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**Economic and Environmental comparison of residential Geothermal Energy Systems from the greater Baltic region to the southern EU**

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**Abstract**

Ground Source Heat Pumps are used to reach EU's goal of nearly Zero Energy Buildings. Compared to Air Source Heat Pumps, they have higher performance but also higher cost. Here it is aimed to demonstrate the difference in environmental and economic aspects, between greater Baltic region and southern EU. Cases from across the EU were used with the same technical characteristics for comparison. Life Cycle Analysis and Simple Payback Period are used for the environmental and economic evaluation.