INCREASING COMPETITIVENESS OF COLTERM BY OPTIMIZING VARIABLE SPEED CONTROL TECHNOLOGY OF LARGE POWER CENTRIFUGAL PUMPS FOR HEATING

Goal of the project

The objective of this project is to integrate the new modern assemblies pump-electric motor-converter with variable speed control technology in the transport network of the thermal energy from Timișoara and the efficient operation of the entire transport network of the thermal energy.

Short description of the project

The objectives of this project are the integration of the two modern assemblies in the transport network of the thermal energy from the city of Timișoara together with the efficient operation of the entire heating network. To achieve these objectives an experimental investigation will be carried out for the designated pumps from the transport system of the thermal energy from the two CET in order to obtain characteristic curves of operation.

Main activities

There are three main activities.
The first one is to determine a protocol for experimental investigation of centrifugal pumps and to apply it on a couple of pumps from the Laboratory of Hydraulic Machines.
The second one is to investigate the pumps from CET Centru and establish the best operating pattern for these pumps.
The third one is to investigate the pumps from CET Sud and establish the best operating pattern for these pumps.

Project implemented by:

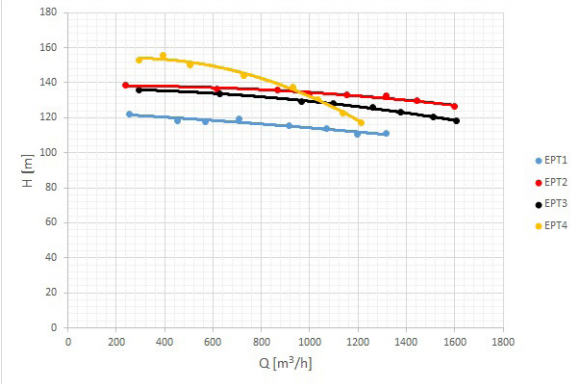
The project is implemented by a team from the Politehnica University Timișoara.

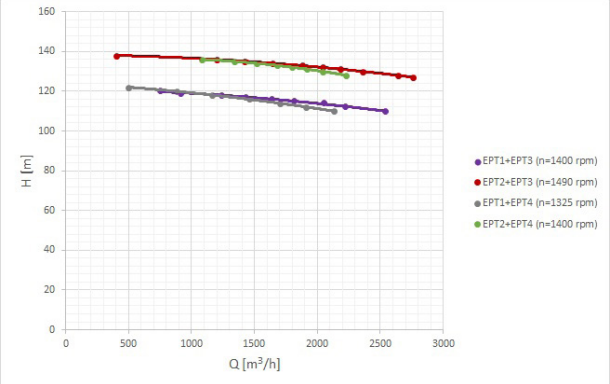
Implementation period

30/09/2016 - 30/09/2018

Results

The estimated results of this project are the operating patterns of the centrifugal pumps from CET Centru and CET Sud and the best efficient operating pattern of these pumps. Until now, the pumps from CET Centru were investigated and the results are presented in the next three figures. In the first figure, we have the operating curves of the four centrifugal pumps from CET Centre. In the second figure, we have the best operating pattern for these four pumps.





Applicability and transferability of the results:

The best operating patterns of the centrifugal pumps from CET Centru and CET Sud will help Colterm to operate these pump at best efficiency in order to supply the necessary domestic hot water and thermal energy for the citizens of Timisoara. By doing this, Colterm will optimize the cost with electric energy.

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Research Center

Research Centre for Complex Fluid Systems Engineering

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