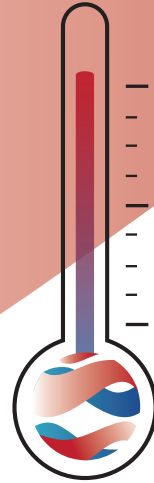


WASTE HEAT RECOVERY IN INDUSTRIAL DRYING PROCESSES - DRYFICIENCY

DryFiciency demonstrates two high-temperature industrial heat pump technologies for recovery of waste heat to save up to 80% of energy in drying.



THE CHALLENGE

ENERGY COST AND CO₂ SAVINGS:
12-25% of energy in industrial processes is used for drying. Heat recovery from the exhaust gas is not always efficient, leading to 11.3 EJ of energy loss in the EU and associated CO₂ emissions.

DRYFICIENCY

TECHNOLOGY AND DEMONSTRATION

COST EFFICIENT OPEN LOOP HEAT PUMP FOR STEAM DRYING

A lubricant free, multistage compression system based on mass-produced air turbo-compressors with supply temperatures of up to 150°C.

→ *Demonstration by Scanship for sludge drying.*

FIRST CLOSED LOOP HEAT PUMP FOR AIR DRYING

Industrial closed loop heat pumps with a supply temperature of up to 160°C and a heating capacity of around 400 kW.

→ *Demonstration at Agrana Stärke for starch drying.*

→ *Demonstration at Wienerberger for brick drying.*

KEY PERFORMANCE TARGETS

- Improve energy efficiency by up to 80%
- Reduce production cost by up to 20%
- Reduce CO₂ emissions up to 75%

OBJECTIVES

Increase energy efficiency and reduce CO₂ emissions by:

- Demonstrating and validating two DryFiciency heat pump technologies in three industrial plants.
- Generic design approach to replicate the technology in a range of industries in both newly constructed and existing plants.
- A training programme to make engineering know how available and promote industry uptake.

CONTACT: dryficiency@ait.ac.at

Picture Credits: © RTDS Group, Shutterstock
Responsible for content and layout: RTDS Group

The project has received funding from the European Union's Horizon 2020 programme for energy efficiency and innovation action under grant agreement No. 723576

