

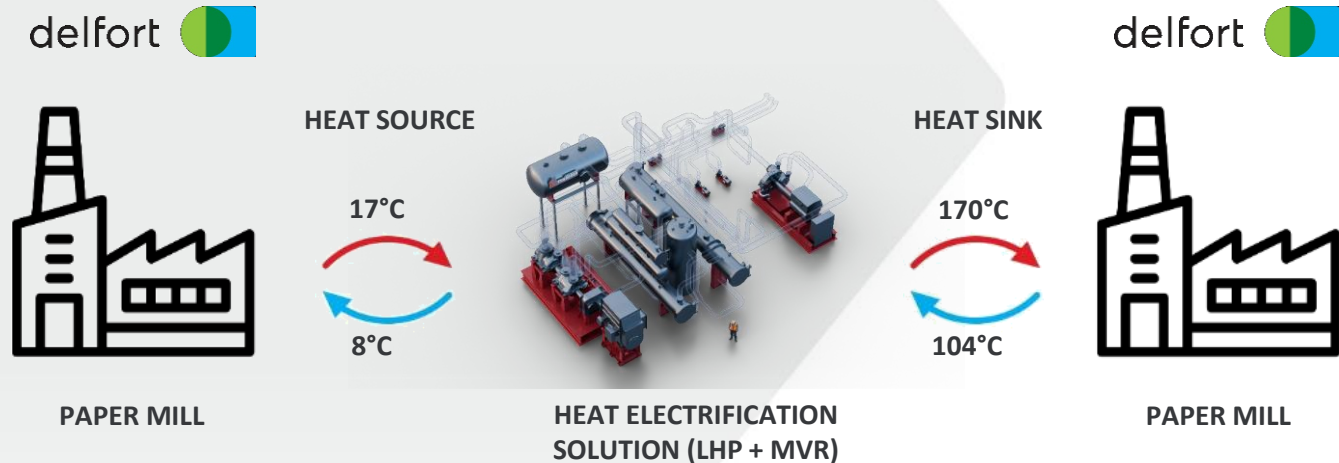


CASE HISTORY DELFORT

CASE HISTORY

DELFORT

The project demonstrates how industrial heat pump technology can recover waste heat and upgrade it into valuable process steam, supporting decarbonization, electrification and energy efficiency objectives.



PROJECT FEATURES

- Country: Finland, in operation since 2026
- Size: 12 MWth
- Exploitation of paper mill waste heat to generate steam at 3.4 bar(a) for the process
- Output: superheated steam at 170°C delivered to the paper mill
- Avoidance of approximately 19,000 tonnes of CO₂ emissions per year

TECHNICAL FEATURES

- Integration of LHP with MVR to provide high-temperature steam at high efficiency (COP 2)
- Centrifugal MCO compressor
- LHP working fluid: natural refrigerant

 [WATCH THE VIDEO](#)

Inside the Project

THE CUSTOMER

Delfort Group is a global leader in specialty and functional papers serving the tobacco, pharmaceutical, food packaging and label industries. Sustainability is a core element of Delfort's business strategy. To achieve its decarbonization targets, the company is continuously investing in innovative technologies capable of reducing the environmental impact of its production processes while maintaining operational excellence.

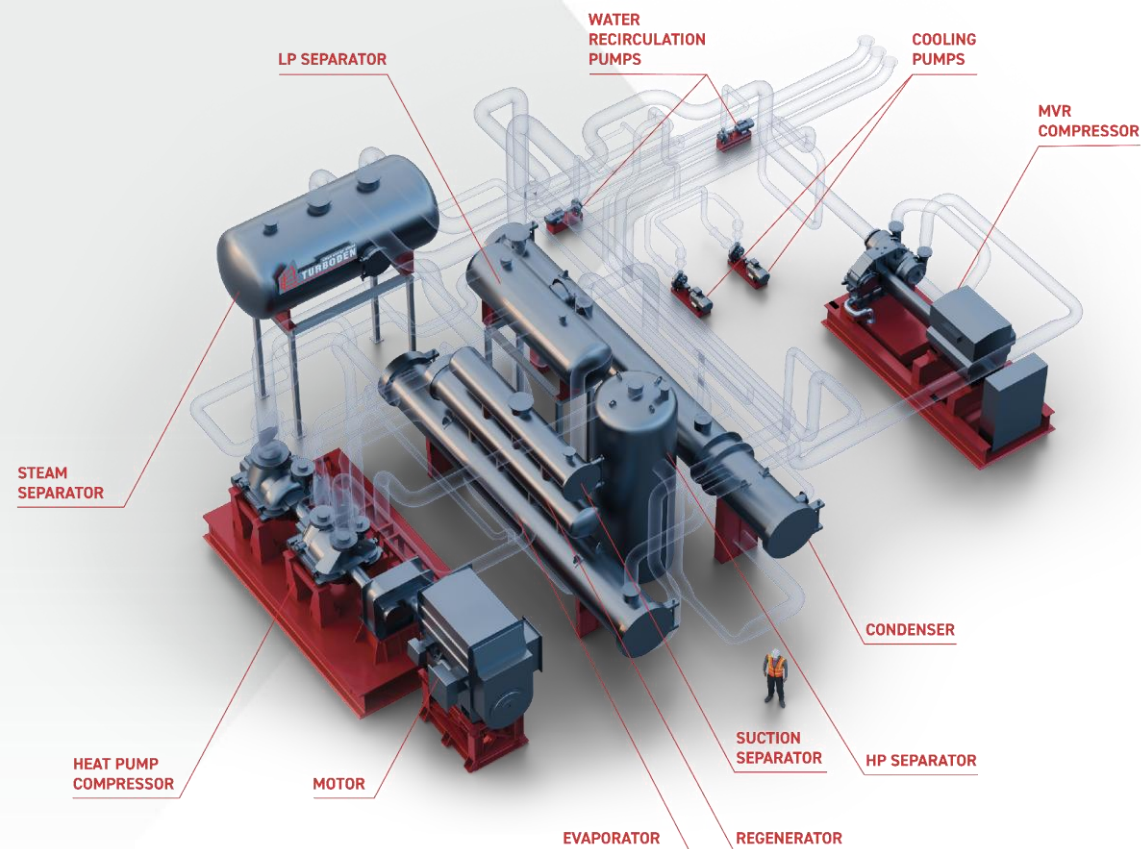
THE NEED

For its mill in Tervakoski, Finland, Delfort set an ambitious objective: replace fossil-fuel-based steam generation with a fully electrified and CO₂-free solution capable of delivering the same reliability, quality and continuity required by paper production. The project also presented significant engineering challenges, including limited installation space within the machine hall and the need to ensure seamless integration with the paper mill's continuous operation.

THE SOLUTION

Turboden developed a tailor-made solution combining a Large Heat Pump (LHP) and a Mechanical Vapor Recompression (MVR) system. The plant recovers low-grade waste heat from the production process and upgrades it into valuable process steam using CO₂-free electricity. The integrated system generates 12 MWth of superheated steam at up to 170°C, delivering high efficiency with a COP of approximately 2.

Installed at Delfort's Tervakoski mill, the project represents the largest steam-producing heat pump ever built, demonstrating that industrial steam electrification is no longer a future concept, but a commercially available solution for decarbonizing industrial heat.



P&I Diagram

