GEOTHERMAL COMMUNITIES

500+
Retrofitted homes

~19 000
m^2
Total retrofitted area

16
Partners

7
Countries

95 540
m^3/a Waste gas used

7.76MW
Total new heating capacity

€11M
Total budget

93%
Reduction in CO_2 emissions

GEOCOM FINAL NEWSLETTER

Geothermal Communities is a project of the CONCERTO initiative co-funded by the European Commission under FP7.

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FOREWORD

The Geothermal Communities (GEOCOM) project was launched in 2010 with a vision to increase the visibility of direct heat applications of geothermal energy throughout Europe. Six year later, at the end of December 2015, this amazing project, one of the last, still-standing projects of the CONCERTO initiative will end. For this reason, it was decided that this edition of the newsletter will be slightly different from the previous ones for it will recap the events of the past year rather than bringing to your attention upcoming events.

This last year of GEOCOM brought a lot of new, interesting and inspiring results to the project life. It managed to gain international visibility and its achievements were further reinforced when a two-day conference was organised to gather those in Europe who are willing to carry on the message GEOCOM sends. The final activities have managed to create some long-lasting results such as the e-learning platform or the finished Handbook on geothermal practices.

I had the privilege to act as coordinator for GEOCOM for over 4 years and it gives us great pleasure that the initial ideas and goals were delivered as they were foreseen when the first concept was conceived. We hope that you managed to acquire some useful knowledge or practice from the activities of GEOCOM that will give you the momentum to initiate similar projects in the future.

István Pári
Project coordinator

WORLD GEOTHERMAL CONGRESS 2015

The World Geothermal Congress is the largest event for geothermal professionals, organised every five years. This year it was hosted in Melbourne, Australia, jointly organised by Australia and New Zealand. Five days of technical sessions included papers on scientific, technical, business and societal topics (more than 1,000 papers in 2015 only!) and revealed the latest tendencies, achievements and future trends of all aspects of geothermal energy, including power generation, geology, resource assessment, direct use, environmental and societal aspects, reservoir engineering and enhanced geothermal systems among several others.

The Congress also provided many networking opportunities through special interest group meetings, social and cultural events, field trips and short courses in Australia and New Zealand.

On behalf of the GEOCOM consortium, Geonardo as coordinator participated in the World Geothermal Congress. The company was represented by Istvan Pari and Gabor Kitley.

Mr. Pari presented the project's results within the framework of Session 13L: District heating and Agriculture 2 by Mr. Pari. The submitted and reviewed proceedings article about GEOCOM can be downloaded here.

The presentation sparked a lively discussion, generating interest towards the closing activities of the project and particularly towards the Mayors' Geothermal Club conference.

In addition, two poster presentations by the scientific partners of the project consortium were on display. PAS MEERI's poster covered the key findings of the socio-economic research conducted in the project, while the University of Szeged demonstrated its results via a case study related to the Chemical and Biological Processes in Geothermal Systems.

These multiple aspects provided great coverage for GEOCOM in an international environment and its presence at the Congress yielded excellent opportunities for the coordinator to liaise and network with the relevant scientific community and technology providers.

Gala dinner of the World Geothermal Congress at the Crown in Melbourne

INAUGURAL CONFERENCE OF THE MAYORS' GEOTHERMAL CLUB

The launching conference of the Mayors' Geothermal Club was held on October 8, 2015 at the Budapest Congress Centre in Hungary. As this was the last major event of the GEOCOM project, the organising committee was aiming to draft an agenda able to provide the participants with a thorough insight into the current state of play of geothermal energy in Europe, which the audience could take away and use when initiating new projects.

In line with the original concept of the Mayors' Geothermal Club, namely to provide European municipalities with geothermal potential with an appropriate framework where all issues related to the utilisation of their geothermal potential could be openly discussed, the conference had three distinct sessions covering policy aspects, the financial side of such investments and finally some best practices.

The invited guests represented the most influential, prestigious and experienced organisations in Europe in the field of geothermal energy. Dr Andras Siegler, Director of DG Research and Innovation, and Mr Pietro Menna, policy advisor at DG Energy of the European Commission helped to put the MGC initiative into a pan-European context, highlighting the potential opportunities to trigger new projects similar to GEOCOM. The keynote speeches were concluded by Mr Bjarni Bjarnason's very inspiring presentation on the potential of geothermal energy unitisation, primarily based on examples from Iceland.

After a brief coffee break, the first of the three panel discussions took place focusing on the current and future policy background of geothermal energy utilisation. The core topics of this panel were covered by the European Geothermal Energy Council, represented by Mr Luca Angelino, and Krisztina Dely from Energy Cities. There was a general consensus about the need of a bottom-up approach when it comes to implementing local-scale geothermal projects, however it was also mentioned that this cannot be achieved without a strong commitment on a national level. The Icelandic approach on geothermal-related policy matters was demonstrated by the director of the Iceland.

