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**Models of revival costs applied to open pit mining machines using LCC concept.**

Bucket wheel excavators, conveyors and spreaders are the main type of machines operated in Polish open pit mines. Brown coal is exploited in Poland in four regions and electric power made from that source of energy constitutes about 34% of total produced electric energy. That branch of industry is considered as part of critical infrastructure. It is usually assumed 30 – 40 years durability in the design process of this type of machines. Each excavator or spreader is a steel structure of the weight of couple thousand of tones, consisting also of various mechanisms and units of lower durability. Investment process takes 2 – 5 years and is very costly. Problem in open pit mine comes into being at the point of divergence of amount of remaining coal deposits and remaining lifetime of operated equipment and its availability at the end of life of every single object. There are some options regarding maintaining required extraction of coal: build up a new machine, buy second hand machine or renew old one. Paper proposes models of total costs regarding presented approaches based on LCC applied on energetic sector. First model is classical one covering costs of research & design, building up, instalment and operation including maintenance and withdrawal from use. Second one is based on the price of ready machine available in the offers market and costs of installation, what requires dismantling, transportation and reassembly on site. Third model takes into account cost of modernisation depending of degree of wear of main machine units. Each above, and all other LCC models, needs one of the most important and extremely difficult to determine information what is durability of the object under analysis. In the paper it is proposed simulation of costs with variability of the most influencing factor on total life costs. Models of total costs kipping required coal extraction may be useful in decision early stage of decision process regarding investment movement in the energetic sector.

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