DANISH TECHNOLOGICAL INSTITUTE

Economic optimization of heat pump-based steam production systems

Motivation

- Decarbonization of industrial heat supply
- Electricity-based steam production required at 100 °C to 200 °C
- Optimized system design required to exploit technological solutions

Conditions

- Master's project (possible to adjust to Bachelor's)
- Experienced supervisers at DTI
- Involvement in cutting-edge R&D projects
- Collaboration with manufacturers and customers possible

Objectives

- Analysis of suitable equipment
- A simulation tool for optimized system design and cost estimation
- Demonstration of case studies

Methods

- Thermodynamic modelling and economic analysis (Matlab/Python/EES/Excel/VBA)
- Numerical optimization

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