

# EUROPEAN SHALLOW GEOTHERMAL DAYS

24./25.09.2019  
Brussels (Belgium)



## Strengthening shallow geothermal energy for a clean heating and cooling supply in Europe!

*Shallow geothermal energy represents a well-developed, non-volatile and clean technology for providing efficient heating and cooling across Europe. It is often associated with the use of ground source heat pumps but offers a wide range of applications such as geo-cooling or seasonal heat storage. Still, it is widely considered as a niche technology only covering around 2% of the renewable heating. From September 24 to 25, more than 60 experts from over 18 European countries met in Brussels to join the first “European Shallow Geothermal Energy Days” to discuss ways to support a better integration of this technology in the European heating and cooling market.*

The European Shallow Geothermal Energy Days aimed at connecting policy makers to scientists and professionals, to promote and discuss opportunities for boosting this technology in the upcoming decade. This event represents a new format introduced by the European Geothermal Energy Council (EGEC), the Renewable Heating and Cooling Platform (RHC-ETIP) and the Interreg Central Europe project GeoPLASMA-CE.

**The first day focused on policy issues related to the use of shallow geothermal in the light of the Clean energy for all Europeans package.**

The first session covered four keynote speakers addressing the current markets in Europe, energy policies in the upcoming decade and measures to support shallow geothermal in Europe. P. Dumas (EGEC) presented the latest market numbers in Europe. Although by 2018 capacities of more than 23.000 MWth have been installed in over 1.9 million units across the EU, the shallow geothermal heat production is growing less/slower? than the overall heat pump market. Consequently, only a few countries including Sweden and Austria fulfilled the NREAP-2020 goals regarding the use of shallow geothermal energy.

D. Stefanica (European Heat Pump Association - EHPA) presented the overall market of heat pumps in Europe. Since the late 2000s there is a significant increase of sold heat pump units, which is mainly triggered by aerothermal systems. EHPA expects further doubling of the stocks each 8 to 10 years in the next decades. Inside the overall heat pump market, shallow geothermal systems (ground source heat pumps – GSHP) are at stable sales number but affected by a lower growth than aerothermal systems, which will probably lead to a further decline regarding market shares. Currently, GSHP

systems are well established inside the heat pump market in large volume buildings and regions with colder climatic conditions.

E. Hoos (DG Energy) pointed out the importance and great expectation of the EU commission on shallow geothermal in the next decade. Now it is up to further technological developments to make shallow geothermal more competitive and attractive to investors.

G. Goetzl (Interreg Central Europe project GeoPLASMA-CE) pointed out that rather non-technological than technological barriers hinder a better inclusion of shallow geothermal in the European heating and cooling market. The main challenges to be addressed in the next decade cover legal barriers, high upfront costs, low awareness and visibility at decision makers and end users as well as limited access to information and qualified services. In contrast, the main opportunities for applying shallow geothermal are given by combined heating and cooling linked to seasonal heat storage for mitigating urban heat islands and by increasing the efficiency of the electric consumption for heating supply in Europe to reduce peak energy demand. GeoPLASMA-CE also promotes to set clear goals for the inclusion of shallow geothermal until 2030: raising the share of installed capacities inside the heat pump market from currently around 20% to 50% would increase the electric consumption of the heat pump market by almost 10%. This implies an increase of the heat produced by GSHP by almost 8 times to around 210 TWh in 2030.

The second session included a panel discussion on the expected and possible future role of shallow geothermal energy in the “Clean Energy for all Europeans initiative” addressing the following main questions: “What contribution can shallow geothermal make to decarbonize the heating and cooling sector in Europe and which non-technological hurdles need to be removed?” During a vital discussion, the participants agreed that the mentioned non-technological hurdles are relevant and need to be addressed in the next years. Efforts on both, European commission and Member States level should include a simplification of licensing procedures for small scale installations, the promotion of innovative and good practice solutions, especially linked to public buildings and measures to foster an expansion of the service sector linked to the installation and use of shallow geothermal.

The final session of day 1 addressed good practices and innovative solutions of shallow geothermal use in Europe. 7 short presentations covering Switzerland, The Netherlands, Germany, Austria, Norway, Belgium and Austria showed various examples how shallow geothermal energy can be used or managed. Among them, low temperature heating and cooling grids in Switzerland and Austria or the supply of large volume buildings in Germany were presented. Moreover, optimization concepts by combining shallow geothermal with other renewables (Norway) and the use of shallow groundwater bodies for seasonal heat storage in The Netherlands, Belgium and Italy were shown. Session 3 was complemented by additional posters covering current research activities on shallow geothermal in Europe.

### **The second day was dedicated to discussing the upcoming Strategic Research and Innovation Agenda for geothermal heating & cooling.**

In the beginning J. Urchueguia presented the current activities of the Renewable Heating and Cooling Platform (RHC-ETIP) on the inclusion of shallow geothermal energy. RHC-ETIP is currently preparing a draft roadmap, which will be open for public consultation during autumn 2019. M. Soede (DG Energy) pointed out that geothermal energy was one of the best funded energy technologies in the past H2020 framework program of the commission. There are still opportunities to apply for submitting project ideas in the last call of the current framework program. Suitable calls focus on energy efficiencies, renewable energy on geographical islands and measures to support market uptakes. The new Horizon Europe framework program from 2021 to 2027 will have a strong focus on climate change mitigation. New approaches in H-Europe will include clustered research topics (e.g. climate – energy – mobility),

sectoral coupling and market support measures. Finally, J. Reichert (SET Plan IWG5) presented the current activities of the Strategic Energy Technology Plan. The SET plan aims at accelerating the development and deployment of low carbon technologies by improving new technologies and reducing their costs. From 2018 on, the SET plan is implemented in the EU Member States. Shallow geothermal energy is currently marginally included by heat pump applications in the building systems for heating and cooling. The Implementation Working Group 5 is open to receive inputs from the shallow geothermal community in Europe to enhance the role of this technology for low carbon heating and cooling in the future.

The second day was concluded by a round table discussion “Towards a new agenda and implementation roadmap to 2030 for research and innovation in shallow geothermal heating and cooling”. Due to the great success of the first European Shallow Geothermal Energy Days, the European Geothermal Energy Council is considering the set-up of annual follow-up Shallow Geothermal Energy Events in the future. For more information on the presented contents please visit [www.geoplasma-ce.eu](http://www.geoplasma-ce.eu) or <https://www.egec.org>.

## Photos



Welcome address of the organizing panel of the Shallow Geothermal Energy Days.



The hero of the GeoPLASMA-CE web video, watch it [here](https://www.youtube.com/watch?v=vJtwFOxkN0I&feature=youtu.be) (<https://www.youtube.com/watch?v=vJtwFOxkN0I&feature=youtu.be>)



Panel discussion on the expected and possible future role of shallow geothermal energy in the “Clean Energy for all Europeans initiative”. From left to right: U. Solc (Geological Survey of Slovenia), D. Stefanica (EHPA), G. Goetzl (Geological Survey of Austria), P. Dumas (EGEC), J. Urchueguia (RHC-ETIP) and R. Grimm (geoENERGIE Konzept GmbH).



R. Grimm presenting good practice examples on shallow geothermal use in large volume buildings in Germany.