RANKING OF LIGNITE DEPOSITS IN POLAND ESTABLISHED ON THE BASIS OF THE ANALYTIC HIERARCHY PROCESS

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ABSTRACT

The design of the mineral deposit development and also protection of particularly valuable deposits against the development of their surfaces for investments other than mining require an estimation of the value and usefulness of the documented deposits for the economy as well as their classification in this context. Rankings (order) of mineral deposits were established on the basis of expert evaluation using the point method, which is characterized by a large dose of subjectivity. As such, it was necessary to establish an objective hierarchy to support such an important decision as the development (or non-development) of lignite deposits.

The Analytic Hierarchy Process, which enables the estimation of mineral deposits in a more complex manner than the point method, was proposed for establishing a ranking of lignite deposits. For this purpose, a multi–criteria decision model was build. In the estimation of deposits, all factors that can have an influence on the attractiveness of their development were taken into account. An estimation of lignite deposits which were selected on the basis of previous rankings was carried out by using a questionnaire prepared on the basis of the decision model, taking into account assessments from previous rankings. The estimation obtained in this manner underwent mathematical verification with the use of Expert Choice software, the effect of which is the hierarchy of the factors as well as the ranking of lignite deposits.

Keywords: lignite deposits, valorisation, ranking, analytic hierarchy process

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