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approach when it comes to implementing local-scale geothermal projects, however it was also mentioned that this cannot be achieved without a strong commitment on a national level. The Icelandic approach on geothermal-related policy matters was demonstrated by the director of the Iceland School of Energy, Ms Halla Hrund Logadóttir.

After the lunch break, which provided room for some excellent networking discussions, the most anticipated session of the conference followed: finance. Without the suitable financial instruments, even the best project ideas will wither prematurely. This panel thus focused on covering the multi-faceted subject of identifying the most appropriate tools and sources to get a project funded. The representative of the European Bank for Reconstruction and Development, Mr Adonai Herrera Martinez, discussed EBRD's experience about funding the installation of geothermal power plants in Turkey, which could also teach a few lessons for similar projects in Europe. Mr Holm, head of Mannvit Hungary, introduced the controversial nature of funding geothermal projects - currently, there is a lack of instruments to finance a project at the highest risk phase, namely exploration and drilling. If a resource is proven, there is no problem finding the right investor, but there are no tools at the moment to facilitate risk taking within this crucial step, which consequently hampers further developments. Mr Imolauer from Rödl and Partner (one of the most reputed business development consultancy firms in Germany) covered their ongoing initiatives in the field of risk mitigation funds, demonstrated on African and Latin American projects.

Members of the finance panel at the MGC. From left to right: Adonai Herrera Martinez (EBRD), Kai Imolauer (Rödl&Partner), Sigurdur Larus Holm (Mannvit), Agusta Thorbergsdottir (Navigo) Valerio Micale (CPI Venice)

During the panel discussions a very constructive debate unfolded aiming at understanding the reasons behind the lack of a similar risk mitigation fund set up for Europe.

The very last session of the conference allowed the audience to encounter with already developed success stories from all over Europe that have the potential to inspire other municipalities to engage in their own geothermal district heating projects. Case studies from Miskolc (HU), Riehen (CH), Kirchweidach (DE) and Szeged (HU) were introduced in great detail to the audience. The latter was covered in the form of a study tour on the following day, in conjunction with a visit to the Hungarian demo site of Mórahalom.
Most of the participants attended enthusiastically the small cocktail party afterwards, which helped to reinforce the professional and personal ties that had formed during the day.

The second day of the event was entirely dedicated to the site visits in South of Hungary, an area internationally recognised for its enormous geothermal potential. The participants were introduced in great detail to the layout of the Szeged and Morahalom systems, and a significant amount of technical details were revealed for them on site when visiting the various engineering components of the distribution system.
At Mórahalom, the mayor Mr Zoltan Nogradi welcomed the participants and briefly introduced them to the background of the local energy efficiency initiatives, which were highly supported by the investments taking place within the framework of GEOCOM. It is fair to say that after the amazing lunch at one of the geothermal heated locations the CHP engines came second as the biggest attraction demonstrating that it is possible to utilise the inherent natural gas content of the produced thermal water without using any extra energy for separating it from the water itself.

Based on the feedback received by participants both in person and via online questionnaires, it is evident that the conference really managed to make up to the expectations of the more than hundred participants arriving from all over Europe. At the moment we are working towards reaching out to those potential municipalities and service providing companies whose joint efforts will provide the required critical mass to officially launch the Mayors' Geothermal Club.

Should you be interested in browsing the coverage of the MGC on the internet, please follow the link below for the ultimate collection of MGC related coverage on the internet.
Link

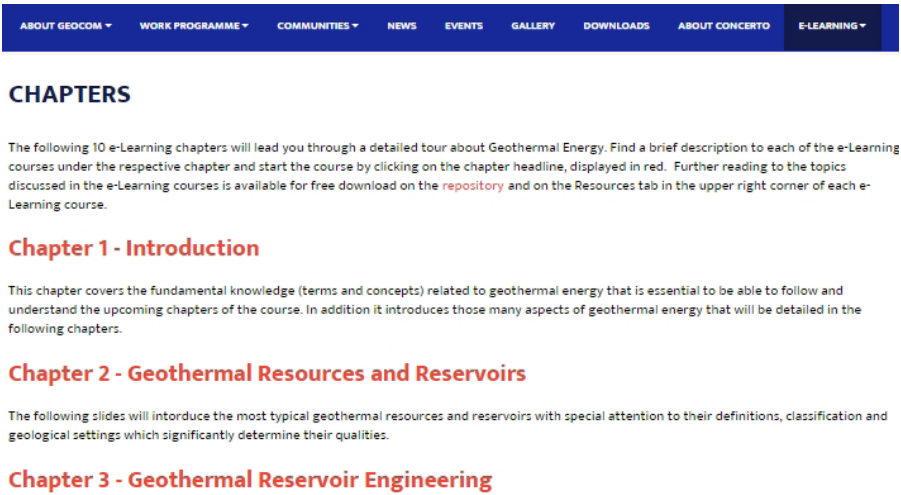
The presentations of the Conference have been published and they are available for download under the "Publications" section at the following link.

