



Newsletter Issue 4, 2018

Developing a standard modularised solution for flexible and adaptive integration of heat recovery and thermal storage capable of recovery and management of waste heat

From the Smartrec consortium

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Conferences/workshops:

1. *Aluminium Industry exhibition, Dusseldorf 9-11 October 2018*

Forthcoming events:

1. *Webinar on Smartrec knowledge-based software tool, February 2019*



Smartrec Knowledge-based Tool: complete integration of database and software system to provide informed decision support

The Smartrec consortium has developed a tool to provide *design specifications of the heat capture storage systems* and the *expected cost and environmental benefits*. Although designed to perform business case analysis for recovering energy from secondary aluminium production, the tool can also be applied to other industries such as ceramic and glass. The main features of the tool are:

- User-friendly GUI to input waste heat source data.
- Helps analysis of user data and provision of cost and environmental benefits for the industry integrated with Smartrec solution.
- Provides options for the end users to provide inputs to calculate the amount of recoverable waste heat and associated business case:
 1. The *Average-based* approach, where the mass or volume of the flue gasses from the process being assessed can be measured to calculate the energy in flue gas.
 - 2 the *Composition method* the amount of energy in flue gas can be calculated by applying either mass or volumetric methods.
 3. *Plan capacity-based* approach for end users who do not possess data for either of the above, can be implemented. However, values taken from this method can show is an indication only and may vary significantly from the real data based other approaches.

The conceptual design mode of the Smartrec knowledge-based software tool will be free of charge for the general public and available for download on [the project website](#).

Smartrec launches Ceramic prototype

The Smartrec Ceramic prototype was launched at the pilot plant of the Institute for Ceramic Technology (ITC-AICE) in July 2018. This heat recovery system, based on an Heat Pipe Heat exchanger technology (HPHE), was manufactured by [Econotherm](#) and is installed at the stack flue gases of a pilot kiln fueled by natural gas.



The first tests have been undertaken by ITC-AICE and Econotherm in July and August 2018 to determine the performance of this innovative heat recovery installation under working conditions like those found in ceramic tile industrial kilns.

The first results are very encouraging as they have confirmed the high efficiency of the prototype to recover the heat lost through the stack. More tests will be conducted in the next months, along with the adequate experimental data treatment, to quantify the heat recovery potential and optimize the system functioning.



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Smartrec CAD model



3D Model of our full-scale Industrial Prototype of the Smartrec System at our intended End User Site.

Smartrec information Brochure

For more information on the project, [CLICK HERE](#) to download our 8 page brochure.

Contact us:

For any questions or feedback visit our website at:
<http://smartrec.eu/contact/>



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