The role of the renewable resources in local development: The case of geothermal water energy exploitation in Oradea, Romania

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Abstract

Economic development in the new century faces the challenge of declining geological resources. While there continues to be a direct link between the per capita energy use and the living standard, the concern now is for enhanced consumer safety and environmental protection. In this process, alternative renewable energy sources such as geothermal energy, offer both an affordable and sustainable solution. This is because renewable energy technologies generate a small amount of pollutant emissions and waste, decreasing significantly the chemical and physical (thermal, radioactive) pollution. This paper analyses the exploitation of geothermal water in Oradea, Bihor County, Romania as a sustainable solution for a local development. Results of the analysis indicate that the advantages of using this type of energy include a clean and renewable resource, reduction of greenhouse gas emissions, saving of fossil fuels, prices below those of conventional sources, minimal risk of external market fluctuations, widespread usability, psychological comfort of the user, and the possibility of improved health.

Keywords: environmental protection, fossil fuels; geothermal water, greenhouse gas emissions, renewable energy sources, thermal pollution