



REFLECT project presented main outcomes at European Geothermal Congress 2022

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The Horizon 2020-funded [REFLECT project](#) aims at preventing problems related to geothermal fluid chemistry which are currently a key issue for the efficiency of most deep geothermal operations. The project team presented its main outcomes at the European Geothermal Congress (EGC) in Berlin in October 2022.



Image: Introduction by REFLECT coordinators Simona Regenspurg and Katrin Kieling (GFZ).

The one problem plaguing almost all deep geothermal operations in the world is related to the chemistry of geothermal fluids. In order to maximise both the operational efficiency and economic returns of geothermal power plants, it is vital that these systems work well on the long-term without requiring significant maintenance. The key to this is preventing or controlling deleterious physical and chemical reactions such as degassing and mineral precipitation that result in corrosion and scaling.

The REFLECT project has therefore acquired **new chemical, physical and microbiological data** from sampling of natural fluids, as well as **new thermodynamic and kinetic reaction data** from experiments in the lab. These data were implemented in **predictive models** to determine fluid reactions at extreme conditions and better predict geochemical processes in the geothermal loop.

The data collected throughout the project duration will also feature in a comprehensive **European Fluid Atlas** which is due to be launched before the end of 2022. This open-access online database will provide information on fluid properties all across Europe. The atlas will cover geographical and physical data of wells, fluid sample, rock sample as well as reservoir data. REFLECT researchers are also developing a **downhole sampler for high-temperature geothermal wells** which is designed to tolerate harsh environments at high pressures and elevated temperatures. A prototype of the sampler is currently under construction, with subsequent testing and in-situ sampling for validation.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 850626.





Image: Presentation of the Downhole Fluid Sampler by Gunnar Skúlason Kaldal (ISOR).

The results presented during the REFLECT Final Conference will enable geothermal operators to significantly increase technology performance and reduce maintenance costs or downtimes and, thus, reduce operational costs and increase the number of economically viable geothermal projects.

In light of the current energy crisis, the endeavors of the REFLECT project contribute to increasing the share of geothermal within the European energy market and diversifying the renewable energy portfolio, supporting thus the EU's [REPowerEU initiative](#).

[Access the conference resources and other REFLECT presentations given during EGC:](#)

www.reflect-h2020.eu/2022/10/24/reflect-final-conference/

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[Contact:](#)

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| <p>Katrin Kieling (Project manager): katrin.kieling@gfz-potsdam.de Simona Regenspurg (Scientific coordinator): regens@gfz-potsdam.de Helmholtz Zentrum Potsdam Deutsches Geoforschungszentrum (GFZ) Telegrafenberg 17 Potsdam 14473 (Germany)</p> | <p>Anita Stein (Dissemination and exploitation): anita.stein@eurogeologists.eu European Federation of Geologists (EFG) Rue Jenner 13 1000 Brussels (Belgium)</p> |
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