PLENARY SESSION

1. PROSPECTS FOR DEVELOPMENT OF WORLD COAL MINING AND THERMAL POWER GENERATION

PIVNYAK Gennadiy, SHASHENKO Olexandr & PASHKEVYCH Maryna

National Mining University, Dnipro, Ukraine

The article deals with the problem of choosing a strategy for managing the coal industry and coal enterprises in the context of various economies of the world. The factors of the economic and ecological justification for either extension or termination of the coal enterprises' functioning are analyzed. A comparison of key indicators for energy generation based on coal combustion and the use of alternative energy sources is given. The concept of synchro-miningfor extending the life cycle of a coal mine in a market economy is proposed.

2. ENERGY EFFICIENCY AND ECONOMIC ASPECTS OF MINING WASTES UTILIZATION WITHIN THE CLOSED CYCLE OF UNDERGROUND GAS GENERATOR

PIVNYAK Gennadiy [1], DYCHKOVSKYI Roman[1],
FALSHTYNSKYI Volodymyr[1] & CABANA Edgar Cáceres[2]

[1]National Mining University, Dnipro, Ukraine
[2]National University of Saint Augustine, Peru

Energy efficiency of coal gasification with possible utilization of mining wastes within ecologically closed gas generator cycle has been considered. Technical and technological performance of such gas generator and mechanism of material and heat balance on the basis of the available analytical methods and practices as well as the developed author software have been proposed. Heat carrier formed in the process of coal gasification has been used for the utilization. Temperature of the utilization process within the industrially expedient limits being supported with the help of either activation or attenuation of the gasification process. After specific treatment, organogenic waste and domestic wastes are utilized by means of thermal decomposition within a gas generator. Economic evaluation of the proposed means confirms the expediency of their implementation in mines with industrial and balanced coal reserves as well as within the areas where this energetic source has already been already mined out. Results of this investigation were partially presented on international scientific and practical conference "Forum of Miners - 2017". They contain the researches, which were conducted within the project GP – 489, financed by Ministry of Education and Science of Ukraine.