



Cost Reduction Industrial Heat Pumps



Project Leader:
Cluster:
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OPM:
Partners:

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Budget:
Planning:

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689.381€
October 2016 – December 2018

Objective:

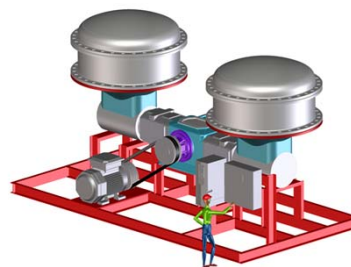
- The overall objective is to develop and implement heat pump technology that is able to generate heat in an economically feasible way for industrial applications, using waste heat.
- More specific, this projects wants to demonstrate that a cost target of **150-200 €/kWth** can be achieved.

Motivation:

- Heat pumps allow for the recycling of waste heat, by upgrading the temperature level of this waste heat.
- The CAPEX of industrial heat pumps presently hampers the widespread implementation of this technology.
- The broad implementation of heat pumps in the Dutch industrial sector can annually save a staggering 87 PJ of energy.

Project scope:

- End-user demands & system integration
- Cost reduction options (components, engineering, manufacturing, measurement & control)
- Experimental verification of two heat pump concepts (compression, thermoacoustic)
- Market potential & consortium for follow-up



Impression of full scale TA heat pump



TA compressor

Applicability:

- Targeted markets are the refining, chemical, food, paper & pulp and steel sector.
- Temperature levels up to 200°C.
- New worldwide business opportunities for equipment manufacturers and technology providers

Status & Outlook:

- Market potential & standard sizing determined
- Investment costs < 200 €/kWth seem feasible for compression heat pumps
- TA cost reduction study shows 270 €/kWth, further reduction needed
- TA experiments planned for Q4
- Compression heat pump experiments delayed

