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DEI-Demonstration project Polymer Heat Exchanger

Project number	UH-30-01
Project leader(s)	Frank Tielens
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Partners	BioMCN, ISPT, Heatmatrix, Stork Thermeq
	Supported by Blue Terra
Budget	
Duration	2017-2020

Incentive

BioMCN in Delfzijl produces bio methanol based on bio feedstock. The flue gases of the steam reformers have a temperature of 300°C. This corresponds to an energy volume of 38,4 MW. BioMCN has investigated technical and financial feasible possibilities to extract the energy from the flue gases and re-use this energy.

Objective

This project aims to demonstrate the innovative technology of HeatMatrix in the business process of BioMCN. The goal is on the one hand to achieve direct energy savings at BioMCN and on the other hand to create a reference project for HeatMatrix as a prelude to repetition and further commercial rollout for similar applications.

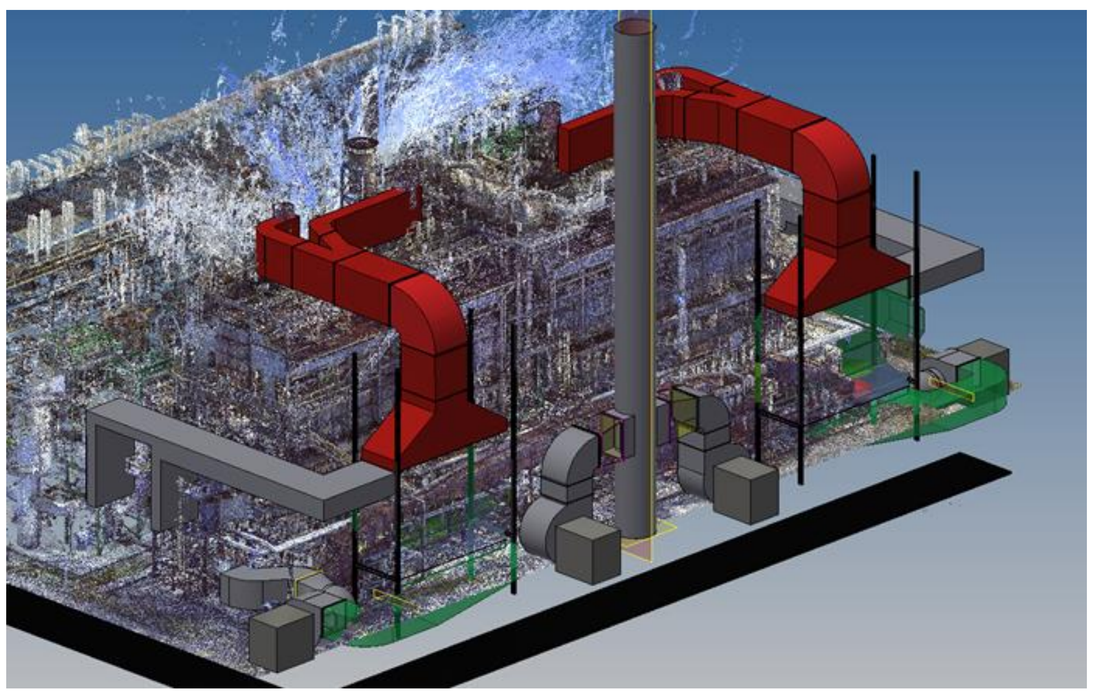

Figure: Layout Heatmatrix within production plant (source: Stork Thermeq)

Approach

Scientific challenges

Conventional metal heat recovery systems do not function in the temperature range of 200°C - 85°C because of acid condensation. **HeatMatrix** produces so-called polymer Heat Exchangers. The chosen material (plastic) and the design are specifically intended for this temperatures range. In recent years, various scale sizes have been built, however not yet for this application at this scale.

Technology needs

In order to implement the product innovation of HeatMatrix, a consortium has been formed with **Stork** as a so- called EPC contractor (Engineering, Procurement & Construction) in order to implement these polymer heat exchangers which can deal with acidic circumstances.

Results

The energy saving of the DEI-project for BioMCN is calculated at 0.31 PJ.

The main objective of this project is to prove the operation of the total design and to identify another 1,2 PJ of direct energy savings with other energy intensive industries.

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