



ALTA PROCESS SOLUTIONS

AFFILIATED TO ALTA ENERGY SOLUTIONS CORPORATION

ALTIUS CENTRE – SUITE 2500 – 500 4th AVE SW CALGARY, AB, T2P 2V6 CANADA

INFO@ALTAENERGY.CA | WWW.ALTAENERGY.CA | WWW.ALTAPROCESS.CA

SCIENTIFIC & RESEARCH PROJECTS

Project No.: 11 **Year: 2017**

Project Field: Heat Exchanger Networks (HENs)

Publisher: Energy, Vol. 130, Issue C, pp. 382-391, 2017

Project Title:

Energy Benchmarking of Cement Industry, based on Process Integration Concepts

Abstract:

Cement industry is considered as an energy intensive industry, owing to the huge amount of heat consumed in pyro-process unit. There are many conventional methods around, which can be applied to carry out energy targeting in a cement production plant, including conceptual, mathematical or even hybrid. However, full application of these approaches would be time-consuming and costly. So, in this research, our attempt has been focused on development of a rapid approach for benchmarking of an existing plant with respect to energy consumption, and subsequently estimating an achievable scope for energy saving. To realize this goal, five different pyro-process units were simulated and then targeted using Pinch Analysis approach. Having done this conceptual analysis, the obtained results were mathematically correlated to shape a benchmarking model. The resulting model was also validated, in terms of accuracy, and was applied to other cement plants and showed an energy saving potential of up to 24%.