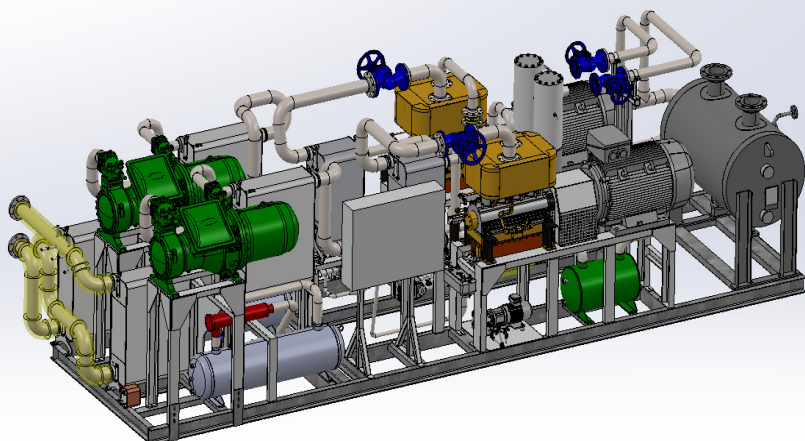


# ThermBooster

(Vapour compression heat pump with piston compressors)

 Push2Heat

Heat upgrading technologies



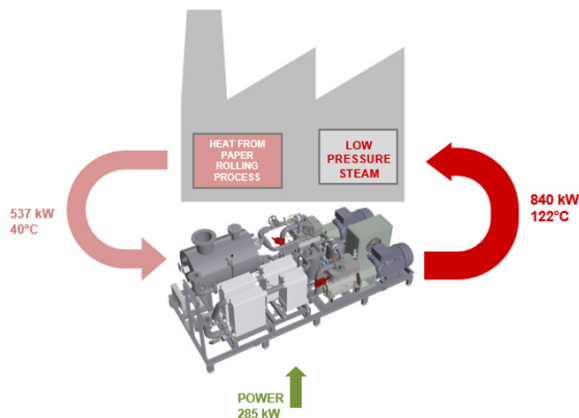
Technology provided by 

## Technology Overview

The **ThermBooster** is a **high-temperature heat pump** designed for generating **industrial process heat**. Currently, the heat pump can achieve temperatures of **165°C**, with future capabilities expected to reach **200°C and above**. This achievement is made possible through a specially developed **high-temperature piston compressor**, in conjunction with **innovative process technology**.

### Objective

In the **Push2Heat project**, the goal is to generate **low-pressure steam** at approximately **2 bar(a)** for use in the **paper industry**. This is achieved by utilising the **exhaust heat** from a **paper machine dryer** as the heat source. Because a relatively high **temperature lift** is needed, the **heat pump** will execute this operation in **two stages**.



## Technical details

- **Heat source:** heat generated from the exhaust of a paper machine dryer using a water glycol circuit.
- **Heat source temperature:** 30–50°C
- **Heat sink:** Low pressure steam at 2.2 bar (a)
- **Heat sink temperature:** 117–123°C
- **Refrigerants:** R515B (first stage) and R1233zd (second stage)
- **Expected output:** 1180 kW
- **Expected COP:** 2.3
- **Operating** 24/7

## PUSH2HEAT in a nutshell

PUSH2HEAT is an EU-Funded project that aims at addressing the technical, economic, and regulatory barriers that prevent heat upgrading technologies to be widely deployed. It is doing so by scaling up four different heat upgrading technologies to optimise their efficiency and economic performance. In addition, it is focusing on integrating them into the relevant industrial sectors such as the paper and chemical industries.

Scan to learn more



[linktr.ee/push2heat](https://linktr.ee/push2heat)

## Glossary

- **2 Bar(a):** 2 bar(a) means the pressure is twice as high as the normal atmospheric pressure at sea level, which is approximately 1 bar.
- **Temperature lift:** This term refers to the increase in temperature required for a specific process or operation.
- **Piston Compressor:** A piston compressor is a device that compresses air or gas using a piston, which is a moving part inside a cylinder.
- **Heat Sink:** The destination or recipient of the heat.
- **Heat Source:** The origin of heat in a system.
- **Refrigerants:** Substances used in the refrigeration cycle to absorb and release heat. R515B and R1233zd are specific types of refrigerants.
- **COP (Coefficient of Performance):** A measure of the efficiency of a system, indicating how much useful energy it produces compared to the energy input.



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