Deliverable D5.8

Evaluation of performance in virtual demonstration facilities in an European scenario

WP5

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Dissemination Level

PU	Public	
CO	Confidential, only for members of the consortium (including the Commission Services)	**X**
CI	Classified, as referred to in Commission Decision 2001/844/EC	

Publishable summary

The aim of the GEO4CIVHIC project is to foster the retrofitting of civil and historical buildings by facilitating installation, reducing costs and increasing efficiency of the different components through shallow geothermal systems. This will be achieved, on one hand by improving drilling machines and methodology, optimizing GSHE design and materials, and using more compact and hybrid HPs for high and low temperature terminals. On the other hand, a set of software tools will be developed to provide a holistic engineering solution to optimise installation and operation of GSHPs. One of these tools is the Decision Support System (DSS) to provide sets of engineering solutions based on heating and cooling application relevant for the different ground and climate conditions across Europe.

The D5.8 “Evaluation of performance in virtual demonstration facilities in an European scenario” is a confidential document delivered in the context of WP5, specifically of Task 5.4 - “Modelling of virtual case studies” that aims at demonstrating the performances of the developed GEO4CIVHIC solutions through a virtual application in renovated buildings in different urban contexts, climatic zones and ground conditions.

This document presents the results obtained from the simulations that will demonstrate the larger scenario of applicability and efficiency of the innovative solutions developed in GEO4CIVHIC. The installation of the GSHP system (i.e. GSHE field + the HP) have been modelled for each virtual case, proposing different solutions, including estimating costs for the installation of the GSHPs. All these virtual cases will facilitate the comparison in terms of economic feasibility by comparing real data about the economic costs and performance of the installation and infer the costs that may be derived by a new installation with the developed new type of heat exchangers, drilling machines and HP solutions.