E-LEARNING

One of the primary objectives and tasks of the GEOCOM project since its very beginning was to deliver a comprehensive, yet easy to follow and understand summary of the many aspects of geothermal energy, thus contributing towards the better overall understanding of this technology by the general public. Over the course of 2015 the efforts towards the development of this e-learning curriculum bore fruit and the e-learning course was completed as a result of the active involvement of all the project partners.

The primary target groups for the 10-chapter training course are the technical staff and decision makers of those European municipalities that have deep geothermal potential, which was previously untapped. The course guides learners in an easy-to-understand fashion throughout the main aspects of geothermal energy including its source, the challenges it presents, and the many fields of its utilisation. To reach the individual chapters of the course please visit the e-learning tab on the www.geothermalcommunities.eu website or simply click here.

In parallel to the publication of the e-learning platform, an online repository of relevant technical papers, reports and manuals has been set up, where interested learners can access all the documents referred to within the course, and much more. This online repository can be reached via the following link.



NEW DELIVERABLE: D6.3 HANDBOOK ON BEST PRACTICES OF GEOTHERMAL RESOURCES MANAGEMENT

One of the final major tasks that still lie ahead of the consortium is the finalisation of a few deliverables that will summarise the results and achievements of the corresponding work packages. The final touches are being made on the "Handbook on best practices of Geothermal resources management" deliverable, which is developed by PAS MEERI with the active contribution of all partners with special attention on the demonstration sites. This comprehensive document aims to complement the content of the rather scientific and technical content of the e-learning course by covering the following, more economic aspects and topics of such investments in general:

- Financial constraints (such as capital investment, flow of capital, government incentives, subsidies, FIT etc), environmental constraints, land concessions, water rights, taxation have been thoroughly investigated as far as their handling is concerned through the relevant existing legislative and administrative framework in the demo countries.
- General analysis of economic viability and cost-effectiveness of geothermal projects in relation to avoidance/ reduction of CO_2 emissions (carbon footprint reduction) on a basis of existing and accessible data for selected cases from project partner countries.
- Sustainability issues in a financial context, especially with regards to the need for reinjection as opposed to total environmental costs of disposal of spent thermal waters in surface water streams.

Based on this input, a general matrix has been elaborated indicating the market drivers, fiscal measures and subsidies existing or absent in particular project partner countries and their role in the development of a geothermal investment. The matrix has provided an overview about the state-of-the-art in the partner countries related to geothermal energy utilisation. It has formed a basis to indicate the best measures and the best practices which are going to be recommended and transferred to other countries.

MONTIERI FINISHED WORKS AND PENDING RETROFITTING

Out of the three demonstration sites only Montieri has left some demo activities to be finished over the course of the last year of the project. This is partially due to the prolonged delivery and commissioning of the brand new geothermal district heating system and network and partly because the generated abundant renewable energy that is available for the local citizens literally shattered all rational rate-of-return calculations that were developed for the retrofitting interventions. As hardly any citizen was willing to submit his property for expensive retrofitting actions in Montieri, an alternative solution had to be devised to be able to deliver the promised retrofitting actions. The solution took a while to be drafted, but eventually it was concluded that the retrofitting actions will be implemented in those parts of the municipality of Montieri that never had the chance to benefit from the Geothermal District Heating system, namely in a number of satellite hamlets surrounding the main village. For this reason the local school in Bocchegiano (still part of the Comune di Montieri) see some significant retrofitting actions over the course of 2015, including full energy upgrade (thermal insulation, replaced doors and windows, installation of a biomass boiler).

