Deliverable D4.1

Software development

WP4

Grant Agreement number	657982
Project acronym	Cheap-GSHPs
Project full title	**Ch**eap and **E**fficient **Ap**plication of reliable **G**round **S**ource **H**eat Exchangers and **P**ump**s**
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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

One of the main barriers for the promotion of Ground Source Heat Pump technology (GSHP) is related to the uncertainty in the sizing and design of the Ground Source Heat Exchangers (GSHE) field. For this purpose a freeware tool has been developed in the project Cheap-GSHPs, in order to facilitate the design of the GSHEs and hence to allow a penetration of low temperature geothermal systems.

A freeware design tool has been developed. This tool has been based on the same common platform of the Decision Support System developed in WP5, thus guaranteeing interoperability between the two pieces of software. There is a difference among the tools developed within the present project: the DSS is a tool stored in the cloud (hence the user works on a server), while the design tool is a software which can be downloaded on a PC.

For the interoperability, the freeware software platform has been carried out as well as the friendly user interface. The engine has been built up including a database on heat pumps, ground characteristics, climatic conditions and building energy profiles which can be used when the building energy needs/profiles are not known. Two calculation methods have been provided: a simplified method (based on the ASHRAE model) and a detailed method (based on CaRM model).