

I-ThERM

I-THERM PROJECT AIMS TO:

Investigate, design, build and demonstrate innovative plug and play waste heat recovery solutions to facilitate optimum utilisation of energy in selected applications with high replicability and energy recovery potential in the temperature range 70°C – 1000°C



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 680599

SPIRE Sustainable Process Industry through Resource and Energy Efficiency

PARTNERS



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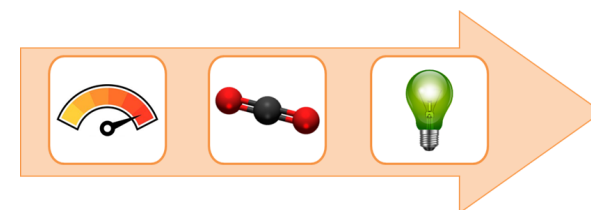
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INDUSTRIAL THERMAL ENERGY RECOVERY CONVERSION AND MANAGEMENT

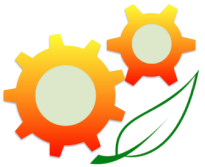


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supercritical CO₂ high grade heat to power conversion

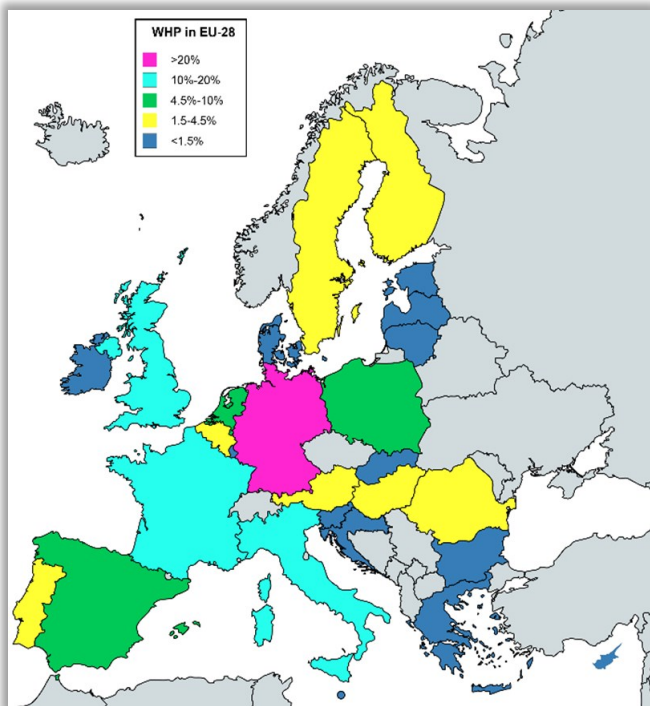
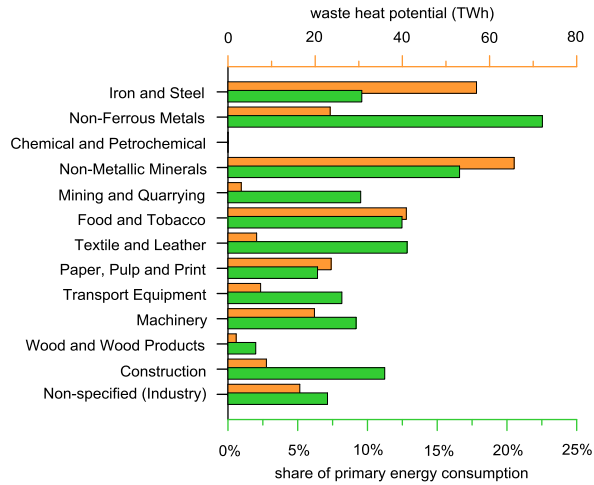
www.itherm-project.eu



I-ThERM

sCO₂ HEAT TO POWER

Industrial high-grade (>300°C) waste heat potential in the EU28
275 TWh = 8.6% of primary energy consumption



source DOI: 10.1007/s40974-019-00132-7

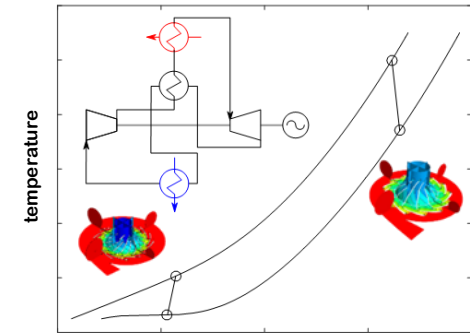
Key Features

- ◆ Direct heat recovery from industry-type flue gas
- ◆ 50kWe design power output at 20% efficiency
- ◆ Supervisory control system for the whole power generation test facility
- ◆ Compliant to Pressure Equipment Directive

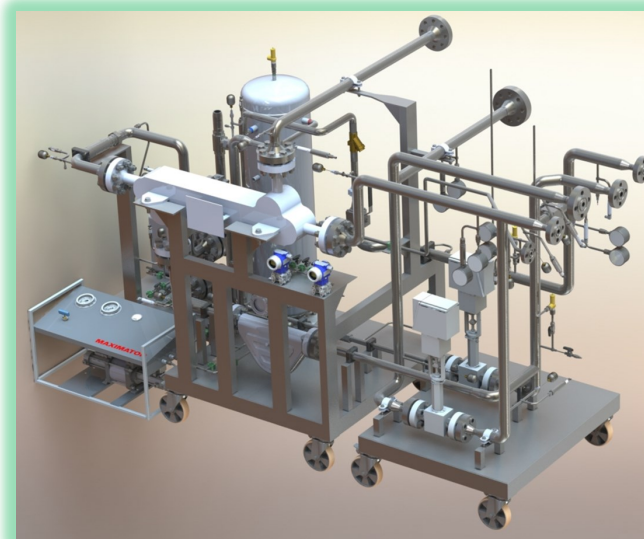
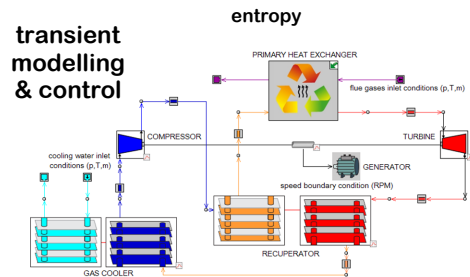
sCO₂ demonstrator at Brunel University London



simple regenerative cycle layout



transient modelling & control



sCO₂ loop & ancillaries



Compressor-Generator-Turbine unit

