HEATWISE

Holistic Energy Management and Thermal Waste Integrated System for Energy Optimization

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FUNDED BY

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Ambition

HEATWISE aims to maximize energy efficiency and waste heat recovery from IT equipment and HVAC systems on a building level. Based on self-assessment and self-optimization tools, it repurposes the generated waste heat potential by the thermal management process for other compatible energy-demanding purposes through the use of a sophisticated digital twin designed to dynamically manage complex energy exchanges and precisely simulate and optimize energy flows.

Objectives

- Novel automatically operated integrated building and DC ecosystem
- Waste heat recovery of 100%
- Power Usage Effectiveness (PUE) below 1.05
- Energy Reuse Factor (ERF) improved by a minimum of 10%
- Primary Energy Saving (PES) of 20% for each server

Pilots

- A university building in Denmark
- A residential and public mixed-usage building in Switzerland
- A smart factory in Turkey
- A super computing center in Poland

Budget & Duration

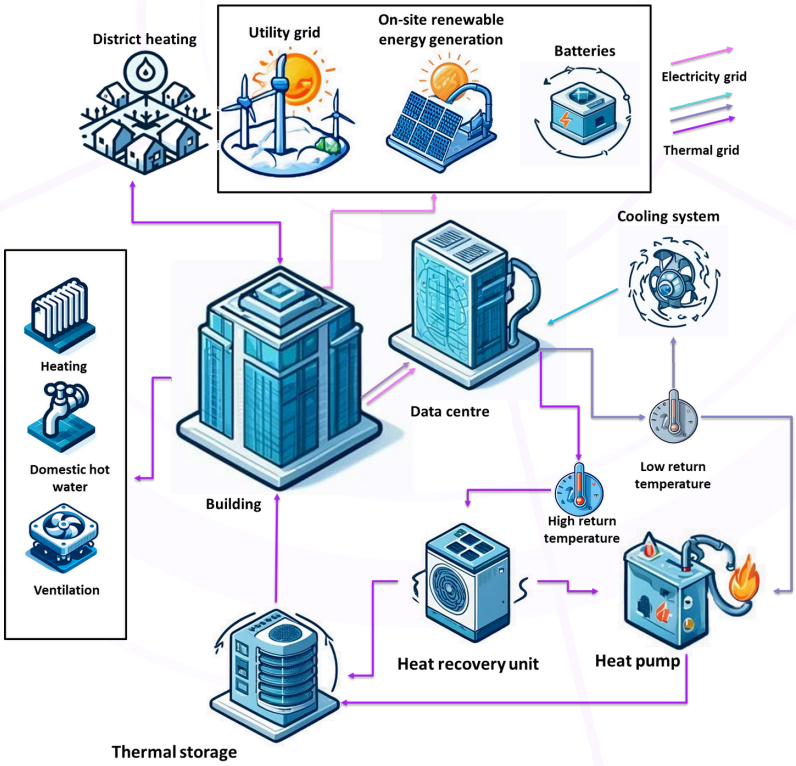
- **€4,5M**
- **2024 - 2026**

Challenges

- **Date Centers:** increasing heat, confined space, energy cost, reporting obligation on resource efficiency, space rental fee.
- **Buildings:** greening the buildings, passive building, energy cost.
- **Policy Makers:** integrated KPIs for integrated systems.

HEATWISE Solutions

- Multi-objective building thermal energy management system.
- Self-assessment and optimization tool with open-source CFD tools for the thermal simulations of pilot sites.
- Hybrid air immersion and on-chip dielectric liquid cooling system.
- Holistic data centre management system.



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