

Physico-Chemical Characteristics and Possibilities of Utilization of Elbasan Thermal Waters

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Abstract : In Albania, only low enthalpy geothermal springs and wells are known, the temperatures of some of them are almost at the upper limits of low enthalpy, reaching over 60°C. These resources can be used to improve the country's energy balance, as well as for profitable economic purposes. The region of Elbasan has the greatest geothermal energy potential in Albania. This basin is one of the most popular and used in our country. This area is a surface with a number of sources, located in the form of a chain, in the sector between Llixha and Hidraj and constitutes a thermo-mineral basin with stable discharge and high temperature. The sources of Elbasan Springs, with the current average flow of thermo mineral water of 12-18 l/s and its temperature 55-65°C, have specific reserves of 39.6 GJ/m² and potential power to install 2760 kW. For the assessment of physico-chemical parameters and heavy metals, water samples were taken at 5 monitoring stations throughout the year 2022. The levels of basic parameters were analyzed using ISO, EU and APHA 21-th edition standard methods. This study presents the current state of the physico-chemical parameters of this thermal basin, the evaluation of these parameters for curative activities and for industrial processes, as well as the integrated utilization of geothermal energy. Possibilities for using thermomineral waters for heating homes in the area around them or even further, depending on the flow from the source or geothermal well. Sensitization of Albanian investors, medical research and the community for the high economic and curative effectiveness, for the integral use of geothermal energy in this area and the development of the tourist sector. An analysis of the negative environmental impact from the use of thermal water is also provided.

Keywords : geothermal energy, Llixha, physico-chemical parameters, thermal water

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