

**Project No. TREN/05/FP6/S07.59572/019892**

**Project Acronym: ASTECH**

**Project title: Advanced sustainable energy technologies for cooling and heating applications**

**Instrument: Specific Support Action**

**Thematic Priority: Priority 6.1 “Sustainable Energy Systems”**

**DELIVERABLE 5.1b**  
**“Workshop on Ground Source Heat Pump in Spain**  
**November 2008”**

**Date of preparation: 30 may 2009**

**Partner in charge:**

**Start date of project: 01.09.2006**

**Duration: 30 months**

**Project coordinator name:**

Bernard Thonon

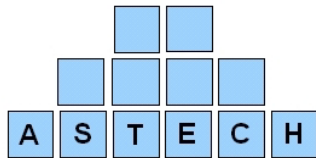
**Project coordinator organisation name:**

ASSOCIATION GRETh (GRETh)

**Revision:**



**SIXTH FRAMEWORK PROGRAMME**



*Advanced Sustainable Energy  
Technologies for Cooling and  
Heating applications*



SIXTH FRAMEWORK  
PROGRAMME

**COUNTRY: SPAIN**

**Organized by: EVE**

**WP 6: Dissemination-Evaluation**

**Task: Conference and training**

**Deliverable n°: D5.1b**

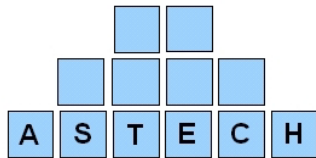
**Partner: EVE**

**Event name: MEDIUM-LARGE SCALE SHALLOW GEOTHERMAL  
INSTALLATIONS FOR HEATING AND COOLING**

**Venue: Bilbao**

**Date and time: 5<sup>th</sup> November 2008**

**Organiser: EVE**



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## 1. PILOTE TRAINING ACTIONS:

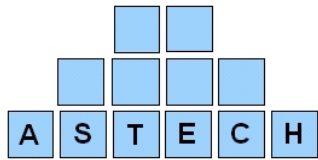
Location	Bilbao	Deliverable No.	6.4
Date	5 <sup>th</sup> November	Time	8:30-17:00
Organised by:	EVE		
Address	Bilbao Exhibition Centre		
City	Bilbao		
No. attendees	260		

## 2. OVERVIEW

*The conference about "Geothermal exchange in heating and cooling medium power systems" took place in Bilbao Exhibition Centre on 5<sup>th</sup> November 2008. The event was organised by Ente Vasco de la Energía.*

*This presentation forms part of the strategy for disseminating the European project named ASTECH, whose objective is to promote the usage of renewable energy technologies for heating and cooling purposes, including geothermal energy.*

*The conference intended to offer a precise overview of current state of the art of the technology through several case studies on applications in different countries, focus in medium power systems in residential, commercial and administration buildings, to provide a view of alternatives, profits, performance and limitations of these systems.*



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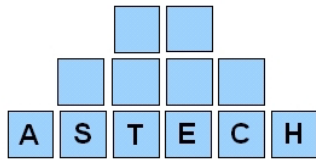
**Organized by: EVE**

### **3. METHODOLOGY / MATERIALS USED**

The session was opened with a brief introduction by the General Manager of EVE, J.I. Hormaeche. Then, Dr. Burkhard Sanner from European Geothermal Energy Council, showed an overview of heat pump market in Europe. He explained the different methods and types of circuits giving existing examples in Europe and besides, he spoke about the current state of European policy, certifications and market in reference to this topic. To continue, the state of three European markets was explained. Firstly, “geothermal market in Sweden” by J.E. Nowacki, from NOWAB (SVEP); secondly “geothermal market evolution in Austria” by A.Zottl, from Arsenal Research and finally, Iñigo Arrizabalaga, from EVE, explained Basque market evolution. They informed about installations and evolution until this moment in these areas, established policies and expected evolution. Then, examples of existing installations in these European countries were explained by these same speakers. J.E. Nowacki took part again talking on “Ground coupled heat pumps in Sweden over 100kW”, Dr Burkhard Sanner spoke about an open loop case study in Bonn-Cologne area, A.Zottl explained the case study Strabag House Viena and Iñigo Arrizabalaga showed a close loop case in Durango (Euskadi). Going more in depth in technical issues, S. Oehlert from Zent Frenger talked about concrete core tempering and combination with geothermal supply systems and he proved their economical benefits. Later, M<sup>a</sup> M. Fernández from Basque government showed the project that Department of Housing and Social Matters has carried out in Intxaurreondo (Gipuzkoa), building an energy generator building. A. Zottl took part finally speaking about CO<sub>2</sub> use in geothermal heat exchangers. To conclude with the conference D.J. Acuna from Energy KTH talked about the performance in geothermal exchange systems.

