



Project Fact Sheet

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INTEGRATION OF GEOTHERMAL ENERGY INTO INDUSTRIAL APPLICATIONS (IGEIA)



Programme area: *Altener, Geothermal Energy, RES heat, Small scale RES applications – VKA7.4 & VKA6.2*

Status: ended

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Website: <http://www.saunier-associes.com/igeia>

Objective: *Increase the number of geothermal heating & cooling installations in industrial sites*

Benefits: *Enable the industrial sector to evaluate the use of geothermal energy and show the economical advantages*

Keywords: *Geothermal energy, Industry, Economical benefits*

Duration: 12/2006 – 05/2009

Budget: 703,692 € (EU contribution: 50,00 %)

Contract number: EIE/06/001/SI2.447570

Short description

The objective is to help the development of geothermal heating and cooling into industrial sites. Indeed the industrial sector offers a very attractive target for geothermal use...but the number of applications in Europe is small. The main barriers on this market are the lack of examples, so we want to show the industry that a geothermal system is possible and less expensive than conventional energy technologies!

The five partners in Portugal, France, Germany, Sweden and Estonia cover the three main climatic conditions in Europe: Mediterranean, Temperate and Nordic.

The project is firstly to study the installation of geothermal system in Germany, France and Sweden on 3 industrial sites: supermarkets, pipes manufactory, shopping centre. Secondly we try to customize a “geothermal product” with common pay back periods and finally we replicate these examples in Portugal and Estonia to validate our data. A brochure and two events will present our results.

Expected and/or achieved results

Main achieved results of the IGEIA project are as follow:

- Local conditions, such as climate, geology and regulations..., were presented for France, Germany, Sweden, Portugal and Estonia. The design of the geothermal solution depends to a great length on these factors. An important task was to establish reliable methodology to customize the integration of a geothermal application into the industry per climactic regions.*

- *The market report pointed out the most interesting sectors to install geothermal energy. Investigations were carried out to identify most interesting industrial sites where geothermal applications can be integrated. BPR Europe, UbeG and Sweco convinced the commercial mall 'Au Carré d'or', the supermarket 'Aldi' and the pumps manufacturer 'ITT Flygt' to install a geothermal system.*
- *The market for geothermal applications is well established in some European countries: Sweden, Germany, and France. Nevertheless, in other countries such as Estonia and Portugal, although geothermal energy has a great potential, no self-sustaining market is yet developed.*

Emerging markets in the EU may benefit from lessons learnt on more developed markets applications. The feasibility studies realised for France, Sweden and Germany were replicated for Portugal and Estonia. A comparison was established to underline similarities and differences.

- *An inventory of EU and national financial incentives for Geothermal heating and cooling was elaborated. Each partner presented a description of the EU, national and regional funds granted in his country. A guide addressed to industrials was developed describing different incentives that can be obtained by industrials and the way to apply for. The guide was edited as a brochure disseminated in the Hanover Messe.*
- *The IGEIA website was designed and improved regularly (www.saunier-associes.com/igeia); an interactive interface was created with numerous sections. The newest versions of deliverables and data were continuously uploaded.*
- *Press releases: articles intended for professional press were written, and submitted in Sweden, France, Germany, Estonia, and Portugal. These articles helped to promote the IGEIA project and to inform industrial of this possibility.*

Lessons learnt

The consortium agreed on three main preliminary lessons learnt:

- 1) *A first important lesson learnt involves the financial incentives that can be granted to help an industrial in integrating geothermal energy into its applications. Being a solution with relatively high investment costs, it was crucial to inform key actors about the possibility to have their project financed and the way to apply for subsidies.*
- 2) *Project meetings offer a great opportunity to discuss project management but also to share information about different techniques. A presentation of several innovative tools was held: simulation software, applications (Underground Thermal Energy Storage), Thermal Response Test... We learnt about other technologies developed across Europe. Hence, this project offers a good opportunity to widespread the knowledge about geothermal applications also within design offices.*
- 3) *The results for the Mediterranean climatic conditions showed that geothermal energy use is not profitable unless cooling and heating needs are present simultaneously. Consequently, the geothermal system would be designed to provide the site minimum needs.*