

Accepted Manuscript

Editorial: Industrial waste heat recovery

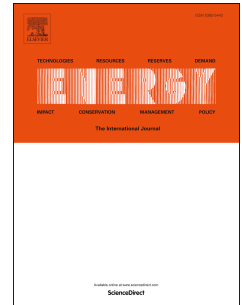
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PII: S0360-5442(18)31307-0

DOI: [10.1016/j.energy.2018.07.013](https://doi.org/10.1016/j.energy.2018.07.013)

Reference: EGY 13278

To appear in: *Energy*



Please cite this article as: Jouhara H, Olabi AG, Editorial: Industrial waste heat recovery, *Energy* (2018), doi: 10.1016/j.energy.2018.07.013.

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Industrial Waste Heat Recovery

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Abstract

The growing energy demands has led to a soaring level of greenhouse gas (GHG) production, with the implementation of EU legislations, the production of GHG and waste is being curbed but with an economic disadvantage. Multiple industries face losing their competitive edge due to the restrictions currently in place due to the inability to readily burn fossil fuels. With developments of thermal and physical waste management, multiple companies are utilising waste heat technologies to recapture previously lost energy to be used in other applications. The spectrum of papers in this special issue can be split into two main themes recovering energy to be used in other applications such as waste heat recovery applications and thermoacoustic engines and energy conversion via pyrolysis. Such technologies featured in the special edition reflect the growing need for a solution to reduce the production of greenhouse gases but also lower the level of global warming.

Keywords: Waste heat recovery; Heat Exchangers; Energy Storage

Industrial waste heat recovery systems can offer significant energy savings and substantial reductions in greenhouse gas emissions (GHGs). The European waste heat recovery market is projected to exceed €45 billion by 2018, but for this projection to materialise and for the European manufacturing and user industry to benefit from these developments, technological improvements and innovations should be considered and implemented, aimed at improving the energy efficiency of heat recovery equipment, reducing installation costs and significantly reducing GHGs to meet targets, the editor has made a significant contribution in this field which can be found in different journals and conference publications [1-8].

The international community in general has ambitious targets for reducing GHGs and the effects of Global Warming. Globally, industrial energy use is responsible for 33% of GHGs and approximately 70% of the energy demand of the industrial sector is for heat. All heating processes result in significant quantities of waste heat, up to 50% in some cases, and it is widely acknowledged that there is significant potential for heat recovery.

Enhancing the designs of energy systems is of significance as it will lead to a reduction in energy consumption for the same output; this will lead to lower emission levels and allow industrial organisations to maintain a competitive advantage commercially.

The call for papers for this special edition attracted submissions on a very wide range of topics including waste heat recovery, bio-fuel production, energy storage, process enhancement, power generation, waste-to-energy, and so on. A common theme of the authors is the desire to recover energy or materials, which otherwise would be wasted.

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