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Press release

Joint Efforts to Strengthen Geothermal Energy

Geothermal heat is a promising source to enrich and significantly contribute to the renewable energy mix in a long-term perspective. To foster the use of geothermal energy in a secure, clean and efficient way, the European Commission (EC) supports twelve projects within the Horizon 2020 Programme (H2020) and pursues one project of the former 7th Framework Programme (FP7). This brings together almost 20 countries and numerous stakeholders, providing a wide range of knowledge and expertise to strengthen the use of geothermal energy.

Geothermal energy offers a sheer infinite resource for heat extracted from the underground, combining a constant and reliable supply with low carbon emissions. Within the EU, geothermal energy contributed in 2015 3.1% to the total primary production of renewable energy.¹ To exploit the full potential of geothermal energy for heating and cooling, as well as for generating electricity, the EU is funding several research and demonstration projects. The H2020 and FP7 projects on geothermal energy address different challenges and research areas. The focus lies on the development, improvement and demonstration of technologies for shallow and deep geothermal energy exploitation with an emphasis on safety, sustainable responsibility and cost optimisation.

The drilling technology used to extract geothermal energy is one important field of innovation, as it can account for up to half of the total expenses required to fund a geothermal project. The projects known as **GEOTech**, **Cheap-GSHP** and **ThermoDrill** work on novel drilling technologies to improve the reliability of geothermal systems, facilitate their handling, and enhance the rate of penetration. Another core area is the performance of wells, addressed by the projects **GeoWell** and **SURE**. **GeoWell** develops technologies optimised to complete and monitor high temperature geothermal wells. **SURE** investigates how to increase the performance of geothermal wells with a higher degree of control and a minimized environmental impact compared to conventional stimulation technologies. Finding the right place to drill is an emphasis of **IMAGE**, which enhances the accuracy of a siting process. **DESCRAMBLE** also focuses on site characteristics by targeting high temperature and pressure conditions with the aim to demonstrate safe drilling based on best practices from oil and gas production. All these developments help to substantially reduce costs and minimize undesirable side-effects. **Cheap-GSHPS** aims to reach these goals in the context of shallow geothermal systems with an emphasis on public and historical buildings. Thereby, it simultaneously strives to raise awareness for geothermal energy technology throughout Europe.

Other innovations are evolved by **CHPM2030** and **MATCHING**. **CHPM2030** aims to invent a novel and potentially disruptive technological solution, helping to satisfy the European need for energy and strategic metals in a single interlinked process. Meanwhile, **MATCHING** aspires to reduce the cooling water demand in the energy sector through technological innovations, to be demonstrated in thermal and geothermal power plants. The testing of such developments and the publication of the results are an elementary success factor for future projects. **EoCoE** investigates a case study for the use of geothermal energy for city quarters by high-performance computing simulations providing guidelines on how geothermal energy may be incorporated in the future energy mix. **DESTRESS**, **DEEPEGS** and **GEMex** will examine advanced technologies at several geothermal sites with different geological settings. Whereas **DESTRESS** demonstrates soft stimulation treatments, **DEEPEGS** focuses on innovative technologies to be deployed in deep wells and **GEMex** has an emphasis on unconventional geothermal systems. Furthermore, a collection of good practices will assemble the outcomes for public use.

¹ <http://ec.europa.eu/eurostat/web/environmental-data-centre-on-natural-resources/natural-resources/energy-resources/geothermal-energy>

The EU funding phase of these ongoing geothermal projects is four years and will end in 2020. The results are expected to bring a substantial contribution to the promotion of geothermal energy in Europe and beyond.

More Information

Geothermal research projects funded by the EU programmes:

www.geothermalresearch.eu

European Commission on geothermal energy:

www.ec.europa.eu/research/energy/eu/index_en.cfm?pg=research-geothermal

H2020 Geothermal Projects

Cheap-GSHPs <http://cheap-gshp.eu>

CHPM2030 <http://www.chpm2030.eu>

DEEPEGS <http://deepegs.eu>

DESCRAMBLE <http://www.descramble-h2020.eu>

DESTRESS <http://www.destress-h2020.eu/home>

EoCoE <http://www.eocoe.eu/>

GEMex <http://www.gemex-h2020.eu>

GEOTeCH <http://www.geotech-project.eu>

GeoWell <http://www.geowell-h2020.eu>

IMAGE <http://www.image-fp7.eu>

MATCHING <http://matching-project.eu/>

SURE <http://www.sure-h2020.eu>

ThermoDrill <https://thermodrill.unileoben.ac.at>

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