

ENERGY EFFICIENCY THROUGH AIR JETS ENERGY RECOVERY FROM EXHAUST SYSTEMS AT S.C. CLAGI-COPLASS S.R.L.

Goal of the project

The project objective was focused on the climate change and energy consumption reduction issue through knowledge transfer to industry applications, based on the scientific and research activity of team members. Energy loss recovery measures applied to S.C. CLAGI COPLASS S.R.L. have contributed to the reduction of energy consumption.

Short description of the project

Reducing energy consumption by recovering the energy exhausted into the atmosphere by the exhaust systems.

Project implemented by

The project was implemented by the Politehnica University Timișoara at S.C. CLAGI COPLASS S.R.L.

Implementation period

01.10.2016 - 01.10.2018

Main activities

The activities were structured in three stages, as it follows:

Stage I - Preparation, installation, and monitoring - Within this stage, a database of energy consumptions was developed and for a group of 10 students an internship program was organized.

Stage II - Analysis and implementation of the optimal system - At this stage there were identified the sources with energy recoverable potential (thermographs and measurement of air jets velocities)- Figure 1-and recuperative solutions were implemented.

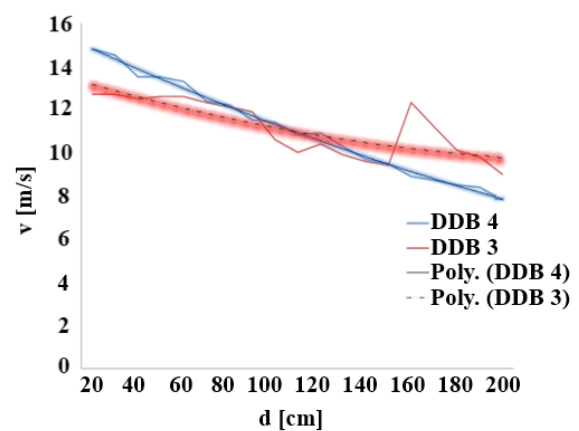
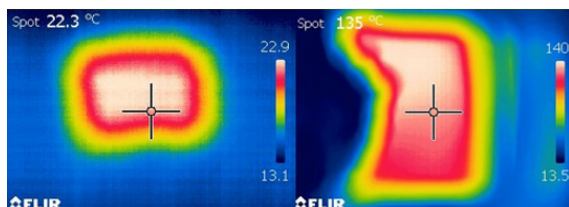


Figure 1

Stage III - Analysis and optimization - At this stage the optimal solution was analyzed, followed by the monitoring of the input / output parameters in order to establish the reduction of energy consumption at S.C. CLAGI COPLASS S.R.L. (Figure 2). The obtained results were validated by the economic agent.



Figure 2

Results

The implementation of the proposed system has led to the optimization of installations for the industrial technological equipment such as dyeing / drying booths (DDB), and savings due to the energy consumption reduction (Figure 3).

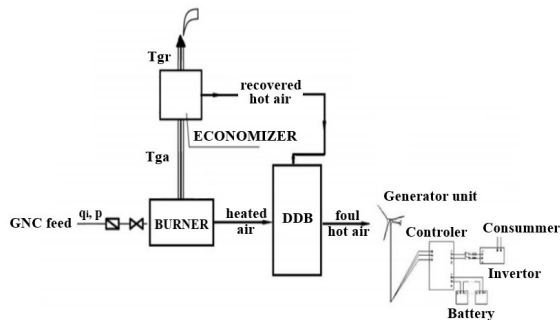


Figure 3

The technological improvement of the industrial technological equipment is an important factor for the economic agent to acquire new technical knowledge and increase the productivity. The members of the research team and the students / master students participating in the internship program have acquired entrepreneurial knowledge and skills.

The most significant result is the recovery of the quantified lost energy by reducing energy consumption (Figure 4) and, finally, the reduction of greenhouse gas emissions.

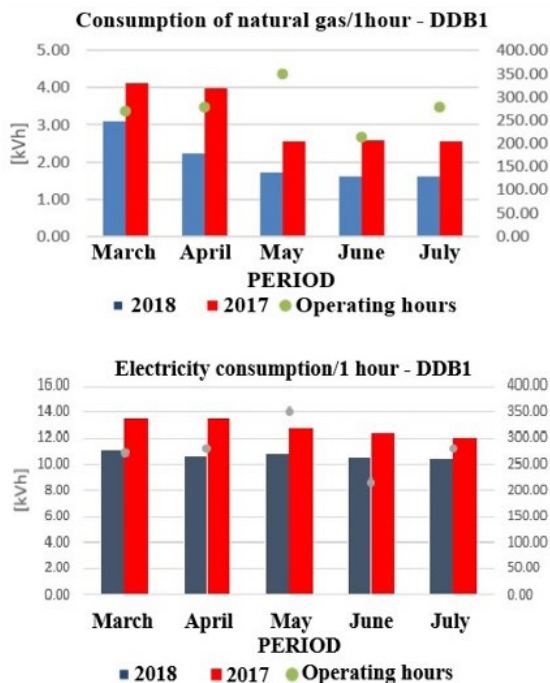


Figure 4

The scientific work impact of the research team members has been materialized through the publication of the research results in ISI / BDI indexed journals / conferences.

Applicability and transferability of the results

Energy efficiency measurements, by addressing one-off solutions, have led to the energy consumption reduction and, implicitly, to lower production costs at the economic agent. By implementing the project, collaboration between the partners involved has been developed. The economic agent can extend the solution applicability to all technological endowments. Energy efficiency solutions can be extended and can have a multiplier effect for the industrial sector that has similar technological equipment.

Financed through/by

Financed through PNCDI III - Program 2, Subprogram 2.1 – Transfer of knowledge to the economic agent, „Bridge Grant“ / by UEFISCDI

Research Centre

Research Centre for Building Services Engineering (RCBSE)

Research team

Project Manager
Assoc. Prof.dr.eng. Adriana TOKAR

Researchers
Assoc. Prof.Arina NEGOIȚESCU, PhD
Assoc. Prof. Dan NEGOIȚESCU, PhD
Assoc. Prof. Silvana BRATA, PhD
Assist. Prof. Marius ADAM, PhD

Contact information

Assoc. Prof. Adriana TOKAR, PhD
Faculty of Civil Engineering
Department of Civil Engineering and Equipments
Address: Traian Lalescu Street, No.2, 300223, Timisoara
Phone: (+40) 256 40X XXX
Mobile: 0763689639
E-mail: adriana.tokar@upt.ro
Web: <http://www.ct.upt.ro/cci/index.htm>