

OTHER INFORMATION

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Initial results and experiences of the Győr Geothermal System

On 24 November 2015, the two subsidiaries of PannErgy Plc., Arrabona Geothermal Ltd. and DD Energy Ltd. have officially launched the Győr Geothermal Project. After the successful closing of consumer test run, in the second week of December, the Győr Geothermal Project has started its commercial operation.

For the optimal operation, PannErgy Group is performing continuous instrumental physical and chemical analysis on the geothermal fluid coming in and passing through its geothermal system. In order to understand the geothermal reservoir, wells and the whole geothermal system, physical parameters – temperature, wellhead pressure, yield and liquid level - are continuously measured and recorded. Due to the “lively” nature of the geothermal systems, it is the peculiarity of the wells bounded to geothermal systems, that the quantity and quality of the geothermal fluid may alter from time to time. The recently running water analysis results have evinced that during the continuous production process, physical and chemical attributions of the geothermal fluid in the production wells have undergone significant alterations compared to previous forecasts.

Final status of the thermal wells – both physical, chemical and hydraulic point of view - is reached by the long-term operation, as during the test phase only 15—20,000 m³ can be mined for testing, while within 1 complete month of operation, more than 100,000 m³ liquid is produced and reinjected. In case of the Győr Geothermal Project, due to the changes in water quality and maximum load during the heating season, the intervention into the system was needed in the form of system shutdowns in order to perform the technical amendments.

The temperature of the wellheads of the production wells remain unchanged according to the test values, average 101 °C during the operation.

Currently, the production wells are operating with a 670-700 m³/h free water outflow, following the eventual settings, adjustments and purifications of the system, it is expected to rise up to 800 m³/h.

The swallowing capacity of the reinjection wells was adequate to reinject all produced water under the planned operating conditions. As originally envisaged, the secondary circulation system was operating under the maximum operation safety. The consumer endpoints were also operating in accordance with the plans.

“Following the successful transmission and test operation of the Győr Geothermal Project, in the last months, we have gained new and extensive experiences relating to geothermal investments and operations. Former competencies have broadened, as due to the peculiarity of the drilling system, the unscheduled chemical and physical reactions have lead our technical colleagues to additionally develop several technical concepts. The quality analysis of the the produced water is still necessary in the future in order to track and manage more closely the impact of the fluid on the functioning of the system. For now, heat sales of the first months of the continuous operation were below the planned amount, due to the interventions and system shutdowns in order to perform the technical amendments. By adapting the system to the new circumstances, we are expecting to reach the previously set heat sales target levels in no time. In the following weeks, the PannErgy Group compiles and initiates the development investment program, the implementation of which is necessary for the Győr Geothermal system to reach the thermal water flow capacity of 1,050-1,100 m³/h – stated Balázs Bokorovics, Chairman of the Board of Director at PannErgy Plc.

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PannErgy Plc.