

Deliverable D4.6

Control strategies for integration of geothermal energy with other RES

WP4

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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 ground source heat exchanger (GSHE) design and materials, and using more compact and hybrid heat pumps 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 ground source heat pumps (GSHP). This development includes the study of how to operate and optimise the installation of GSHP in combination with other renewable energy sources (RES).

The D4.6 “Control strategies for integration of geothermal energy with other RES” is a confidential document delivered in the context of WP4, Task 4.5 “Control strategies for integration of geothermal energy with other RES” with regard to the analysis of the synergy of GSHP with other renewable energy sources.

This document reviews the state of the art of GSHP control strategies and explores the coupling of GSHP with other RES (i.e., solar thermal collectors with storage tanks, wind energy, photovoltaic (PV) systems, hybrid PV-thermal solutions and air to water heat pumps) and defines optimal solutions for the different building types and climates.