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Potential of Mineral Raw Materials for Battery Production in Hungary

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Hungarian and international students from the Special College of Natural Resources Research and Utilization of the University of Miskolc, TEKH, undertook the data collection and preliminary evaluation of critical and strategic raw materials, as well as their potential occurrences of mineral raw materials in Hungary. Battery metals belong to the group of critical and strategic raw materials in the EU. In this grouping, they are still little known in Hungary, and there is a particular lack of knowledge regarding the occurrence of these materials in Hungarian geological environments. At the same time, the country has identified developing a world-class battery manufacturing industry as a priority national strategic goal. This requires increasing knowledge, research, and development of domestic sources of raw materials. The data collection and the evaluations that can be based on it can effectively help the assessment of the country's mineral resource resources with a new approach.

The overview is based on the data in the database under construction. For battery raw materials, lithium, cobalt, nickel, manganese, and graphite have been studied and searched on a nationwide level. The data are summarized in fact sheets by occurrences and accessible through the the TEKH website

Lithium has anomalous enrichment in geothermal brines under the Great Hungarian Plain. Mangenese with Co and REEs is found in two extensive manganese carbonate ore deposits: Úrkút and Eplény. Cobalt was also recorded in skarns of the Recsk base metal ore complex, as well as in Paleogene terrestrial sediments related to karst bauxite deposits. Finally, unexplored flake graphite occurrences are related to Paleozoic metamorphic rocks in the Szendrő Mountains.