

Ground-Reach: Project website & Best Practice Database

Heating and Cooling with Geothermal Heat Pumps
Athens, 24 January 2008

Agenda



A few words ...

- About FIZ Karlsruhe
- Role of FIZ in Ground-Reach

Project website

GSHP Best Practice Database

GSHP Benchmarking



Role of FIZ in Ground-Reach



- ☐ Development and maintenance of project website
- ☐ Development and maintenance of Best Practice Database
- ☐ Collecting and analyzing information on GSHP benchmarks
- ☐ Dissemination of information on project progress and results

Project website - Screenshot






Reaching the Kyoto Targets by Ground Source Heat Pumps

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News

- [About GROUND-REACH](#)
- [Partners](#)
- [Best Practice Portal](#)
- [GROUND-REACH Events](#)
- [Deliverables](#)
- [Publications](#)
- [Links](#)
- [European GSHP Committee](#)
- [Survey](#)
- [Partner Section](#)



Welcome to GROUND-REACH project

The GROUND-REACH project targets at evaluating the importance of ground source heat pumps in reaching the Kyoto targets and launching a short term European information and promotion campaign for rapid market penetration of this sustainable technology for heating and cooling of buildings.

News

Simultaneous performance factors for combined multifunctional ground-source heat pumps

Jan. 16, 2008 - A combined, multifunctional ground-source heat pump for simultaneous space heating (with direct condensing radiant floor or air coil) and cooling (with air coil), and domestic hot water heating (with desuperheater) has been developed at Hydro-Québec Research Institute's LTE Laboratory.
» [read more](#)

Next promotion meeting to take place in Athens

Jan. 15, 2008 - The next GSHP promotion meeting is scheduled to take place in Athens, 24 January 2008.
» [read more](#)

ASHRAE headquarters under renovation

Nov. 20, 2007 - The renovation of ASHRAE headquarters is expected to be completed in June 2008 at an estimated cost of

Closely related websites

EGEC

The voice of geothermal energy in Europe

EHPA

Representing interests of the European heat pump industry

EHPN

European information platform for heat pump technology

EU-CERT Project

A European training and quality campaign for heat pump installers (*completed*)

GEOCOOL Project



Ground Source Heat Pump System for Cooling and Heating in the South European Region