For more information go to annex A. The presentations can be found in the following link:

[http://www.eve.es/jornadas/jornada\\_intercambioGeotermico.asp](http://www.eve.es/jornadas/jornada_intercambioGeotermico.asp)



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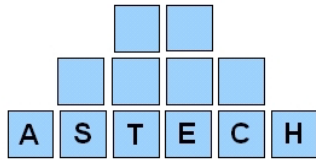
#### **4. EVALUATION OF THE CONFERENCE**

Over 250 people attended the conference on “geothermal exchange in heating and cooling medium power systems” which was held in the framework of GEO<sub>2</sub> fair in Bilbao Exhibition Centres. This large number of people means that geothermal technologies generate great interest and that it could become a technology of even greater importance in near future.

Speakers were very good evaluated because of their deep knowledge on the topics and good presentations. Furthermore, a wide view of the technology across Europe was provided by talking on the Swedish, Austrian and Basque Country’s situation. All those explanations came with examples of existing and successfully working installations.

Attendance was very participative and interested by the topics. In the final round table several questions were made in order to know sharing quotes and hybrid installations (biomass+geothermal) in other countries as Austria.

**“CONFERENCE ABOUT MEDIUM-LARGE SCALE SHALLOW GEOTHERMAL  
INSTALLATIONS FOR HEATING AND COOLING”**



**ASTECH PROJECT  
BEC, 5th NOVEMBER 2008  
PROGRAMME**

09:00	09:10	Welcome and Opening	D. J.I. Hormaeche	Dto. General EVE
09:10	09:30	"Overview of ground-coupled heat pump market in Europe"	DR. B. Sanner	EGEC
09:30	09:50	"Technologies, economy and examples of geothermal market in Sweden"	MR. J.E. Nowacki	NOWAB (SVEP)
09:50	10:10	"Geothermal market evolution in Austria"	MR. A. Zottl	ARSENAL RESEARCH
10:10	10:30	"Geothermal market evolution in Euskadi"	D. I. Arrizabalaga	EVE
10:30	10:40	Questions		
10:40	11:10	Coffe Break		
11:10	11:40	"Ground coupled heat pumps in Sweeden over 100kW"	MR. J.E. Nowacki	NOWAB (SVEP)
11:40	12:10	"Open loop case study in Bonn-Cologne area"	DR. B. Sanner	UBeG GbR
12:10	12:40	"Case study Strabag House Viena (2,1 MW)"	MR. A. Zottl	ARSENAL RESEARCH
12:40	13:10	"Close loop case CIM Azterlan Durango (205 kW)"	D. I. Arrizabalaga	EVE
13:10	13:20	Questions		
13:20	14:50	Lunch Break		
14:50	15:15	"Trends in concrete tempering. Combination with geothermal supply"	MR. S. Oehlert	GEOTER-ZENT FRENGER
15:15	15:40	A energy net producer building, 125 dwelings for young people in Intxaurreondo	Dña.Mª M. Fernández	DPTO. VIVIENDA Y ASUNTOS SOCIALES (E.L.G.V)

## ANNEX A

15:40	16:05	"CO <sub>2</sub> use in geothermal heat exchangers"	MR. A. Zottl	ARSENAL
16:05	16:30	Performance improving of borehole exchangers	D. J. Acuna	ENERGY KTH
16:30	17:00	Round Table Discussion		
17:00	17:00	Closing		

ANNEX B



Dr. Sanner (EGEC Chairman) first presentation. Mr. Hormaeche (EVE General Manager) Conference Chairman



Audience of the workshop, 262 people from intustry, research centers and decision makers

ANNEX B



Hr. Zottl presenting large scale GSHP installations in Austria



Mr. Arrizabalaga (EVE) presenting ASTECH project