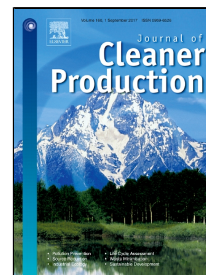


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Analysis of the sensitivity of the ecological effects for the investment based on the thermal insulation of the building: A Polish case study

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Abstract

The improvement of the energy efficiency is one of the strategic goals in Poland as well as in the other European countries. The main aim of this article is to present a method of the assessment of the ecological effects for the investment based on the thermal insulation of the external building walls with the inclusion of the sensitiveness of the chosen variables. The Life Cycle Assessment methodology was used for the assessment of the environmental impact. The increased damage on the environment connected to the production of thermal insulation materials and the decrease of the influence on the environment connected with the decrease of the use of energy in the use phase of the building were taken into consideration. The research also encompasses the variability which is a result of the type of the external building wall, the applied heating source, the type of the thermal insulation material and also the climatic zone in which the building is located. Each examined variant brought positive ecological effects such as the reduction of the environmental load as a result of the thermal insulation of the building. In addition, the sensitivity to different factors that influence the examined ecological effects were also researched. The changes of the environmental load that took place during the production of the heat energy in the building and the changes of the

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