thermal networks

Municipal utility, Rosenheim, Germany

"Large-scale heat pumps in district heating networks – installation, operation, monitoring and system integration"

KEY FACTS

Type of heat pump:
river heat pump

Energy distribution System:
33 MW_{el}, 115 MW_{th}, 4,5 MW_{th} heat pumps

Energy Storage:
heating storage (1.000 m^3)

Control for the flexible heat pump operation:
Heuristic control: optimization for minute reserve on the electricity market

General description:
3x 1,5 MW_{th} heat pump

Heat Source:
waste, natural gas, bio methane, waste wood, river water, electricity

Project:
Place: Berlin / Germany
Time Frame: 4/2021 - 3/2026
Owner/leader: Stadtwerke Rosenheim GmbH & Co. KG
R&D-project partners:
AGFW; Fraunhofer ISE; IER Stuttgart

Funding
Federal Ministry for Economic Affairs and Climate Protection (BMWK) due to an enactment of the German Bundestag under grant number 03EWR008A.

Summary of the project:

The municipal utility Rosenheim provides heat and electricity using a range of fuels: waste, natural gas, bio methane and waste wood are burned in a waste heating plant, several CHP units and wood gasifiers.
The newly installed heat pumps are part of three so-called innovative CHP systems (iKWK) which were completed in fall 2023. The LHPs are supplemented of two electric boilers of 5,1 MW_{th} as power-to-heat plants. Three gas engines of totally 13,5 MW_{el} complete the systems. The heat is stored in an existing 1.000 m^3 tank. To be able to react flexibly to the actual availability of electricity, grid requirements and the heat demand, the three heat generating technologies are intelligently linked using the control and instrumentation technology.
In the Real-World Laboratory the integration of the LHP in den district heating network and the optimal application regarding grid friendliness and economic efficiency is being investigated.

Contact Information/Links

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