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PRESS INFORMATION

PannErgy Group has established a complex energy and control engineering system

As an entity of PannErgy Group involved in the utilization of geothermal energy, PannErgy Geothermal Power Plants Ltd was awarded a non-repayable grant of HUF 442,479,143 in the "Support to market-oriented research & development activities" (PIAC_13) scheme announced in the framework of the New Széchenyi Plan, in December 2013. In the context of research and development activities, the purpose of the project was to create a prototype project and methodology that resulted in considerable intellectual added values, a new and marketable product, as well as technology.

Within the framework of the project ID no. PIAC_13-1-2013-0006, such a complex control engineering and process regulation system was implemented that had several pillars, including among others a geothermal pressure regulation system, an error forecasting system and a high-level process control system designed to integrate the operation of the geothermal system into district heat supply.

With the analysis of the operation of geothermal systems and the recognition of their limitations, faults can be avoided efficiently, the probability of their occurrence can be reduced, while increasing the use of geothermal heat energy with improved efficiency. The thermal water circulated in the geothermal system for heating purposes originates from large depths. Having reached the surface, the water that comes from the depth undergoes a change in its state of equilibrium. These processes must be tracked and regulated to control and influence the generation of gases and scaling, as well as other hydrochemical processes and their effects on normal operations so that operating problems can be avoided. When the processes are tracked, although certain impacts cannot be fully circumvented, their knowledge and continuous monitoring enable the prognosis of the anticipated maintenance activities.

With reliance on the forecasting of the expected weather circumstances, the high-level process control system functions as detailed above, and deploys simulation to model operations for the upcoming 36–72 hours, which provides the operators of all the thermal water sources with essential information. The system considers the capacities and limitations of the thermal water sources, and with respect to the optimum economic outcomes it optimizes and then controls the desirable operating conditions and levels of performance.

With the creation of this project, such a complex energy and control engineering system was established that could be utilized anywhere where the production portfolio was not homogeneous. This project gave rise to a system that could be used in the broad-scaling design and development of district heating services based on geothermal energy by any supplier in Europe and beyond, or for the optimization of obsolete district heating services that utilized conventional energy carriers and geothermal heat energy systems operated with suboptimal efficiencies. The methodology associated with the prototype project in Miskolc may be applicable to every second city in the Eastern and Central European Regions or the Balkans, where green energy still has not made a breakthrough due to similar allocation of thermal water sources, or where the use of green energy is intended to be increased. Furthermore, PEGE LTd's project answers the question as to how district heating systems can operate by maintaining optimum production capacities under the existing capacity levels, thereby relieving the cost pressure on users.

PEGE LTd's PIAC_13 development can contribute to the further expansion of PannErgy Group in the domestic market, and potentially lead to penetration in the international and global market with reliance on this prototype and technology. The volume of the project is reflected by the fact that the implementation phase had taken nearly two years, and came to an end in July 2015. The total cost of the project has been almost HUF 900 million, and financed by the Company partly from the awarded grant.