

THEORETICAL MODEL INTEGRATING OF RENEWABLE ENERGY INTO THE MINING INDUSTRY

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Renewable energy (RE) for the mining industry has perspectives for implementation and development. The political and economic mechanism plays a significant role towards RE penetration into the mining industry. The purpose of this theoretical model is to give a tool to energy policy makers and decision-makers for taking a decision in favor or disfavor RE penetration. The theoretical model integrating of RE into the mining industry has been developed as a complex model divided by parts.

This model consists of three main parts. The first part contains the internal indicators (have a direct influence on a mine) at the micro level (local scale) including the categories such as incentives, barriers, and effects towards RE penetration. All these categories are divided under the certain sub-categories providing the detailed components of each category. The basic step of this part is to value each component. In this case, the incentives and effects are supposed to have a positive impact and barriers have a negative impact on the model.

The second part contains the government's support mechanisms category including five sub-categories. This category covers the internal indicators at the macro level (global scale). Hereby, these mechanisms have a direct influence on mining companies establishing a bottom-up approach towards RE implementation. While, mining companies can push the government establishing a bottom-up approach at the same time.

The third part contains the simulative initiatives as the external indicators (have an indirect influence on a mine) at the macro level. This category provides the policies towards developing of RE technologies, infrastructure, and marketing mechanisms. To a RE technological category belongs developing hybrid energy systems towards energy transition, developing RE at regional and local level, load management of electricity, and promotion of storage technologies. To an infrastructure category belongs grid reconstruction and development and grid connection requirements. Consequently, to a marketing mechanisms category belongs RE demand oriented power and direct marketing of electricity.

This theoretical model will be used for developing a guideline for decision-makers and policy makers. We will afford the experts to give their opinions towards evaluation of all these categories and sub-categories. Further, the contribution of the experts will provide us the data with specific value to approve the theoretical model. It will be known, which categories have strong and weak influence on the model. Thereby allowing us, based on this model, set up recommendations for energy policy makers and decision-makers.

Key words: Mining industry, Renewable energy, Theoretical model