

Project profile

Topic

EE-18-2015: New technologies for utilization of heat recovery in large industrial systems, considering the whole energy cycle from heat production to transformation, delivery and end use.

Call

H2020-EE-2015-1-PPP

Grant agreement no
680599

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I-ThERM is a
SPIRE PPP granted project



Consortium



Brunel University
www.brunel.ac.uk

Spirax Sarco
www.spiraxsarco.com

Tata Steel
www.tatasteeleurope.com

Synesis
www.synesis-consortium.eu

Enogia
www.enogia.com

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www.energyxperts.net

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www.arcelormittal.com

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www.econotherm.eu

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www.avanzare.es

Cyprus University
of Technology
<http://www.cut.ac.cy>

Center for Technology,
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www.cetri.net

Technological Educational
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www.ee.teihal.gr

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www.arluy.com

H2020-EE-2015-1-PPP



*Industrial Thermal
Energy Recovery
Conversion and
Management*

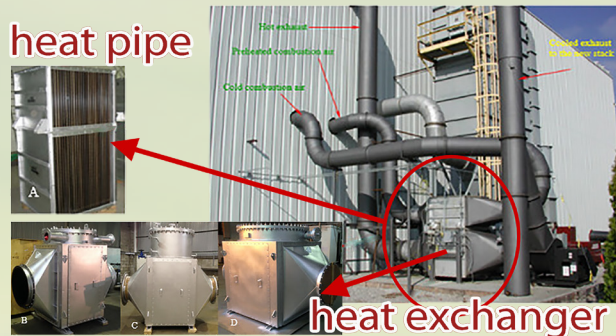


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The need

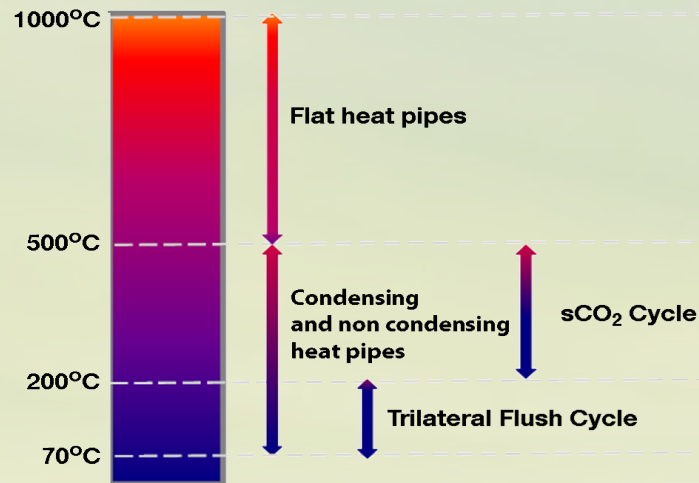
Waste heat recovery is the process of capturing heat from waste streams of an existing industrial process and using this heat directly, upgrading it to a more useful temperature, and/or converting it to electrical power or cooling. The energy generated from heat recovery, if not required by the process or industrial site can be exported to neighboring facilities or to electrical or heat distribution networks.



Waste heat recovery systems can offer significant energy savings and substantial greenhouse gas emission reductions. The waste heat recovery market is projected to exceed €45 billion by 2018, but for this projection to be realised and for the European manufacturing and user industries to benefit from these developments, technological improvements and innovations must take place aimed at improving the energy efficiency of heat recovery equipment and reducing installation costs.

The Project

The main aim of the I-ThERM project is to investigate, design, build and demonstrate innovative plug and play waste heat recovery solutions and the optimum utilization of energy within and outside the plant perimeter for selected applications with high replicability and energy recovery potential in the temperature range 70°C- 1000°C.



The project will focus on two-phase innovative heat transfer technologies (heat pipes) for the recovery and use of this heat:

- within the same facility or export over the fence;
- for generation of electrical power;
- a combination of (a) and (b) depending on need.

Work Plan

- WP1:** Management, Coordination IPR and Exploitation
- WP2:** Industry Waste Heat in EU27 and Demonstration Sites
- WP3:** Web-based Heat Recovery Monitoring and Optimising Tool
- WP4:** TFC Power Generation System
- WP5:** sCO₂ Power Generation System
- WP6:** Flat Heat Pipe Systems (FHPS)
- WP7:** Heat Pipe based Condensing Economizer (HPCE)
- WP8:** System Controls and Integration
- WP9:** Coatings for Heat Recovery Heat Exchangers
- WP10:** Technology Demonstration and Energy and Environmental Analysis
- WP11:** Communication, Engagement, Dissemination