GROUNDHIT Project

Ground coupled heat pumps of high technology

Minewater Project

supported by



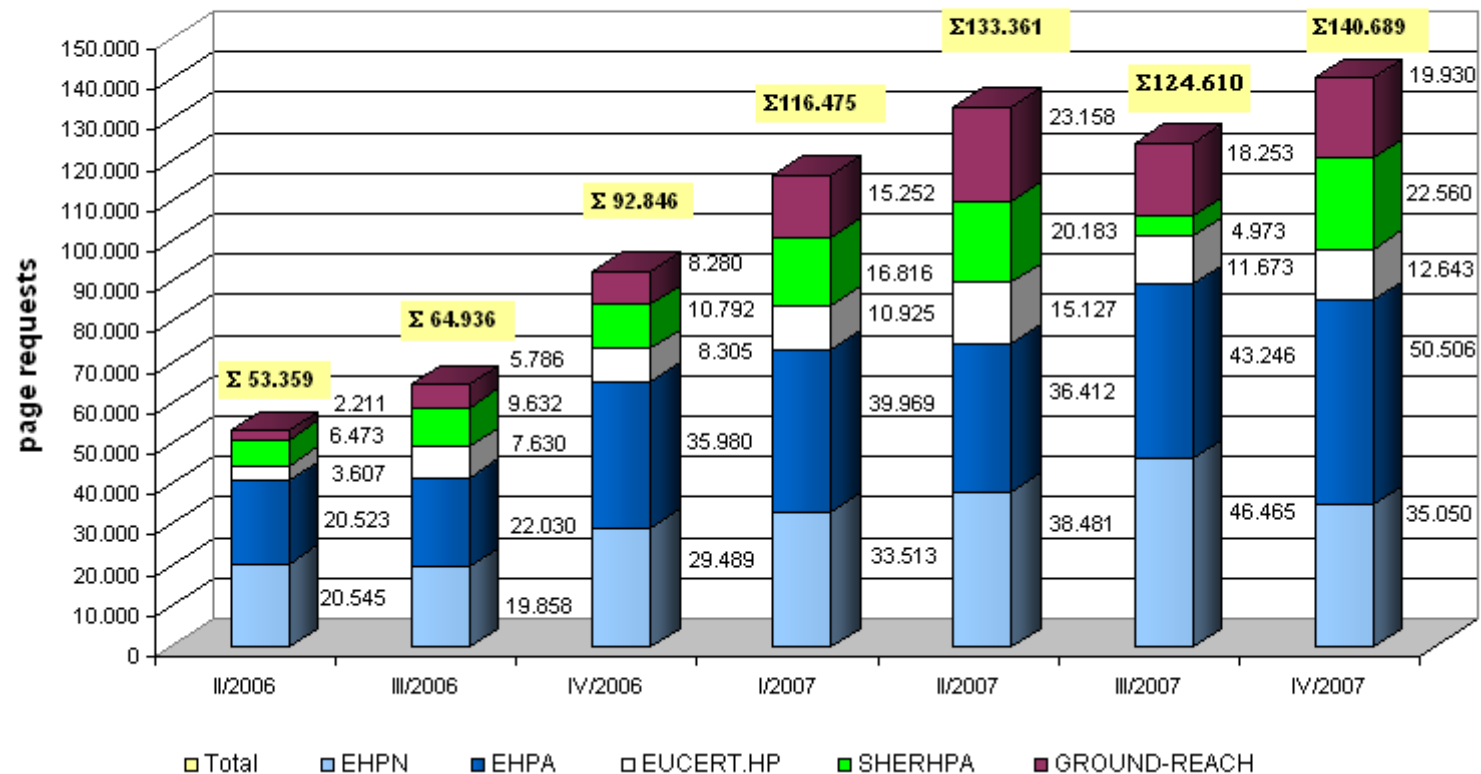
Europe

Project website - Webstatistics



EHPN / EHPA Website Statistics II/2006 - IV/2007

(including EU Projects EUCERT.HP, SHERHPA and GROUND-REACH)

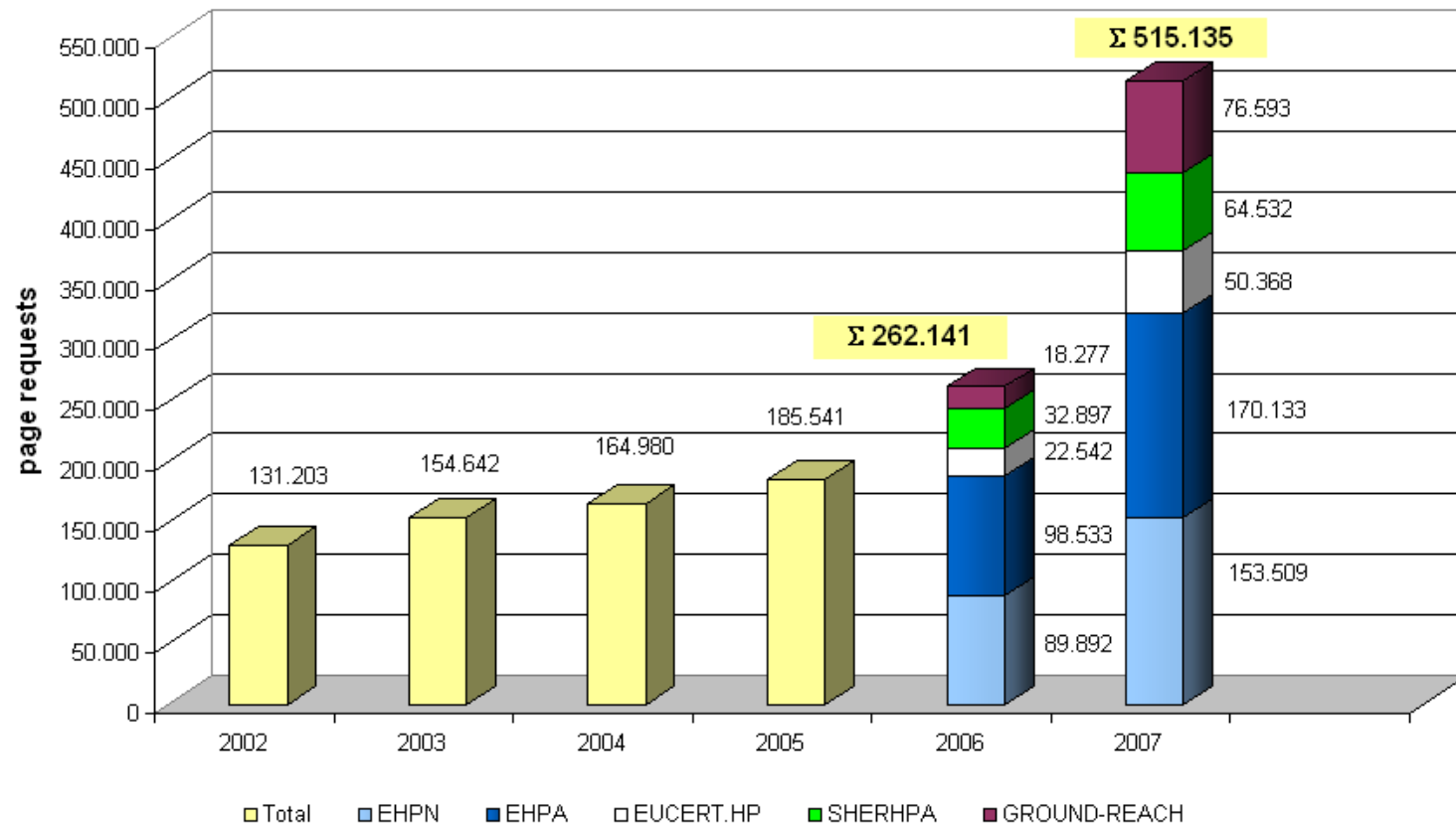


Project website - Webstatistics



EHPN / EHPA Website Statistics 2002 - 2007

(including EU Projects EU-CERT.HP, SHERHPA and GROUND-REACH)