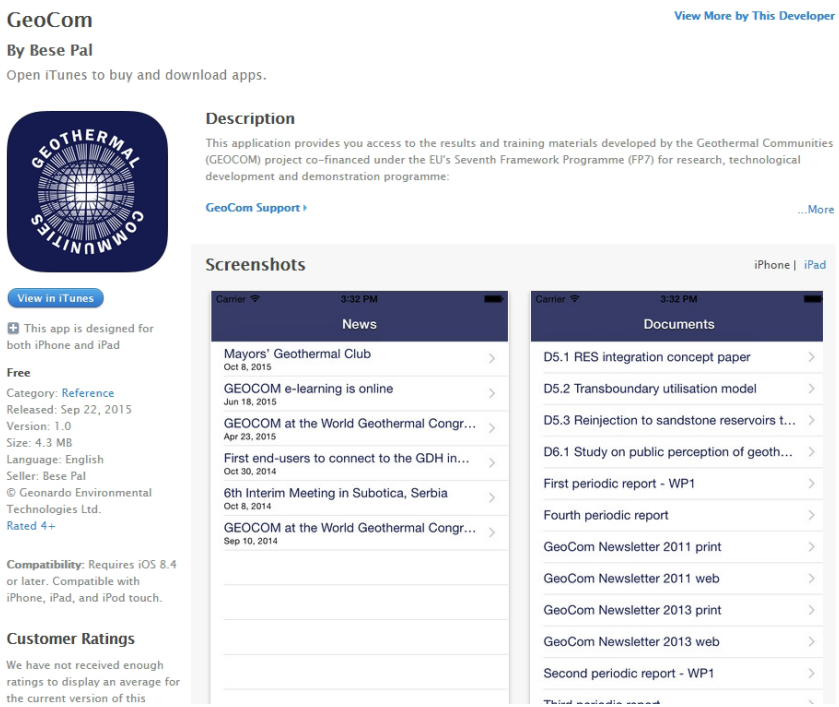
In addition to this investment two pilot apartments were refurbished in the less historic part of the main village to set a good example for the rest of the citizens who may consider having their apartments undergo a similar retrofitting action.

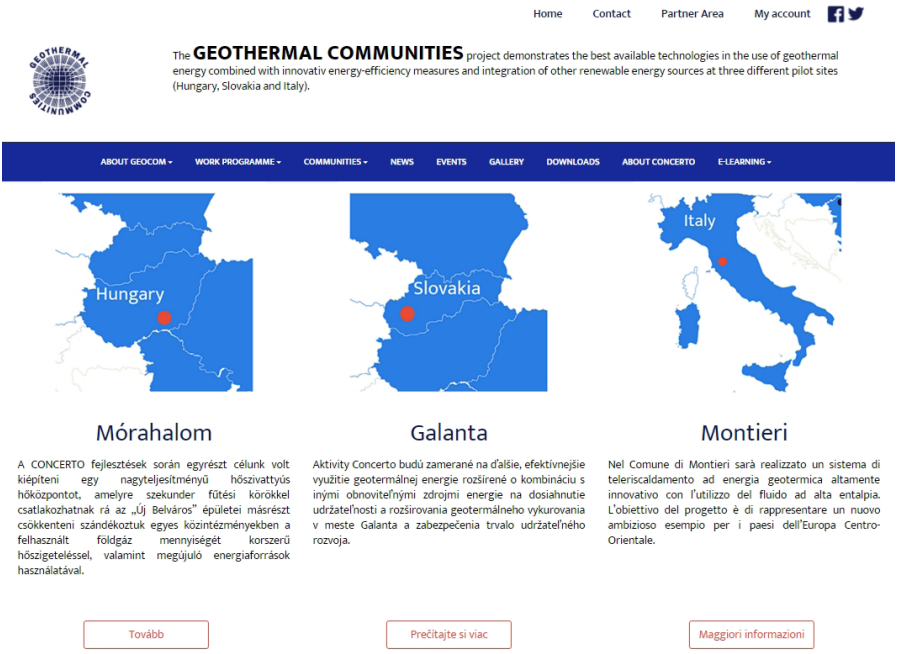
For a detailed description of the demonstration works performed in Montieri please visit the project website.

THE GEOCOM MOBILE APP

In our effort to keep up with the pace of technological development, the consortium decided to develop a simple application that can be run on your iOS smartphone making sure to have GEOCOM on the go with you. This rather basic and free-of-charge app will help you to navigate through the major achievements and results of the project, primarily by following a similar structure that you already got used to in the website. Please give it a try and we hope that you will enjoy this nice edition of GEOCOM while on the way.

You can download the GEOCOM app by visiting the Apple APP Store at the following link:
appstore.com/geocom
Please note that you need to have an IOS mobile to reach the app.



THE NEW LOOK OF THE WEBSITE

Earlier this year the project's website underwent a rather major overhaul to provide a better experience for the visitors willing to learn more about GEOCOM. Since the project is going to end on 31 December 2015, there will be no more updates to the content of the site. However, in order to maintain its integrity and to make it available for the public, the website will be slightly transformed to a platform with an even easier navigation. We hope that you have enjoyed the time you have spent browsing through its content over the years and we will do our best to ensure the same experience and remain available for you even after the end of the project.