Project website – Page ranking



Project website: Page requests (1 April 06 – 16 Jan 08)

News	13.212
Best Practice Portal	3.494
<i>Partners</i>	2.868
Publications	2.865
<i>About Ground-Reach</i>	2.538
Links	1.679
Ground-Reach events	1.447



Best Practice Portal – Why, Aims



- ❑ to demonstrate the essential benefits of GSHP compared to competing conventional systems and thereby encouraging the market penetration in Europe
- ❑ to provide reliable information on the high energy efficiency and low CO₂ emissions achieved with GSHP in practice
- ❑ to show the broad range of possible application areas for this sustainable heating/cooling technology all over Europe
- ❑ to form the basis for setting up recommendations for a successful design, installation and operation of GSHP systems

Best Practice Database – Screenshot





Ground Source Heat Pumps - Best Practice Database

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Best Practice Database


- [Project search](#)
- [Project input](#)
- [GROUND-REACH home](#)

New Projects

Notice: To view a listing of all projects included, just press the "search" button of the full-text search!

POLAND

"Lesnik" Health-Resort Sanatorium in Sopot




The project consists in a comprehensive modernization of the heating system of the "Lesnik" Health -...

[» read more](#)

FRANCE

Multifamily residence in Besançon




This multifamily residence has 28 dwellings where 67 persons are living. It is heated by two brine-to-water...

[» read more](#)

FRANCE

One-family house in Marloz




This one-family house is heated by a ground source heat pump, using two borehole heat exchangers. The...

[» read more](#)

ROMANIA

Porsche showroom and service building in Bucharest



The PORSCHE centre Bucharest West 2 comprising car showrooms and service facilities with a floor area...

[» read more](#)

SWITZERLAND

GREECE

Best Practice Database – Facts & Figures



Status: End of 2007

- ❑ 32 case studies from 12 countries
 - ❑ Central and Eastern Europe: 22
 - ❑ Southern Europe: 10
 - ❑ Scandinavia: 0
- ❑ Building type: 10 one-family houses, 7 office buildings, 15 others
- ❑ Heat source system: 17 vertical borehole hx, 13 ground water/aquifer
2 heat pipe, 2 horizontal heat collector
- ❑ Measurements:
 - ❑ SPF: 21 (2,62 ... 5,5)
 - ❑ PER: 5 (1,18 ... 2,31)
- ❑ Expected number of case studies at the end of project: 50

Benchmarking – Why Benchmarks



Benchmarks are needed

- ☐ as determining factors for
 - ☐ Rules and regulations (measure of quality)
 - ☐ Incentive programmes (criterion for granting subsidies)
 - ☐ Labelling schemes (rating scale)
 - ☐ Standards and technical guidelines (measure of quality)
- ☐ for comparing competing heating and cooling systems in terms of
 - ☐ Energy efficiency
 - ☐ Economic efficiency
 - ☐ Environmental impact

Benchmarking – What Benchmarks



- ☐ Energy efficiency
 - ☐ COP / EER (heat pump device)
 - ☐ SPF / SEER (heat pump system)
 - ☐ PER (different heating and cooling systems)
- ☐ Economic efficiency
 - ☐ Payback period
 - ☐ CO₂ emission avoiding cost
- ☐ Environmental impact
 - ☐ TEWI (Total Equivalent Warming Impact)
 - ☐ CO₂ emissions per year

Examples for heat pump benchmarks on European level:

- EN 15450 (Directive on the energy performance of buildings)
SPF: Minimum and target values for new and existing buildings
- EHPA Guidelines
SPF: Default values for new and existing buildings
- EU Eco Label
COP + PER: Minimum values for new and existing buildings
- DACH Quality Label
COP: Minimum values for the heat pump device
- EU Energy Label
Under preparation

Benchmarking – First results



Preliminary results from the Best Practice database:

- ❑ Only 21 of 32 case studies provide measured SPF values
- ❑ Range of SPF values: 2,62 ... 5,5
- ❑ Clear information on system boundaries are mostly not provided
- ❑ Solid basis for a detailed analysis and elaborated recommendations not yet available
- ❑ **Strong need for more case studies of good quality !!!**

Intelligent Energy



Europe

GRO|ND
REACH

**Thank you for your
attention !**

